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Health and Socioeconomic analysis of waste picking activities in Durban

By

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**THIS DISSERTATION IS SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS OF THE MASTER OF DEVELOPMENT STUDIES**

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Declaration

I, Phathiwe Sibanda declare that:

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I would also like to thank my mother Mrs Rhodah Ndlovu for her love and support.

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Dedication

This work is dedicated to my husband Mabutho Sibanda and my children Dumoluhle, Thandoluhle and Sizoluhle (the Luhles) as well as my mother-in-law who passed on while this work was still in progress, and my mother Rhodah.

Abstract

The main aim of this study was to unpack the health and socio-economic status of waste picking activities in Mayville, Cato Manor and Westville in Durban. It analysed the quality of life of waste pickers, their awareness of the risks associated with this kind of work and the extent of their uptake of health protective measures. A quantitative approach was adopted, and a questionnaire was used to gather data from 81 waste pickers. The findings revealed that unemployment was the main reason for taking up waste picking and that this was the respondents' main source of income. It was also found that most of the respondents resided in shacks and had no access to running water. Most were unaware of the risks associated with this kind of work. Based on these findings, it is recommended that economic development be pursued to create employment opportunities and that delivery of basic services such as potable water be improved, especially in informal settlements. Awareness campaigns should be launched to educate waste pickers on handling waste and on the risks associated with this kind of work as well as the need to adopt protective health measures. Finally, the researcher recommends that further research should be conducted on waste picking in Durban as there is a paucity of information on this activity in the city.

Keywords Waste pickers, socio-economic, health, recycling

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Abbreviations

ECLAC	Economic Commission for Latin America and the Caribbean
NGOs	Non-Governmental Organisations
SDGs	Sustainable Development Goals
WB	World Bank
WPPs	Waste Paper Pickers

CHAPTER ONE: BACKGROUND TO THE STUDY

1.1 Introduction

This chapter introduces the study by presenting background information, the problem statement, and the objectives and research questions. The study's significance is highlighted, and the chapter ends with the structure of the dissertation.

1.2 Background

According to Parihar, Baredar and Sharma (2016), as far back as 2500BC, waste disposal was the subject of much attention in the towns of Babylon and Assyria. The plague outbreak in the 14th century, which was exacerbated by urbanization and industrialization brought about by progress in human civilization Parihar et al, (2016) highlighted the need to manage waste. Rahman, Siwar and Begum (2017) note that the more recent systems developed in the 1960s provided more efficient ways of dealing with solid waste and the collection and removal of waste became a key factor in solid waste management. This led to the emergence of recycling activities and businesses around the world, some of which have produced millionaire entrepreneurs (Yaacob, 2015; Akinbola, Olugbenga and Kaeem, 2015). Countries like Indonesia have leveraged recycling activities to foster community empowerment projects and alleviate poverty (Hadiyanti, 2016). Waste pickers have also started to organize. The first World Conference of Waste Pickers and the Third Latin American Conference of Waste Pickers were both held in 2008, while Columbia launched a National Day commemorating waste pickers in the same year. According to Yang et al. (2017), worldwide, 15 million people are involved in informal recycling activities. Yang et al. (2017) add that collaboration among informal and formal paper recycling stakeholders has borne fruit in many Latin American countries and that recycling has proven effective in both waste management and poverty reduction. Rahman et al. (2017) note that recycling enables re-usage, reduction and management of waste in a systematic manner, with waste pickers situated at the beginning of the recycling value chain.

According to Van Zeeland (2014), waste pickers' organizations were founded during the 1980s and 1990s with the support of Non-Governmental Organizations (NGOs). A national movement was launched at the first national meeting of waste pickers in Brazil in 1991, and this profession

was recognized by the state in 2002. Van Zeeland (2014) notes that this was due to waste pickers' collective action which demonstrated their positive influence on public policies. Since then, many national waste pickers' movements have been launched, including in Kenya and South Africa. Waste pickers' cooperatives have secured contracts from municipalities to undertake aspects of solid waste management and in some cases, community-based approaches to solid waste management have been developed (Rigasa, Badamasi, Galadimawa and Abubakar, 2016). Both cooperatives and community-based approaches generate an income for waste sorters.

In the cities of developing countries, it is now the norm see women and men sharing the roads with vehicles. Some carry their pickings on their heads while others push trolleys. Waste pickers are seen sifting through the bins in complexes, and rubbish bags placed on the street, while others focus on industrial areas and landfills. From their outward appearance, one can tell that all is not well with these people, who are referred to as 'scavengers', 'waste harvesters', 'waste pickers' and 'amaphanda' in isiZulu. The researcher's observations led to the conclusion that there is more to this activity than simply collecting waste material and this sparked her interest in investigating this phenomenon.

Many factors push as well as pull people into different activities in order to make a living, especially in the informal sector. Poverty and unemployment are among the factors that drive people into informal activities such as waste picking for recycling. Informal trading is not regulated by the state; hence, informal traders do not pay tax. While the literature notes the relevance and importance of waste pickers and subsequent recycling (see for instance Yang, Ma, Thompson and Flower, 2017 and Rahman, Siwar and Begum, 2017), there is a paucity of research on how waste pickers contribute to the welfare of their families in the South African context. Furthermore, debate continues on the socioeconomic and environmental effects of trading in waste by informal waste pickers.

Globalization, industrialization and modernization have transformed developing countries, but many are still struggling to adjust to the new order. At local level, waste management systems in developing countries are unreliable and too small-scale. This has paved the way for community members to turn waste into a useful resource. Madsen (2005) observes that, three principles should

underlie waste management in developing countries, namely, (i) waste to become wealth, (ii) refuse to become a resource, and (iii) trash to become cash. Moreover, waste picking is an important survival mechanism for the very poor in different countries, while waste pickers make a significant contribution in areas with insufficient and inefficient waste management (Madsen, 2005; Medina, 2008).

The World Bank notes that globally, poverty levels remain high, although meaningful progress has been made since adoption of the Millennium Development Goals (MDGs) (World Bank Group, 2017). Scholars around the world have debated the relationship between poverty and inequality. A study conducted in Central and North African countries concluded that inequality fuels poverty in Africa (Ncube, Anyanwu and Hausken, 2014).

Dealing with waste, be it collection or managing it, is the responsibility of local government (municipalities). Due to their lack of resources, garbage lines the streets of many cities in developing countries. Yigit (2015) asserts that recycling not only enables waste pickers and their families to survive, but benefits communities, municipalities and the environment. Hence, waste pickers should be recognized and valued by the state in its policy formulation.

While waste picking activities in cities contribute to poverty alleviation, they also pose risks as many waste pickers are unaware of the health hazards of this trade (Rahman, Siwar and Begum, 2017). Yang et al. (2017) argue that poor regulation of recycling activities or lack thereof and the use of primitive recycling methods create environmental and health hazards that have other socioeconomic and environmental consequences.

1.3 Problem Statement

There has been a significant increase in the number of women scavenging in bins and refuse around the complexes and streets in Durban. Few of these women, who often pick solid waste such as cardboard and paper, wear protective clothing. Of late, men have also joined this waste picking business. The waste pickers collect waste paper and sell it to recycling companies which buy it on the streets of Durban townships and suburbs. Most studies in this field have focused on recycling businesses. To the best of the researcher's knowledge, no studies have investigated how the waste

pickers benefit from these activities and what challenges and opportunities they face in their economic endeavour. Unemployment in South Africa increased from 4.4 million in 2003 to 5.7 million in 2016 (Stats SA, 2017) and it has not been established how many of the unemployed have turned to waste picking to survive. Moreover, their contribution to the local economy is unclear.

1.4 Aim of the study

The main aim of this study was to unpack the health and socio-economic status of waste pickers in Mayville, Cato Manor and Westville in Durban.

1.5 Objectives

The study's objectives were:

- To analyse the quality of life of waste pickers
- To assess waste pickers' awareness of the risks associated with this work
- To establish the extent of the uptake of health protective measures by waste pickers

1.6 Research questions

1.6.1 Key question

What is the health and socio-economic status of waste pickers in the locations of Mayville, Cato Manor and Westville?

1.6.2 Sub-questions

- What is the quality of life of waste pickers?
- To what extent are waste pickers aware of the risks of this work?
- How often do waste pickers take protective measures as far as their health is concerned?

1.7 Significance of the study

The significance of the study is fourfold:

1.7.1 For waste pickers

The study's findings will be presented to local government, enabling it to formulate policies to empower waste pickers. The findings will also assist NGOs and the private sector to launch

awareness programs and projects to educate waste pickers on the health risks of this work and how to prevent them.

1.7.2 Communities

The study's findings will assist communities to relate to waste pickers in a more positive manner and to treat them with dignity.

1.7.3 Academia

Given that there is a paucity of research on waste picking in Durban, this study will add to the body of knowledge and shed more light on this phenomenon.

1.7.4 Policy makers

The findings will inform policy making on waste picking that takes the views of waste pickers into account and values their work and their contribution to the local economy.

1.8 Limitations of the study

When prospective participants were initially approached, they anticipated that they would receive some financial reward. When it was explained that the research was for purely academic purposes, some declined to participate. The second limitation was that, while the target sample size was 120, the researcher only managed to enlist 81 respondents, yielding a response rate of 68%.

Finally, the choice of a quantitative research approach became a limitation because, while the participants had much to tell, the closed-ended questions did not allow for this. Language was also a barrier as the researcher and the research assistant speak English and isiZulu, while most of the participants were Xhosa speakers. The researcher had to ask a Xhosa speaker to interpret.

1.9 Structure of the dissertation

The study comprises five chapters.

Chapter 1 introduces the study. It provides the background to the research by discussing the evolution of waste picking and presents the problem statement as well as the research objectives and questions. The main aim of the research and the study's significance for various stakeholders are also explained. Finally, the study's limitations are highlighted.

Chapter 2 discusses the theoretical framework that underpinned this study and presents a review of the relevant literature. The literature review is presented in themes which were developed from

the study's objectives. It unpacks waste picking and examines the quality of life of waste pickers as well as their awareness of the risks associated with informal waste picking.

