AN ANALYSIS OF WASTE RECYCLING BUSINESS BY SMALL AND MEDIUM ENTERPRISES IN HARARE, ZIMBABWE (2009-2014)

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DEDICATION

This dissertation is a special dedication to my family: Trevor my husband, Kimberley, my daughter and my sons Kinsley and Kasey. You are my inspiration.
ABBREVIATIONS

EMA: Environmental Management Agency

SME: Small and Medium Enterprise

GoZ: Government of Zimbabwe

IES: Institute of Environmental Studies

SEDCO: Small Enterprise Development Corporation

CBO: Community Based Organisation

MoF: Ministry of Finance

RBZ: Reserve Bank of Zimbabwe

GDP: Gross Domestic Product

UNDP: United Nations Development Programme

MoU: Memorandum of Understanding

NGO: Non-Governmental Organisation

ZIMASSET: Zimbabwe Agenda for Sustainable Social and Economic Transformation

CGC: Credit Guarantee Company
ABSTRACT
This research sought to explore waste recycling business by the SMEs operating in Harare looking at their level for waste recovery and the operational challenges that they face. Waste management has emerged as a serious environmental challenge in Harare among other towns and cities in the country. Lessons learnt from countries in and outside the region have shown that the challenge can be dealt with through recycling. The research study focused mainly on recycling SMEs and views of key informants were sought to make valuable conclusions. The study considered the whole population of recycling enterprises that appear in the Environmental Management Agency as the only institution that has a comprehensive database of Recycling SMEs. Purposive sampling was done to select key informants for the study and the Statistical package for Social Sciences (SPSS) version 22.0 used to analyse the data. The research adopted a realism paradigm and was both qualitative and quantitative. The research revealed that SME business in Harare has a four level hierarchy starting with individuals and co-operatives that collect waste from the environment for sale; followed by enterprises that buy recovered materials from the first level enterprises for sale, enterprises that make middle products such as pellets, that is in the plastic industry and lastly those enterprises that make final products, black sheeting, plastic packaging, metal products, planting pockets, bin liners, household plastic ware etc. The majority of recycling SMEs, 52% are into scrap metal collection and/or processing, 23% plastic, 21% paper and 4% bottles and cans. Waste recovery by recycling enterprises compared against total waste generation in Harare was estimated at 11%. The majority of recycling enterprises, 42% collect and/or process less than 50 tonnes of waste material per month. Big recycling companies collect and/or process up to 1000 tonnes per month. Recycling SMEs have the potential to up their recovery rates however, they are faced with a wide array of operational challenges which have also affected the viability of their businesses. The enterprises earn low profits with the majority getting $2500 gross profit per month mainly because of low prices offered for products in the market and an aggressive competition among the numerous enterprises themselves against few buyers. Other challenges identified included the lack of finances, high production costs, lack of raw materials, inadequate human resources, lack of skill and abuse of funds in that order starting with the challenge affecting the majority of enterprises. These challenges have also reduced the production capacities of the enterprises with the majority of enterprise, 27%, operating between 21-30%. Thus, it was recommended that government should put in place legislation and policies that enhance the operations of recycling enterprises and come up with strategies for capacity building. On the other hand, recycling enterprises ought to be innovative and need to improve on their marketing strategies. civic
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CHAPTER 1: INTRODUCTION

1.0 Introduction

This chapter introduces the research, an exploratory study on recycling business by small and medium enterprises in Harare. Recycling is a business that offers a livelihood benefit to the operator, economic benefit to the country and improved waste management to the city. Waste Management enterprises collect solid waste material from the environment for reuse and recycling. The chapter covers the research objectives, questions, problem statement, justification and background of the research.

The Environmental Management Act (Chapter 20:27) of 2003, defines waste as domestic, commercial or industrial material, whether in a liquid, solid, gaseous or radioactive form, which is discharged, emitted or deposited into the environment in such volume, composition or manner as to cause pollution. Solid waste management refers to the whole process of collection, transportation, processing, recycling, or disposal and monitoring of solid waste materials produced by human activity. It is generally undertaken to reduce its accumulation and hence its effect on health and the environment (Feresu, 2010).

Improper solid waste management is one of the most pressing and emerging environmental issues confronting urban local authorities throughout Zimbabwe (Environmental Management Agency (2013); TARSC CFH SWM (2010); Manyenhaire et al. (2009)). Improper waste management in the country has come about mainly due to a number of economic and social factors. Zimbabwe’s economy faced a major decline especially during the year 2008 which saw many urban households slipping into poverty and facing various challenges including reduced capacity to pay for urban services (Potts, 2006). Consequently many residents were indebted to the local authorities reducing revenue available for service delivery. Reduced revenues compounded with reduced government grants led to inadequate annual budget allocations for waste management in many local authorities.