Chapter 3 presents the research methodology employed for this study. It discusses the research design, the study population and the sampling technique. The chapter also outlines the processes employed to collect and analyse data and how data validity and reliability was assessed. It ends with a discussion on the ethical considerations taken into account.

Chapter 4 presents, analyses and interprets the study's findings. It presents the participants' biographical information and the data on the waste pickers' quality of life, their awareness of the risks associated with the waste picking business and their uptake of measures to protect their health. These findings are presented according to the different themes which emerged.

Chapter 5 presents an overall conclusion and the recommendations arising from the study's findings.

1.10 Conclusion

This chapter laid the foundation for the study by presenting a brief background on the evolution of waste picking. It presented the problem statement, the main aim of the study and its objectives and research questions. The significance of the study to waste pickers, communities, academia and policy makers was highlighted. The study's limitations were discussed and the chapter ended with an outline of the dissertation.

The following chapter presents the theoretical framework that informed this study and a detailed review of the relevant literature.

CHAPTER TWO: THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1 Introduction

This chapter presents the theoretical framework that underpinned this study and a review of the relevant literature.

2.2 Theoretical Framework

Two contemporary theories were identified for the study, namely, the economic, political and social distortions theory (also known as the discrimination theory) and the geographical disparity theory.

2.2.1 Economic, political and social distortions theory

The economic, political and social distortions or discrimination theory was developed by Bradshaw (2006) to explain the origins and causes of poverty. It posits that poor people are often marginalized and vulnerable because of their situation. In turn, they are excluded from resource allocations or receive less than others because they are powerless and voiceless (Andy and Bradshaw, 2013; Viljoen, 2014). The poor are also excluded from decision making and political structures as thus cannot express their views on matters that concern them. Andy and Bradshaw (2013) identify gender, race, religion, disability, and occupation as other factors that lead to people experiencing poverty. The economic, political and social distortions theory links with the common belief and existing discourse that waste pickers are marginalized, and economically and socially excluded, which makes them vulnerable to poverty (Viljoen, 2014). It underpins most of the current study's research objectives and questions as the informal sector in which waste pickers operate is characterized by economic, political and social instability.

2.2.2 Geographical disparity theory

The geographical disparity theory was proposed by Morrill and Wohlenberg in 1971; and was recently popularized by the Economic Commission for Latin America and the Caribbean (ECLAC) (2014). It states that factors like unemployment, poverty, and economic and political instability push people to migrate to different geographical areas in search of better economic opportunities. In other words, migrants move to areas that are not as poverty stricken as their existing location.

Geographical disparity could be rural to urban, or national or international. The theory asserts that it occurs due to disinvestment, lack of capital or a lack of innovation in a geographical area which in turn leads to migration (Morrill and Wohlenberg, 1971). As people migrate to different places, they are unemployable in the formal sectors because of different reasons of which some of these reasons could be lack of documents or skills, as a sequence they end up delving into waste picking business as a source of income. This theory was appropriate for this study as the push factors that lead people to migrate result in some working in the informal waste picking business because they are unable to find jobs in the formal sectors.

2.3 Empirical Literature

This section reviews the international empirical literature on waste picking.

2.3.1 Unpacking the waste picking business

The challenges confronting underdeveloped and developing countries have resulted in the growth of large informal economies that often outstrip the formal economy in terms of size. Given that the formal sector cannot accommodate all those seeking employment, many people in these countries survive by engaging in informal activities.

Waste picking and separating is the first step in recycling and is hence an important phase. Waste pickers that retrieve material that others no longer want or that is of no further use to them are referred to as scavengers (Downs and Medina, 2000). This activity is unregistered and unregulated. Downs and Medina (2000) note that scavenging is not new and that it occurs even in well-developed countries. They add that it is not only due to political instability, but economic crises. Downs and Medina (2000) cite the examples of America during the Great Depression, when unemployed people survived by collecting metal and other scrap and Mexico after the devaluation of the peso. They conclude that scavengers are important mediators between societies and their environment.

South Africa is home to a vast unskilled labour force that struggles to find employment in the formal sector. Waste picking does not require qualifications or training and people determine their own salaries based on the effort they put in and the hours they spend at work (Blaauw, Schenck and Viljoen, 2015). Blaauw et al. (2005) note that it is easy to enter this industry as there are no

barriers or requirements. It is estimated that there are 35-70,000 waste pickers in South Africa (Blaauw et al., 2015).

Waste picking refers to the removal of recyclable material from mixed waste. Torun, Culer, Ipek, Iyiol and Cici (2006) note that this is an informal activity. Waste pickers sort and add value to things that have been rejected as valueless and of no use. According to Torun et al. (2006:30), regardless of the social status attached to informal waste picking and its impact on waste pickers' wellbeing, it has positive social, environmental and economic effects. It provides employment and a livelihood for impoverished, marginalized and vulnerable individuals or social groups. While it was projected that the South African economy would grow at a rate of 5% per annum over the past five years, the actual growth rate was less than 3.2% per annum; this is not adequate to absorb the labour supply (Finn, Leibbrandt and Oosthuizen, 2014). Furthermore, lower growth rates discourage investment, undermining the possibility of creating more jobs.

Nzeadibe (2009) observes that, while waste picking is not covered by a separate Sustainable Development Goal (SDG), it is making a significant contribution to achieving the SDGs as it assists in poverty reduction, improves livelihoods, creates employment and enhances environmental sustainability. For example, Nzeadibe (2009) found that informal waste management had a positive economic and environmental impact in Enugu State in Nigeria. It should thus be incorporated in global and local policies.

Climate change is a major global concern and waste picking assists in addressing this issue, thus promoting environmental sustainability (Forrest and Tuwizana, 2012), especially in developing countries. Moreover, it is a survival strategy for many in such countries.

The waste management sector in South Africa has grown in recent years (Karani and Jewasikiewitz, 2006). In terms of sustainable development, Karani and Jewasikiewitz (2006:54) note that this sector provides “opportunities for enhancing investments in carbon credits that target reduction of methane from landfills and moveable assets in relation to environmentally sound equipment required for effective waste management”.

Various perspectives were considered in developing the SDGs. Harris (2000) highlights the three perspectives of economic, ecological and social paradigms. He argues that sustainable development must address social inequality and environmental damage while preserving a sound

economic base. One of the major lessons learnt from the formulation of the SDGs was the broad representation and consultation process in order to promote meaningful grassroots participation.

The SDGs which are meant to be achieved by 2030 include a number of targets that are relevant to waste pickers. Gupta and Vegelin (2016) note that Goal 1 aims to eradicate poverty in all its forms, while Goal 2 is to do away with hunger and malnutrition and Goal 3 aims to enhance wellbeing and healthy lives. Waste picking has the potential to contribute to the realization of all three of these goals and should thus be accorded adequate attention by states when planning and implementing policies to achieve the SDGs.

Rifat, Siddique, Abouzied and Chen (2016) note that, migration from rural to urban areas has resulted in Dhaka in India having the world's 11th largest population. Since most migrants do not have the skills to perform formal jobs, they engage in waste picking (Rifat et al., 2016). Rifat et al. (2016) add that poor municipal planning and unreliable services lead to waste being mismanaged, causing diseases, environmental contamination, flooding and fires (Rifat et al., 2016). The waste picking business is a hazardous occupation as those that collect trash from tall buildings are forbidden to use the elevators and must make their way by means of staircases (Rifat et al., 2016). Rifat et al. (2016) estimate that waste pickers in Dhaka cover around 300 to 500 houses a day and sell their wares daily because of a lack of storage facilities and well as to avoid contracting diseases by keeping trash. A positive aspect is that these waste pickers seem to communicate well with community members as they whistle to alert people to put their rubbish out for collection (Rifat et al., 2016).

Firdas and Ahmad (2010) observe that increased economic activity as a result of development and changes in consumption patterns have significantly increased the amount of waste generated, and that local governments' waste management systems are both insufficient and unscientific. Firdaus and Ahmad (2010) thus recommend that the relevant stakeholders work together to manage waste. These include grassroots community members that are most affected by waste, NGOs, local government, the private sector and others (Firdaus and Almad, 2010). Grant and Ababio (2012) note that, in every developing country, a fraction of the population relies on the waste generated by their rich neighbours.

Urbanization is proceeding apace in developing countries, with many also experiencing fairly rapid economic growth. In China, urbanization has resulted in a significant increase in the amount of

solid waste generated (Fei, Qu, Wen Xue and Zhang, 2016). In the Philippines, the strategy of integrating informal recyclers into municipal solid waste management proved extremely fruitful (Paul, Jaque, Raneva and Villamor, 2012).

The informal waste picking business has advantages and disadvantages. The advantages include economic, environmental and financial benefits while health and social risks are among the disadvantages (Wilson, Velis and Cheeseman, 2006). Wilson et al. (2006) note that many urban populations rely on recycling material for survival. They thus argue that strategies need to be formulated to ensure that this informal business improves the standard of living of those involved and that effective recycling takes place.

In summary, scholars agree that informal waste picking contributes positively to economic development and creates job opportunities.

Factors that push and pull waste pickers into this activity

High levels of poverty and inequality as well as unemployment and uneven distribution of resources leave many people with no choice but to embark on waste picking in order to survive.

It is estimated that there are around 35-70,000 waste pickers in South Africa (Blaauw et al., 2015). Yang et al. (2017) note that, globally, about 15 million waste pickers are involved in sorting, collecting and reusing waste. Interestingly, Yang et al. (2017) note that the integration of the informal and formal waste sectors in Latin America produced positive results, suggesting that this model could be replicated in other developing countries. Many developing countries suffer high levels of illiteracy and have poor education systems, resulting in a poverty trap. Studies have shown that there is a positive relationship between education, the quality of education, and reduced poverty and income inequality, especially in South Africa (Graven, 2014; Spaul, 2013; 2015; Timæus, Simelane and Letsoalo, 2013).

While men and children are involved in waste picking activities, Yang et al. (2017) note that most waste pickers are women. Women and children are the most marginalized in many societies. Furthermore, women's voices are not heard due to gender inequality. Madsen (2005) proposes that women and children waste pickers should be empowered through economic and entrepreneurial programs and that recycling schools should be established for waste pickers to acquire skills. This would contribute to economic development, help to address poverty and

enhance environmental sustainability. Medina (2008) notes that people that work in the informal waste sector are often those that are marginalized by society, for example, the physically challenged who find it difficult to find work, women, children, the elderly, migrants and the unemployed. Furthermore, many developing countries have high unemployment rates (Medina 2008). Schenck and Blaauw (2011) note that waste pickers are usually unskilled and have low levels of education. Poor education or a lack of education result in a poverty trap. Gutberlet and Uddin (2017) add that waste picking is most prevalent in low- and medium-income countries.

Most waste picking takes place in urban areas where few jobs are available. Political, economic, social and cultural factors are among the many reasons for migration. Migration can take place within a country or between one country and another. People might relocate temporarily and return to their place of origin after a certain period of time, or they may relocate permanently. Push and pull factors cause people to migrate. The former are the factors that force people to move, such as poverty, unemployment, and economic instability, while the latter attract people to the new location. The relationship between poverty and inequality has received attention from scholars across the world. However, Africa remains the most interesting case study due to its unique challenges. A study conducted in Central and North African countries concluded that inequality fuels poverty in African countries (Ncube, Anyanwu & Hausken, 2014). The World Bank (2017:2) states that, “poverty is pronounced deprivation in wellbeing” while inequality refers to “distribution of attributes, such as income or consumption, across the whole population”. Command of commodities and the income that these generate for consumption are central to the definition of wellbeing and poverty. Thus, the relationship between poverty and inequality is positive with the former being influenced by the latter. It is also important to note that households should have sufficient income or consumption to put them above some adequate minimum threshold. This is referred to as the poverty datum line.

According to the World Bank (2017), globally, the majority of those that live in poverty are based in rural areas, have low levels of education, work in the agricultural sector and are below the age of 18.

2.3.2 Determining the quality of life of waste pickers

According to Rahman, Siwar and Begum (2017), the informal recycling sector has a positive impact on the national economy as creates job and encourages the establishment of small business

initiatives. Mismanagement of waste in big cities poses health risks and has adverse economic and environmental consequences (Rahman et al., 2017). Rahman et al. (2017) suggest that educating waste pickers will improve their wellbeing as well as that of the environment and encourage them to form cooperatives and associations that empower them. The authors add that well organized and state-assisted waste picking activities can be a viable alternative for poverty alleviation within the urban population. As poverty eradication is one of the goals of governments in developing countries, it is incumbent on them to establish programs to empower informal waste pickers. Chikarmane (2012) notes that poverty and inequality are the primary factors that cause people to resort to waste picking. Chakarmane (2012) adds that no-one should have to go through other people's waste to survive and notes that waste pickers are often treated badly because of the stigma attached to their work. It is for this reason that the waste pickers of Pune in India organized themselves and marched for their rights and to be treated fairly (Chikarmane 2012). Furthermore, Chikarmane (2012) notes that waste pickers perform an important service as they recover recyclable material, reduce municipal solid waste handling costs, generate employment, contribute to public health and help to protect the environment.

In developed countries that have enough resources to manage waste, scavenging is forbidden (Afon, 2012). In contrast, many developing countries lack sound solid waste management systems. In such situations, informal waste management should be integrated with formal waste management for economic, social and environmental effectiveness (Afon, 2012). According to Afon (2012), scavenging enables useful material to be retrieved from solid waste and be recycled and reused. As populations grow rapidly and economies develop, the volume of waste generated also increases, raising management and environmental issues (Yang, Ma, Thompson and Flower, 2017). When the formal sector fails, the informal sector steps in. However, Yang et al. (2017) argue that the recycling methods employed cause environmental pollution and health problems.

Yigit (2015) notes that waste pickers benefit themselves, their communities and local government. Nonetheless, Ma, Thompson and Flower (2017:17) note that, "in many countries the informal sector is regarded as undesirable and often a nuisance despite the services it provides". Viljoen, Blaaw and Schenck (2016) observe that joblessness, and a lack of relevant skills and knowledge drive people into the informal economy. Furthermore, there are no barriers to entry to this sector as it is unregulated and untaxed (Viljoen et al., 2016). However, street waste pickers do not make

enough to sustain themselves and are hence stuck in chronic poverty. Schenck and Blaauw (2011) note that, they do not earn enough to send remittances home., Waste pickers' income is determined by the hours they spend at work and the quantity of the recyclable material they recover (Viljoen et al., 2016). Viljoen et al. (2016) suggest that local government, which is closest to the people, should organise places where street waste pickers can conduct their business.

Even though street waste pickers play an important role in reducing waste in the landfills, they often suffer victimization (Peres, 2016) due to their outward appearance. Waste pickers are often marginalized and looked down upon (Viljoen, 2014; Medina, 2008; Sarkar, 2003). One could argue that poverty is not only about money but being excluded or isolated from society. However, they themselves point out that they are not involved in criminal activities (Peres, 2016: vii). In South Africa, perceptions of waste pickers are often based on assumptions and exaggerations and vary from place to place (Peres, 2016). In Cape Town, it has been suggested that collaboration between informal and formal waste management through public-private partnerships would go a long way in addressing this situation (see Hachimoto and Sathe, 2015)

Medina (2008) suggests that formalisation spearheaded by the government could empower waste pickers, create job opportunities, reduce poverty, save municipalities money, improve industrial competitiveness, conserve natural resources and protect the environment. The author notes that, "three models have been used to organize waste pickers: microenterprises, cooperatives, and public-private partnerships (the integration of public and private sectors). These three models when well managed can lead to more efficient recycling and be more effective on poverty reduction" (Medina, 2008:1).

Schenck and Blaauw (2011) assert that waste picking should be considered as a public activity and that the state, NGOs and recyclers should collaborate.

Since Zimbabwe gained independence, the town of Victoria Falls has witnessed significant population growth due to migration from rural areas (Mhosisi 2006). Zimbabwe's formal economy is smaller than its informal sector. Furthermore, migrants are not able to find jobs in the formal sector as they do not have the requisite skills. The economic meltdown in the country has exacerbated this situation. Mhosisi (2006) notes that waste harvesting is a significant survival strategy in Victoria Falls. The factors that push people into this activity include the high unemployment rate and the fact that there is high demand for recyclables that are cheaper than the

goods sold in shops. Many urban populations have managed to survive the difficult economic environment in Zimbabwe through waste harvesting and are able to buy school uniforms for their children and improve their living conditions (Mhosisi, 2006).

Although many believe that the rising number of waste pickers worldwide is a sign of increased poverty, Madsen (2005) states that their positive contribution to economic growth and environmental sustainability has not been recognised. Sarkar (2003) notes that, regardless of government programs, projects and policies that aim to alleviate poverty in developing countries, the number of jobless continues to escalate. Indeed, one might argue that unemployment and poverty will always be a problem in such countries. Hence, many of the jobless turn to unregistered businesses for survival, with waste picking being one of them (Sarkar, 2003). However, as Sarkar (2003) asserts, waste pickers might manage to survive, but their working conditions are extremely inhumane: “waste pickers receive extremely low economic returns and are victims of harassment from the police, municipal workers and the general population” (Sankar, 2003: 17). Waste picking goes some way towards addressing climate change, with positive impacts on environmental sustainability (Forrest and Tuwizana, 2012). Recycling prevents more trees being cut down to produce paper and cardboard, and reduces air pollution from burning waste. Given that sustainable development is of major concern, especially in developing countries, waste pickers’ positive role should be recognised by government and other stakeholders.

This calls for waste pickers’ grievances to be addressed and for their business to be formalised so that they work under conducive conditions (Chengappa, 2013). In Bengaluru in India, different organizations lobbied for better treatment of waste pickers (Chingappa 2013). They were then able to go about their business without hindrance.

Countries like Brazil and India have adopted policies to accommodate waste pickers and cooperatives, while in Sudan, waste pickers are not yet registered and remain on the margins of society. Michael’s (2013) report for the United Nations Environment Programme notes that as a result of not being formally recognized, waste pickers are victims of public abuse. Some countries are turning rubbish into riches. For example, in Nakuru, Kenya, the majority of the urban population earns an income through waste picking (Njoroge, Wokabi, Ngetich and Kathuri, 2018). However, Njoroge et al. (2018) add that they work under harsh conditions and often suffer injuries.

They thus propose an inclusive approach that considers waste pickers as stakeholders in municipal waste management.

While scavenging is considered as taboo and is illegal in some countries, Aljaradin, Persson and Sood (2015) note that it has been recognized as a useful activity in Jordan that contributes to waste reduction and material recovery and has reduced the cost of formal waste management as the volume of waste has decreased. Aljaradin et al. (2015) add that, while more people are attracted to this activity, scavengers are often ignored by the authorities and are also exposed to health hazards. The authors thus argue for informal waste picking to be integrated with the formal waste sector.

In summary, there is consensus in the literature that joblessness, inequality, poverty, unemployment and economic instability push people into informal waste picking, especially in developing countries. However, they often earn very little and are exposed to health hazards.

2.3.3 Assessing waste pickers' awareness of risks associated with informal waste picking

The impact of waste picking on health does not only concern the individual, but the community at large. Households, complexes, industries and hospitals dispose of different things like soiled disposable baby napkins, dirty sanitary towels and syringes. Waste pickers are often seen searching bins with their bare hands and stand barefoot on heaps of waste (Sarkar, 2003). They risk being cut by broken glass and rusted metal and are exposed to infectious diseases.

Cardozo and Moreira (2015; 3) note that the hazardous conditions in which waste pickers work are often the result of poor planning and mismanagement of waste disposal. Waste pickers are exposed to worms, intestinal infections, influenza, leptospirosis, dengue, meningitis, headache, fever, allergy, malaise, loss of appetite, nausea and vomiting (Cardozo and Moreira 2015). Afron's (2012) study in Olusosun, Nigeria, found that waste pickers suffered from insect bites, malaria, wounds from sharp objects, and burns from hot ashes as well as falling from moving vehicles. The environmental degradation caused by poor waste management that leads to climate change also has deleterious effects in human health (Parveen and Faisal, 2006). In Brazil an abundance of waste is generated that contains hazardous toxic elements. Gutberlet and Uddin (2017) note that, many waste pickers lack knowledge on how to handle waste, with women, children and the elderly the most vulnerable to health hazards. It is thus critical that they receive training on personal hygiene and how to protect themselves from the risks associated with their occupation (Rahman, Siwar and Begum, 2017). Yang et al. (2017) argue that poor regulation of recycling activities or

lack thereof and the use of primitive recycling methods cause environmental and health hazards, with wider socioeconomic and environmental consequences.

Waste pickers' jobs also involve physical strain as they have to bending, carry and push heavy loads (Suliman, 2011). This could have long-term health implications. Michael (2013) notes that they are exposed to smoke, toxins and chemicals and also run the risk of contracting HIV. Some waste pickers have been killed at landfills by moving vehicles. They also suffer abuse from municipal workers and members of the public. For example, Suliman (2011) notes that waste pickers in Johannesburg are sworn at and verbally abused by the drivers of municipal rubbish trucks for getting in their way. In conflict-ridden countries like Sudan, waste pickers are at risk of picking up explosives (Michael 2013). Gutberlet and Uddin (2017) observe that, when left unattended and not well managed, waste poses risks to all living organisms.

2.4 Conclusion

This chapter discussed the two contemporary theories that underpinned this study, namely, the economic, political and social distortions theory and the geographical disparity theory. It also presented a comprehensive literature review. There is consensus in the literature that joblessness, inequality, poverty, unemployment and economic instability push people into informal waste picking, especially in developing countries. While waste pickers contribute to economic development and environmental sustainability, they generally earn very little and are exposed to health hazards. The literature thus notes the need for governments to regulate and support informal waste picking activities and for them to be integrated with the formal waste management sector. The literature review also revealed that there is a paucity of research on waste picking in South Africa. The current study aimed to contribute to filling this gap.

The following chapter outlines the methodology used in this study.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter presents the methodology employed to conduct this study. It discusses the research design, research paradigm, the study population, the sampling technique and the sample size. The research instrument, data analysis, data validity and reliability and the ethical considerations taken into account are also highlighted.

3.2 Research design

The research design is the plan or approach the researcher adopts to obtain the information required to investigate the phenomenon under study. This study adopted a quantitative approach in the form of a survey. A quantitative approach measures variable and generalizes the results to the entire population.

3.2 Research paradigm

The quantitative research approach falls within the positivist paradigm (Creswell, 2013). Creswell states that it involves correlation analysis and descriptive and inferential statistical analysis. This approach is less subjective than a qualitative approach. A quantitative approach was used in related studies such as Akinbola, Ojo and Hakeen (2015), Kareem (2015) and Rigasa, Badamasi and Galadimawa (2016). However, Rigasa et al. used a mixed methods approach that included the use of questionnaires and interviews. Creswell (2013) adds that a quantitative approach enables the researcher to determine dependent and independent variables. Frequency distributions, chi-square and cross-tabulations can be used in a quantitative study (Alversia, 2011).

3.3 Study population

The study population consisted of waste pickers of three locations, which are Mayville, Cato manor and Westville in Durban. The recyclable materials consists of cardboard paper, metal (steel, copper and aluminium) and plastic. Waste pickers are found on the streets of Durban, primarily scavenging in the bins of complexes where multiple bins are found. This study focused solely on solid cardboard waste pickers.

Sampling technique and sample size

Simple random sampling was used to select the sample. As noted previously, waste pickers are usually found within the vicinity of complexes in Durban. Waste pickers in Mayville, Westville and Cato Manor were selected. The researcher lives in the same area and these suburbs were hence convenient for research purposes. One hundred and twenty waste pickers were targeted; however, 81 waste pickers were surveyed by means of a questionnaire. These waste pickers are often seen along the road with their wares where middlemen come in their trucks to buy. Care and diligence were taken when approaching them to avoid conflict and unnecessary exposure to potential areas of crime.

3.4 Research instrument

A survey questionnaire was used to collect data from the participants. A survey is a quantitative data collection instrument that enables the researcher to gather data for correlation analysis and descriptive statistics (Rigasa, Badamasi and Galadimawa, 2016). The first section gathered biographical information to establish the participants' background. The second section was structured into five themes informed by the research objectives. Closed-ended questions were posed.

3.5 Data analysis

The questionnaires were coded and captured onto an excel spreadsheet. Each questionnaire was given a number and captured accordingly. Coding was done using the Likert scale of 1-5 where necessary. Once the data was captured on excel, it was exported to SPSS version 25 for analysis. The analysis included the use of descriptive statistics such as mean, mode, and frequency and inferential statistics such as standard deviation. The statistical significance of the correlations as depicted by cross-tabulations was also taken into consideration in discussing the data and findings. Such analysis is supported by studies such as Akinbola, Ojo and Hakeen (2015) and Kareem (2015) which used correlations and descriptive statistics in their analysis.

3.6 Data validity

Data validity was confirmed using the Cronbach's alpha. The value of the Cronbach Alpha was 0.78.

Reliability Statistics

Cronbach's Alpha	N of Items
,78	14

3.7 Data reliability

A pilot study was conducted with five participants and preliminary analysis was done to check for errors and inconsistencies in the instrument.

3.8 Ethical considerations

3.8.1 Informed consent

Participants were informed that their involvement in the study was voluntarily and that they were free to withdraw at any time.

The informed consent document was given to participants and further explanation was provided for those that did not understand its contents. The consent form was also translated into isiZulu for those that do not speak English. The isiZulu and English versions of the informed consent form are attached in the appendices.

3.8.2 Gatekeeper's permission and ethical clearance

Permission to conduct the study was obtained from the relevant gatekeeper, the local councillor. Ethical clearance was applied for and was granted by the University of KwaZulu-Natal.

3.8.3 Confidentiality

The information given by participants was treated as confidential and was not divulged to other people. Care was taken to avoid questions that might cause discomfort. The respondents were assured that no information would be given to third parties without their consent.

3.8.4 Transparency

The aim and objectives of the study were clearly explained to the participants and it was made clear that there were no hidden agendas.

3.8.5 The rights of participants

The participants were not judged, but respected and treated with dignity and their right to withdrawal from the study at any time was upheld.

3.9 Limitations of the study

While the targeted sample size was 120, the researcher managed to obtain only 81 respondents.

The participants expected that they would receive some financial reward and were disappointed to learn that the study was for purely academic purposes.

3.10 Conclusion

This chapter presented the methodology employed to conduct this study. It discussed the research design, the research paradigm, the study population, the sampling technique and the sample size, and the research instrument used to gather the data. Data analysis, and validity and reliability were also discussed. Finally, the chapter highlighted the ethical considerations taken into account as well as the study's limitations.

The following chapter presents, analyses and interprets the study's findings.

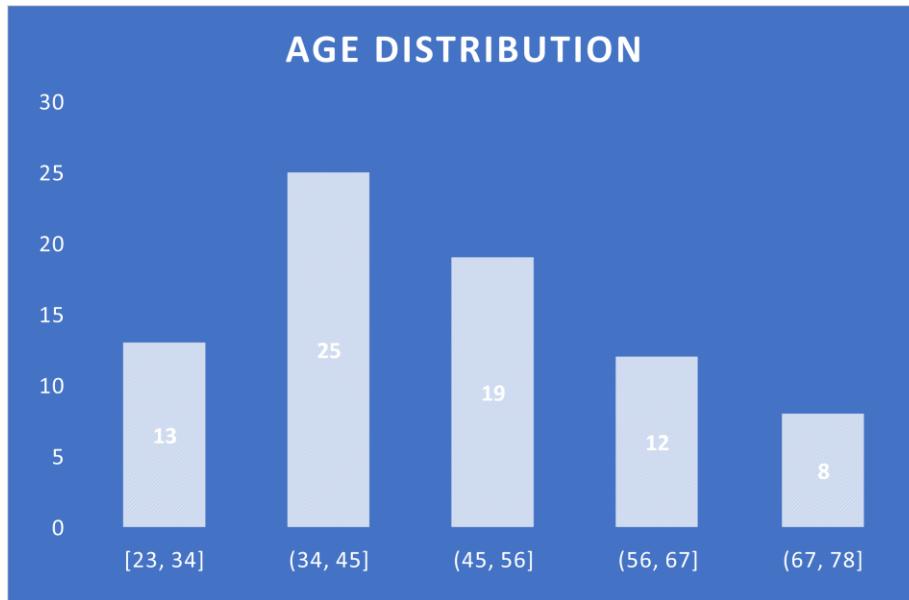
CHAPTER 4: PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

4.1 Introduction

This chapter presents, analyses and interprets the findings on the health and socio-economic status of waste picking activities in Mayville, Cato Manor and Westville. The findings are based on the respondents' perceptions.

4.2 Biographical Information

4.2.1 Age distribution of study respondents



The findings revealed that the respondents' age ranged between 23 and 74, with an average of 47 and standard deviation of 13.878. The fact that the researcher encountered a waste picker aged 74 reflects the levels of poverty in South Africa as in other countries, this person would receive a state or private pension depending on their circumstances. The finding that young people are also engaged in waste picking reflects the wider problem of a lack of education and skills and the high

unemployment rate among South Africa's youth. Statistics show that 38.4% of the youth in the country survive on less than the median 50% income threshold (Stats SA (2017)).

4.2.2 Gender

Sixty-five per cent of the waste pickers that participated in the study are female and 35% male. Some of the respondents stated that they are widows and have no other means of survival. This finding is in line with Yang et al.'s (2017) observation that, while male waste pickers are often more visible, the majority of waste pickers are women. Madsen (2005) notes that it is important to investigate the role that gender plays in development. As women are among the most vulnerable groups in society due to gender inequality, ways need to be found to empower them in the waste picking business.

4.2.3 Marital status of the respondents

Thirty-two per cent of the respondents were single, 13% were married, 6% were divorced, 38% had never married and 11% were widowed, with an average of 2.83 and standard deviation of 1.489. Thus, the majority of the respondents had never married and were single. Some stated that they had no partners and confronted many challenges as single parents; they added that waste picking is better than prostitution.

4.3 Quality of life

The quality of life of waste pickers was measured in terms of their economic status, taking into consideration unemployment, their income per week, the type of settlement they live in, access to running water and the social dynamics of waste pickers.

The study found that, at 74%, unemployment was the leading factor that pushed the respondents into waste picking. Four per cent cited retrenchment and 11% pointed to poverty, while 2% said that waste picking is a business for them. Nine per cent said there had no other option other than waste picking. This concurs with Medina (2008) and Viljoen et al.'s observation that poverty in developing countries pushes people into waste picking, with a source of income as the pull factor.

Mhosisi (2006) also noted that more people are employed in the informal sector than in the formal sector in these economies. The findings indicated that waste picking is the sole source of income for 60% of the respondents. Mhosisi (2006) also noted that many urban dwellers rely on waste picking to survive. Various social grants are available from the government in South Africa and the proportion of households receiving grants increased from 23.5% in 1993 to 68% in 2014 to reach 11 million (Stats South Africa 2017). However, most of the respondents indicated that they are not eligible for grants as they lack identity documents.

The study found that 70% of the respondents work on their own. Yang et al. (2017) also noted that waste pickers generally work alone or with partners, although some have formed cooperatives in order to pool their resources. While a few of the respondents stated that they work with family or friends, conflict is a feature of this business as people compete for waste material. Furthermore, people might work alone because they are migrants that do not live with their families. Rifat et al. (2016) note that migration is another factor that pushes people into waste picking as migrants generally do not find jobs in the formal sector. Furthermore, those that lack documentation may have no option but to resort to waste picking in order to survive.

4.4 Income per week

Household income should be above the minimum threshold of the poverty datum line. The study found that the respondents' income ranged from R250 to R2 000 per week, with an average of R670.25 and standard deviation of 314.455. Schenck (2017) found that waste pickers earn between R290 and R770 per week; less than that reported by the respondents in the current study.

4.5 Type of settlement

The study revealed that 55% of the respondents were shack dwellers (umkhukhu), while 14% stayed in flats and 32% in Reconstruction and Development Programme (RDP) houses, with standard deviation of 0.650. This suggests that their basic needs are not being met. Chapter 2, section 27(1) of the Constitution of the Republic of South Africa states that every citizen has the right to basic services. Madsen (2006) noted that many waste pickers lack access to housing as well as land and water.

4.6 Access to running water

Fifty-six percent of the respondents strongly disagreed that they had access to running or tap water while 7% disagreed. Only 28% agreed that they enjoyed such access and 9% strongly agreed, with an average of 2.26% and standard deviation of 1.554. Thus, the majority of the respondents are not enjoying the rights conferred on them by the Constitution.

Given the lack of running water, 16% of the respondents agreed and 54% strongly agreed that they use water from a nearby river to process their recyclable material. Twenty-three per cent strongly disagreed with this statement, 6% disagreed and 1% remained neutral.

Waste pickers use water to add weight to their material. Twenty per cent of the respondents strongly disagreed that they engaged in this practice, while 1% disagreed, 23% agreed and 55% strongly agreed that they add water to increase weight.

Table 1: Access to running water

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD
I have access to running water/ tap water	56	7	0	28	9	2.26	1.554
I often use water from the river to process the recycled material	23	6	1	16	54	3.73	1.669
I always use water to add moisture and weight to my material	21	1	0	23	55	3.9	1.574

4.7 Children's school attendance

Sixty per cent of the respondents had school-going children and 40% reported that their children did not attend school. The high proportion of children not in school is cause for concern. As noted by other scholars, children also engage in waste picking (Viljoen et al., 2015).

4.2.4 Place of residence

Of the three study locations, 70% of the respondents' resided in Mayville, 15% in Cato Manor and 16% in Westville. The first two areas are home to mainly poor people, while Westville is a low- and middle-class area.

Half (50%) of the respondents strongly agreed that their material had been stolen on previous occasions, while 5% agreed, 34% strongly disagreed and 1% disagreed with this statement. The average is 3.45% and standard deviation is 1.834. Rifat (2016) noted that, due to the lack of storage facilities, waste pickers often sell their wares on a daily basis to avoid theft.

Furthermore, 80% of the respondents strongly agreed that they had been involved in conflict over recyclable material, while 5% agreed, 12% strongly disagreed and 1% disagreed with this statement and 1% remaining neutral, with an average of 4.4% and standard deviation of 1.350.

Ninety-three per cent of the respondents strongly agreed that they need an organized shelter to sell their materials, 5% agreed and only 2% strongly disagreed. Integrating informal recycling into the formal waste management system would assist in addressing this need (Wilson et al., 2006; Yang et al., 2017).

Table 2: Social dynamics of waste picking

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD
Some of my materials have been stolen before	34	1	0	5	50	3.45	1.834

We usually fight over waste material	12	1	1	5	80	4.4	1.350
I feel we need an organized shelter to sell our materials	2	0	0	5	93	4.85	1.650

The majority (70%) of the respondents agreed that there is intense competition for recyclable material around the neighbourhood, and 30% disagreed, with an average of 4.71 and standard deviation of 0.458. Such competition causes the conflict discussed above. Finally, 88% of the respondents were of the view that they do not receive a fair price for their wares, with an average of 1.45 and standard deviation of 0.877.

Ninety-seven per cent of the respondents agreed that establishing cooperatives would benefit them as they would represent them and fight for their rights. The average was 4.57 and standard deviation was .738. This is one of the models proposed by Median (2008) to organise waste pickers. Rigasa et al. (2016) also concluded that forming cooperatives could empower waste pickers and improve their income. Binion and Gutberlet (2012) note that establishing cooperatives has enabled recyclers to legalize and formalize their employment, participate in decision making and assert their rights (Binion and Gutberlet, 2012). It also gives them access to legal protection and health care. However, 70% of the respondents in the current study stated that they did not belong to any organisation, with an average of 1.4% and standard deviation of 0.735.

National waste pickers' movements have been established in Kenya and South Africa and cooperatives have been formed and have contracted with municipalities to perform aspects of solid waste management. In some cases, community-based approaches to solid waste management have been developed (Rigasa, Badamasi, Galadimawa and Abubakar, 2016). However, the respondents were not aware of such cooperatives in Durban.

4.8 Places where waste pickers sell their wares

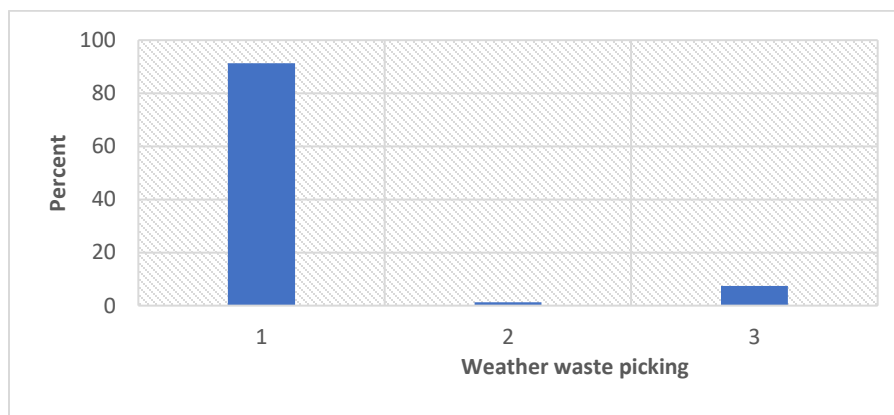
Seventy-five per cent of respondents indicated that they sell their material on the roadside, where middlemen come with trucks to buy recyclable material. This points to the lack of an organized

market place due to the informality of waste picking. This finding is in line with that of Downs and Medina (2000) that waste picking is a highly informal business.

4.9 Effects of weather on waste picking activities

Ninety-two percent of the respondents agreed that business is very slow during the rainy season as they have no secure place to work and store their wares. There is no shelter on the roads, dump sites and landfills. Only 2% of the respondents disagreed with this statement and 7% indicated that business is normal during the rainy season.

Figure 1: Weather and waste picking



4.10 Correlation between age and income

4.10.1 Age and income generated by waste pickers

The waste pickers' age and their income per week are positively related, albeit at a very low correlation co-efficient of 0.081. This relationship is, however, statistically insignificant with a p-value of 0.488. It can thus be concluded that age does not influence waste pickers' earnings.

Blauuw et al. (2015) and Viljoen (2016) conclude that waste pickers determine their own income, as the more hours and effort they put in, the more they earn.

		Age	Income
Age	Pearson Correlation	1	.081
	Sig. (2-tailed)		.488
	N	77	75
Income per week	Pearson Correlation	.081	1
	Sig. (2-tailed)	.488	
	N	75	79

4.10.2 Gender and waste pickers with school-going children

Eighty per cent of the respondents that lived with school-going children were female, with males at 20%. The relationship between gender and the waste pickers that stay with school-going children is statically significant with a Chi-Square of 0.005. Women are primarily responsible for taking care of children, especially in African contexts. This confirms Mhosi's (2006) finding that waste pickers use their income to support their school-going children. It points to the female waste pickers' sense of responsibility and the need for programs to empower them.

Table 3 : Gender and waste pickers with school-going children

		Children attending school		Total
		Yes	No	
Gender	Male	20	17	26
	Female	80	17	53
Total		100	34	79
		Value	Df	Asymptotic significance (2sided)
Pearson Chi-Square		7.894	1	0.005

4.10.3 Gender and type of settlement

Seventy-three per cent of the respondents that lived in flats were male and 27% were female. In contrast, 70% of the respondents that reported that they stayed in a shack were female and 30% were male. The relationship between gender and type of settlement is statistically significant with a Chi-Square of 0.016. This suggests that male waste pickers are more likely than their female counterparts to live in formal settlements.

Table 4: Gender and type of dwelling

		Type of settlement			Total
		Flat	Shack	RDP	
Gender	Male	73	30	27	35
	Female	27	70	43	65
Total		100	44	26	81
		Value	Df	Asymptotic significance (2sided)	
Pearson Chi-Square		8.244	2	0.016	

4.10.4 Gender and sources of income

The study found that 42.2% of the male respondents had no source of income other than that earned from waste picking, while 55% of the female respondents received government grants. According to Hundenborn, Leibrandt and Woolard (2016), social grants accounted for 4.6% of household income in 1993 compared to 6.1% in 2014. Hence, there is a relationship between gender and the source of income with a Chi-Square of 0.003. Some of the male respondents stated that it is embarrassing to be seen standing in a queue to apply for or receive a grant.

Table 5: Gender and sources of income

		Other sources of income				Total
		None	Grant	Pension	Maintenance	
Gender	Male	45	5	53	0	28
	Female	55	95	47	1	52
Total		100	100	100	1	80
		Value	Df	Asymptotic significance (2sided)		
Chi-Square		13.659	3	0.003		

4.10.5 Gender and competition for recyclable material

Both the male and female respondents overwhelmingly agreed that there is strong competition for recyclable material in their neighbourhood. However, the relationship is statistically insignificant with a Chi-Square of 0.114.

As noted earlier, competition results in conflict. The findings showed that female waste pickers were more likely to be involved in such conflict. However, the relationship is statistically insignificant with a Chi-Square of 0.292. This means gender does not determine who fights over waste material. Sixty-one per cent of the respondents that indicated that they prefer to work alone were female and 39% were male. However, the relationship is statistically insignificant with a Chi Square of 0.682. Nonetheless, it confirms that there is strong competition and that more women prefer to work alone.

Table 6: Gender and competition for material

		Competition for recyclable material		Total
		Agree	Strongly Agree	
Gender	Male	48	17	28
	Female	52	41	53

Total	100	58	81
	Value	Df	Asymptotic significance (2sided)
Pearson Chi-Square	13.053	3	0.005

4.10.6 Gender and the effects of weather patterns

Sixty-six percent of the respondents that agreed that business is slow during the rainy season were women and 34% were male. This could be due to the fact that fewer men than women participated in the study. The relationship between gender and how rain affects business is statistically insignificant with a Chi-Square of 0.772.

Table 7: Gender and weather patterns

		Rainy season			Total
		Low	High	Normal	
Gender	Male	34	0	2	27
	Female	66	1	4	53
Total		100	1	6	80
		Value	Df	Asymptotic significance (2sided)	
Pearson Chi-Square		0.518	2	0.772	

4.10.7 Awareness of the risks of waste picking activities and measures adopted by waste pickers to protect their health

The study found that 46% of the participants strongly disagreed that they were aware of the health implications of waste picking activities, while 5% disagreed, 9% were neutral, 20% agreed and 16% strongly agreed that they were aware of the health implications associated with this business, at an average of 2.64 and standard deviation of 1.690. The fact that a sizeable proportion of the respondents was not aware of the hazards associated with waste picking concurs with Gutbelert and Uddin (2017) who asserted that most waste pickers lack adequate knowledge when it comes to handling waste.

Furthermore, 50% of the respondents strongly disagreed that they had previously contracted diseases as a result of waste picking activities and 5% disagreed. None of the respondents remained neutral on this issue and 4% agreed and 40% strongly agreed that they had previously contracted diseases as a result of this activity. The mean was 2.82 and standard deviation was 1.938. Cardozo and Moreira (2015) noted that waste picking exposes pickers to diseases, insect bites and worms.

When it comes to the use of protective equipment, only 14% of the respondents strongly disagreed that they use protective equipment when collecting recyclable material, with 5% remaining neutral, 35% agreeing and 46% strongly agreeing, and an average of 4.01 and standard deviation of 1.938. Most stated that they use plastic to protect themselves and mud to prevent sunburn.

Finally, 10% of the respondents strongly disagreed that, after selecting the material they use, they put the excess back in the bins, while 10% disagreed, 4% agreed and 66% strongly agreed with this statement. The average was 4.16 and standard deviation was 1.400. Putting rubbish back in the bins sustains the environment. Yang et al. (2016) argue that informal recycling often leads to environmental and health problems. However, emerging evidence shows that this is not always the case as waste pickers' impact positively on the organisation of waste.

Table 8: Health aspects of waste picking

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD
I am aware of the health hazard of waste activities	46	5	9	20	16	2.64	1.690
I have previously contracted a disease due to waste picking activities.	50	5	0	4	40	2.82	1.938
I usually wear protective clothing for example gloves when picking waste	14	0	5	35	46	4.01	1.319
I put back excess waste into the bin after selecting what I need	10	10	0	4	66	4.16	1.400

4.10.8 Gender and awareness of health hazards

Both female and male respondents indicated that they were aware of the health hazards associated with waste picking. Of those that concurred with this statement, 49% were male and 51% female. However, the relationship between gender and health hazard awareness is statistically insignificant with a Chi-Square value 0.197. Given that waste pickers' level of education is generally low, lack of knowledge of health hazards is not surprising. Awareness campaigns are thus required to educate them. Gutberlet and Uddin (2017) observe that insufficient awareness of the risks involved in handling waste constitutes a health hazard.

Table 9: Gender and awareness of health hazards

		Health hazard					Total
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Gender	Male	49	25	29	21	15	27
	Female	51	75	57	79	85	53
Total		100	4	7	19	13	80
		Value	Df	Asymptotic significance (2sided)			
Pearson Chi-Square		7.340	5	0.197			

4.11 Conclusion

This chapter presented, analysed and interpreted the study's findings in order to answer the research questions on the quality of life of waste pickers, the extent to which waste pickers are aware of the risks of their work and whether they adopt measures to protect their health.

The following chapter presents the study's conclusions and recommendations.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents an overall conclusion to the study that examines how its objectives were achieved. It also offers the researcher's recommendations based on the findings.

5.2 Conclusions

The main aim of the study was to unpack health and socio-economic status of waste pickers in Mayville, Cato Manor and Westville in Durban. The study was founded on three objectives of which these were to analyse the quality of life of waste pickers in terms of their economic and social status; assess waste pickers' awareness of the risks associated with this kind of work as far as their health is concerned; and to establish the extent of their uptake of protective measures.

In terms of the first objective, it was found that unemployment is the primary factor that pushed the respondents into waste picking. Waste pickers were found to fully depend on this activity as far as their employment is concerned. As 74% of waste pickers were unemployed and earned their income through waste picking. In a week it was found that waste pickers earn between R20 to R2000 at an average of R670.25. However, their average income is low and for many, waste picking is their only source of income. It was also found that most of the respondents lived in shacks. Many did not have access to running/tap water and used water from a nearby river to process their material.

In terms of social dynamics, it was found that there is strong competition for waste material and that this often results in conflict and a preference for working solo. Forming cooperatives could address these challenges. The study found that most of the waste pickers sold their material on the roadside to middlemen and that business is very slow during the rainy season.

The second objective was to assess waste pickers' awareness of the risks of this kind of work. It was found that most of the respondents were not aware of the health hazards attached to waste picking, of which 46% indicated being unaware of the risks of this kind of activity.

The last objective was to determine the extent to which waste pickers adopt measures to protect their health. It was found that some of the respondent use mud to protect them from sunburn and

some use plastic found when sifting through bins as protective clothing. Hence this is as a result of unavailability of protective measures for waste pickers. When it comes to the use of protective equipment, only 14% of the respondents strongly disagreed that they use protective equipment when collecting recyclable material, with 5% remaining neutral, 35% agreeing and 46% strongly agreeing, and an average of 4.01 and standard deviation of 1.938. Most stated that they use plastic to protect themselves and mud to prevent sunburn

5.3 Recommendations

The following recommendations are based on the study's findings:

- **Economic development**

Economic development is required to address the issue of unemployment that drives people to engage in informal waste picking. Furthermore, the state should provide free vocational training, especially for young people.

- **Improved service delivery**

Given that most of the respondents revealed that they have no access to clean water and reside in informal settlements, there is a need for the government to speed up service delivery.

- **Market places, shelter and access to water**

It is recommended that a marketplace be established for waste pickers with shelters and secure storage facilities as well as access to water.

- **Awareness programs**

Awareness programs should be launched to educate waste pickers on small informal businesses, and the risks associated with this business as well as measures to protect their health.

- **Cooperatives**

Cooperatives should be established as working as a team will empower waste pickers, enable their voices to be heard and give them a sense of belonging.

- **Further studies**

Given that there is a paucity of research in this area, further studies are recommended. Qualitative studies would add insight to the findings of this quantitative study.

5.4 Conclusion

This chapter presented an overall conclusion to this study based on its objectives, as well as recommendations and suggestions for future studies.

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APPENDICES

English questionnaire

- In this study we want to analyse the socioeconomic and Health of waste pickers in poverty alleviation in Durban.
- If you agree to participate, a time will be scheduled for completion of the questionnaire that is expected to take not more than 1 hour to complete.
- There are no material risks posed by participating. Your identity will be kept confidential. No personal information will be collected from you. There are also no right or wrong responses- this research is only interested in your own experiences and impressions.
- Your questionnaire responses will be on file by the researcher but your identity and that of the employer and/or clients will be kept confidential and will not be referred to directly in the final research report.
- You will not receive any compensation for participating in the research.
- Should you be interested, a copy of the final report will be available to you on request.

If you decide to take part, you are still free to withdraw at any time and without giving reason. In addition to withdrawing yourself from the study, you may also withdraw any data/ information you have already provided up until is transcribed for use in the final report.

If this study has harmed or offended, you in any way you can contact the University of KwaZulu- Natal using the details below for further advice and information.

Details	Researcher 1	Researcher 2
Name	Phathiwe Sibanda	
Contact Number	0781681856	
Email Address	217080718@stu.ukzn.ac.z	

CONSENT FORM FOR PARTICIPANTS IN RESEARCH STUDIES

Please complete this form after you have read the Information Sheet and/or listened to an explanation about research.

Title of Study: Socioeconomic and Health analysis of waste picking activities in Durban

Ethics Committee Ref: _____ Pending _____

Details	Please tick or initial
---------	------------------------

I understand that if I decide at any time during the research I no longer wish to participate in this project, I can notify the researcher involved and withdraw from it immediately without giving any reason. Furthermore, I understand that I will be able to withdraw my data up to the point of submission of my response.	
I understand that the information I have submitted will be published in a Master's thesis and that I can request a copy of the final thesis.	
I understand that my personal information will not be collected. My identity and that of my employer and/or clients will be kept confidential and will not be referred to directly in the final report.	
I consent to my interview being used in the research final results.	

Participant's Statement:

I _____ agree that the research project named above has been explained to my satisfaction and I agree to take part in the study. I have read both the notes written above, about the project, and understand what the research study involves.

Signed _____ Date _____

Section A: General Information

1. Name (Optional):

2. Age:

3. Gender:

4. Marital Status:

Single	Married	divorced	never married	widowed
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5. Place of residence: Cator Manor Mayville Westville

6. Type of settlement: Flat Shack dweller RDP

7. Why are you involved in waste picking?

Unemployed	retrenched	Poverty	business	no other opportunity
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8. Other source of income:

None	Grant	Pension	Maintenance	Other
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9. I always work with:

Family	Friend	Alone	Other
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10. I sell my waste material:

Along the road	At home	Organized shelter	Other
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11. During rainy season business is usually:

Low	high	Normal
-----	------	--------

12. If staying with kids are, they attending school

Yes	Yes
-----	-----

13. On average how much do you earn per week-----

14. How many kgs do you make per week-----

Section B:

Instructions: You are required to respond to the statements below by ticking ("X") the most appropriate column in your view. The following rating scale is used to respond to the questions: **1- Strongly Disagree, 2- Disagree, 3- Neutral, 4- Agree, 5- Strongly Agree.**

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
15.	I am aware of the health hazard of waste activities					
16.	I have previously contracted a disease due to waste picking activities.					
17.	I usually wear protective clothing for example gloves when picking waste					
18.	I put back excess waste into the bin after selecting what I need					
19.	I have access to running water/ tape water					
20.	I often use water from the river to process the recycled material					
21.	I always use water to add moisture and weight to my material					
22.	Some of my material have been stolen before					

23.	We usually fight over waste material					
24.	I feel we need an organized shelter to sell our materials					
25.	The competition for waste material is usually high in my neighborhood					
26.	I feel my material is purchased at a fair value					
27.	I feel cooperatives will make our business more viable					
28.	I belong to a waste pickers movement					
29.	Do you feel you need a waste pickers movement?					
30.						
31.						

Ngokukhulu ukuzithoba ngicela ukubingelala

Uyamenywa ukuba ube ilunga lwalolu ncwaningo nzulu engizobe ngilenza. Ngaphambi kokuthi uvume ukuba ngomunye wabantu abazophosa isandla kukolu ncwaningo ,kuhle uqale uwazi kuthi lumayelama nani nanokuthi mengabe uba ngomunye wabancwaningwa yini ozoyizuza. Thatha isikhathi sakho ukuba ufunde lelipheshayana elichazayo ngalolu ncwaningo ,mengabe kukhona lapho ongezwa khona kahle ungakhuluma nabanye abantu kuba bekuchazisela kahle noma uze kumina ngikunikeze izichazelo ezifanele

- Kulolu ncwaningo sifuna ukuphenya kuthi abantu laba abathatha izinto ezinjengo shekhasi beziyise kwizimbona ezizovuselela lezo zinto kabusha mese siyakhona kusetshenziswa futhi kuthi basiza kanjani noma basizakala kanjani ekuthethi bexoshe isimo sokuhlupheka
- Mengabe uvuma ukuba ngomunye wabantu abazofaka isandla kulolu ncwaningo ,sizohlela isikhathi nabo bonke abantu abazoba ixhenye ukuthi nikwazi kuphendula nonke imibuzo kanye kanye, imibuzo uzothatha isigamu sehora noma ihora elilodwa.
- Akukho bungozi ngokuba ngomunye wabantu abazo phosa isandla kulolu ncwaningo, wonke umuntu uzohlonishwa. Yonke into ekhulunyiwe kulolu ncwaningo uzohlala phakathi ngomncwaningi nabancwaningwa, akuvumelekile ukuxoxela abanye abantu ngezinto ezezoba zenzeka ngesikhathi kuphendulwa imibuzo ozobe engalona ilunga labancwaningwa. Loluncwaningo lifuna kuthola kubantu abathatha izinto beziyise ezimbonini kuthi ngalokho baphatheka kanjani
- Izimpendulo zenu ,zizoba kwifayeli elizobe liphethe yonke into bayelana nalolu ncwaningo. Angeke adalulwe amagama enu ,yonke into izoncinwa iyimfihlo.
- Ngokuba ilunga lalolu ncwaningo akukho okuphathekayo enizokuthola ngaphandle kolwazi.
- Mengabe ufuna kufaka isandla kulolu ncwaningo ,ungacela iphepha eliphethe yonke imininingwano yoncwano.

Mengabe uvumile ukuba ilunga lalolu ncwaningo ,mengabe usuzizwa ungasathandi uvumelekile ukuphuma ,ngaphandle ngokuchazela umncwaningi isizathu sokuthi uphume. Mengabe uphuma uvumelekile ukusho kuthi izinto oziphendulile kulolu ncwaningo ukuthi zingasetshenziswa.

Mengabe kukhona okubi umncwaningi akwenzile kuwe njengo mncwaningwa unalo ilungele lokwazisa noma ukumceba kwaba mphethe. Iminingwana ingezansi yeNyuvesi ya-KwaZulu Natal okuyilapha akafunda khona.

<u>Imininingwane</u>	<u>Umncwaningi wokuqala</u>	<u>Umncwaningi wesibili</u>
Igama	Phathiwe Sibanda	
Inombolo yocingo	0781681856	
Imeyili	217080718@stu.ukzn.ac.z	

Ifomi lesivumelwana ukuba ilunga loncwaningo

Uyacelwa ukube uphendule imibuzo kuleli fomu, mengabe usulifundile ukuthi lidingani

Isihloko soncwaningo: ukubheka ukuthi labantu abathatha izinto beziyise kwizimboni ukuba ziyovuselewa kabusha ukuze zikwazi kusetshenziswa, kuba siza kanjani bona. Imvelo, umphathi kanye nokwenza imali ngakho kusizaphi, Loluncwaningo lizobe lenzelwa Kwekabhanana okuse Thekwini.

Irefirensi yenkomidi lwezo ncwaningog_____

Imininingwane	Bhala uthikhi mengabe uvuma

Ngiyezwa kuthi loluncwaningo lumayelanani,mengabe ngasathandi noma ngasafuni kuba kulolu ncwaningo ngizomazisa umncwaningi.Ngiyewisisa kuthi mengabe ngasafuni ukuba kulolu ncwaningo ngingakwazi ukusho kuthi izimpendulo zami zingasetshenziswa ,ngaphandle ngokusho ichazelo	
Ngeyezwa ukuthi izimpendulo zami zizobhala kulolu ncwaningo ,nokuthi ngingakwazi kucela ikhophi yoncwano lonke mengabe ngiyidinga .	
Ngiyakuzwa kuthi iminingwana yami enjenge gama nesibingo angeke idingeke .Lemboni engihambisa kuyona mengabe sengiqoqile izinto engeke lifuneke igama layo	
Ngiyavuma kuthi zonke izimpendulo zami zisetshenziswe kulolu ncwaningo.	

Isitatimende somncwaningwa:

Mina:_____ ngiyavuma kuthi ngithole zonke izichazelo ngalolu ncwaningo.

Isinginisha_____ Usuku_____

Imibuzo yokuqala

32. Igama:

33. Iminyaka:

34. Ubulili:

Owesilisa

Owesifazane

Awunamuntu	Ushadile	Udivosile	Awukaze ushade	Uwumfelwa noma Umfelokazi
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35. Iminingwane

5.indawo yokusebenza: Cator Manor

Mayville

Westville

6.Indawo yokuhlala:Ifulethi ,Umkhukhu noma Indlu kaHulumeni

7.Yin indaba uthathe lezi zinto eziyokwenziwa kabusha ukuze ziphinde zisebenze?

Awusebenzi	Uyazenzela nje imali	Ukuhlupheka	Uzenzela ibhizinisi	Awekho amanye amathuba omsebenzi
------------	-------------------------	-------------	------------------------	--

8.Izindlela ezinye zokwenza imali

Ayikho	Isibonelelo sikaHulumeni sezingane	Impesheni	Methenensi	Okunye
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9.Ngisebenza:

Nomndeni	Abangani	Ngedwa	Okunye
----------	----------	--------	--------

10.Ngiyazidayisa:

Emugwaqeni	Ekhaya	Nginendlu ethizeni	Okunye
------------	--------	-----------------------	--------

11.Mengabe linetha lihamba kanjani
ibhizinisi

Kancane	Kakhulu	Kahle nje
---------	---------	-----------

12.Udlala nezingane ,ziyafunda yini

Yebo	Chabo
------	-------

13.Wenza malini ngeviki-----

Imibuzo yesibili

Uyacelwa ukube ubhale u (“X”) kulokhu okuhambisana nawe.

1-Ngiyaphika kakhulu ,2-Ngiyaphika,3-Ngiphakathi nendawo,4 Ngiyavuma,5-Ngiyavuma kakhulu

		Ngiyaphika kakhulu	Ngiyaphika	Ngiphakathi Nendawo	Ngiyavuma	Ngiyavuma kakhulu
1	Ngiyazi ngobu ngozi bezinto ezilahliwe					
2	Ngake ngathola isifo noma izifo ngokubupha lezi zinto ezisuke sezitshingiwe					
3	Ngifaka izimpahla ezivikela kuthi ngingabi sengozini yokuthola gciwane					
4	Engakudingi ngikubuyesela ubhini					

5	Nginawo amazni ompompi noma awethanki					
6	Ngisebenzisa amanzi asemfuleni ukuwasha lezinto engisuke ngizozu dayisa					
7	Ngisebenzisa amanzi ukwenza izinto engizozidayisa zibuclini					
8	Bayangitshtshela ezinye izinto engisuke ngizozidayisa					
9	Nozakwethu esisebenza naye siyaye sibe nokuxabana ngezinto ezithile					
10	Ngibona ngathi siding indawo enhle kundayisa izinto zethu					
11	Sibaningi esidayisa lezinto esisuke sizithathe					

	kubhini ukuba zenziwe kabusha					
12	Ngicabanga kuthi ngidayisa ngemali efanele					
13	Ngicabanga kuthi ukubambisana nozakwethu kungenza ibhizinisi lethu lithuthuke					
14	Ngingomunye webutho labokuthatha kwenzinto ezisebenzile ukuba ngizidayise					
15	Ucabanga kuthi niyayidinga inhlangotho ezonimela					

UKZN HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE (HSSREC)

APPLICATION FOR ETHICS APPROVAL For research with human participants

b) INFORMED CONSENT RESOURCE TEMPLATE

Note to researchers: Notwithstanding the need for scientific and legal accuracy, every effort should be made to produce a consent document that is as linguistically clear and simple as possible, without omitting important details as outlined below. Certified translated versions will be required once the original version is approved.

There are specific circumstances where witnessed verbal consent might be acceptable, and circumstances where individual informed consent may be waived by HSSREC.

c) Information Sheet and Consent to Participate in Research

Date: 2018/11/15

Greeting: Greetings to you all (will ask about the weather to create a friendly environment, then introduce myself)

My name is Phathiwe Sibanda, from University of Kwa-Zulu Natal, college of Humanities Howard Campus. My Email address is 217080718@stu.ukzn.ac.za, phone number 0781681856.

You are being invited to consider participating in a study that involves research in Health and socio-economic analysis of waste picking activities in Durban. The aim and purpose of this study is to understand people's involvement in waste picking activities, their economic benefits, the risk associated with this kind of business (health wise). To understand how waste pickers can be empowered in dealing with the challenges they face in their working environment. The study is expected to enroll about One hundred and twenty participants, of which forty people will be randomly selected from each location and these locations are Mayville, Cato Manor and Westville. I will meet the waste pickers and make an appointment with them on a day convenient to them. The study is not funded by any organization.

There are no risks associated with this study. We hope that the study will empower the participants as I'm willing to present my findings to different stakeholders the local municipality and Non-Governmental Organizations with the aim of addressing the different challenges that the waste pickers might be facing. Hence this will benefit the participants. This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (approval number_____).

In the event of any problems or concerns/questions you may contact the researcher at 217080718@stu.ukzn.ac.za, 0781681856 or the UKZN Humanities & Social Sciences Research Ethics Committee, contact details as follows:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

- d) Research Office, Westville Campus
- e) Govan Mbeki Building
Private Bag X 54001
Durban
4000
KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604557- Fax: 27 31 2604609
Email: HSSREC@ukzn.ac.za

Participation in this study is voluntary, you can feel free to withdraw anytime you feel like no questions will be asked and there are no strings attached to the withdrawal. You will not lose anything if you decide to withdraw and no one will blackmail you. I would request the you notify me in advance when you feel like withdrawing so that I find replacement.

There are no financial benefits in being involved in the study, it is for academic purposes. Participation and information given will be treated with confidentiality, it will not be given or repeated to anyone, but will be kept privately, stored in USB and locked in a safe and the files will be kept at the University.

CONSENT (Edit as required)

I (Name) have been informed about the study entitled Health and Socio-economic analysis of waste picking activities in Durban, by Phathiwe Sibanda.

I understand the purpose and procedures of the study that it is for academic purposes.

I have been given an opportunity to answer questions about the study and have had answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any of the benefits that I usually am entitled to.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at 078 168 1856 or 217080718@stu.ukzn.ac.za.

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

- f) Research Office, Westville Campus
g) Govan Mbeki Building
Private Bag X 54001
Durban
4000
KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604557 - Fax: 27 31 2604609
Email: HSSREC@ukzn.ac.za

There will not be any audio or video recording

Signature of Participant

Date

Signature of Witness
(Where applicable)

Date

Signature of Translator
(Where applicable)

Date

UKZN HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE (HSSREC)

ISICELO SOKUGUNYAZWA UKWENZA UCWANINGO LOKUSEBENZISANA NABANTU

Chapter 1 ULWAZI NGEMVUMO

OKUZOSEBENZA NGEZIGABA

Bacwaningi: Kuyisidingo ukuthi konke kwenziwe ngobuchule noma ngokucophelela ngokomthetho, ukuthi konke okwenziwayo kube ulwazi olucacileyo ngokolimu olwaziwayo, futhi kungabi bikho ulwazi olubalulekile oluzokweqiwa kulokhu okungenzanzi. Ulwazi oluhunyushiwe luzodingeka emva kokuthi ulwazi lokuqala selugunyaziwe.

Ngezizathu ezithile ulwazi lungamukelwa ngokukhuluma kudingeke ukuthi kube nobufakazi noma ngezizathu ezithile Ulwazi ngemvumo yomuntu ngayedwa lungatshwe noma lususwe ikomide(HSSREC).

Ulwazi oluqukethwe ngokuzibophezela ukuba yingxenye yocwaningo

Usuku: 21 Ntulikazi 2018

Isibingelelo: Sawubona lunga lomphakathi

Igama lami ngingu Phathiwe wakwa Sibanda ngisuka kwisikole sezentuthuko eNyuvesi yaKwazulu Natali. inombolo yami yocingo ithi-0781681856 ikheli lami le-imeyili lith 217080718@stu.ukzn.ac.za

Uyamenywa ukuba ube ingxenye noma ukusebenzisana nathi kucwaningo mayelana nokucoshwa kwezinto ezingasetshenziswa besize izikampanini ziyokwenziwa kabusha, bona njengo mpakathi bazuza kanjani, kubathuthukisa kanjani kwezomnotho, nokwazi ngobungozi balomsebenzi abawenzayo kwezempilakahle.

Lesisifundo asinabo ubungozi futhi akukho lapho ozozizwa ungenakho ukukhululeka. Siyethemba lolucwaningo luzosisiza ukwazi kangcono ngabantu baseThekwini ukuthi benza njani ukuziphilisa. Okunye okumele ukwazi ngalolucwaningo akukho muhlomulo ngokusebenzisana nathi ngalesisifundo.

Lesisifundo sibhekiwe ngokwenkambo yobulungiswa sagunyazwa ikomide lesikhungo sasenyuvesithi UKZN Humanities and Social Sciences Research Ethics (inombolo yokugunyaza_____).

Lesisifundo sibhekiwe ikomide elimele ubulungiswa sagunyazwa isikhungo sesenyuvesithi yakwaZulu Natali(inombolo egunyazayo_____)

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

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Email: HSSREC@ukzn.ac.za

Uma kukhona izinkinga obhekana nazo noma kukhona imibuzo ungaxhumana nomcwaningi kwi-nombolo yocingo ethi 0781681856, ikheli lami le-imeyili lithi 217080718@stu.ukzn.ac.za ningaxhumana futhi nekomide elimele ubulungiswa lase UKZN Humanities & Social Sciences kulemininingwane elandelayo

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Chapter 4 Research Office, Westville Campus

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Durban

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Email: HSSREC@ukzn.ac.za

Ukuba ilunga lalolu ncwaningo awuphoqelekile, kumele kusuke othandweni lakho. Mengaba ungasafuni ukuba ilunga laloluncwaningo unalo ilungo lokuphuma angeke uvinjwe muntu. Akukho mhlomulo ozotholakala kodwa kuzobe ukusizana phakathi kokuthola ulwazi phakathi kuka mncwaningo nabancwaningwa. Amalunga alolu umncwaningo bazonikezwa kuthi bafunde benze isinqiniseko kuthi konke okubhaliwe kuyiqiniso.

Umcwaningi akukho lapho ezothatha khona igama lakho futhi konke ozobe usitshela khona akukho lapho oyokubona khona ukuthi uwenani. Konke ozokutshela umcwaningi kuzogcinwa kahle kukhiyelwe ekhabethe. Okunye kuzoncinwa kwi-compu yutha

ISIVUMELWANO (gcwalisa njengoba kudingeka)

Mina-----ngazisiwe ngakho konke Insert study title and name of researcher

Nginikeziwe ithuba lokuthi ngiphendule imibuzo bayelana nalolucwaningo noma isifundo futhi ngiphendule ngendlela engineliseka ngayo

Mina ngiyamemezela ukuthi ukuba kwami ingxenye yalolucwaningo angiphoqiwe futhi ngingayeka noma nini ngaphandle kokuphazamisa lesisifundo.

Uma ngabe ngiba nemibuzo noma yini ephathelene nalolucwaningo ngingaxhumana nomcwaningi

Uma ngabe ngiba nemibuzo noma ngifuna ukwazi kabanzi ngamalungelo ami ngokusebenzisana nani kulolucwaningo noma okumayelana nalolucwaningo noma ngabacwaningi ngingaxhumana nonobhalo wesikhungo esibhekene nobulungiswa bokwenza ucwaningo

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

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Email: HSSREC@ukzn.ac.za

Sayina ukuzibophezela

Usuku

Kusayina ufakazi uma ekhona

Usuku

Kusayina ochazayo uma ekhona

Usuku

Dissertation

by Phathiwe Sibanda

Submission date: 14-Apr-2019 06:26AM (UTC+0200)

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08 January 2019

Mrs Phathiwe Sibanda (217080718)
School of Built Environment & Development Studies
Howard College Campus

Dear Mrs Sibanda,

Protocol reference number: HSS/1498/018M

Project title: Health and socio-economic analysis of waste picking activities in Durban

Approval Notification – Expedited Application

In response to your application received on 30 August 2018, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully



.....
Professor Shenuka Singh (Chair)

/ms

Cc Supervisor: Professor Oliver Mtapuri
cc Academic Leader Research:
cc School Administrator: Ms Angeline Msomi

Humanities & Social Sciences Research Ethics Committee
Professor Shenuka Singh (Chair) / Dr Shamila Naidoo (Deputy Chair)
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Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville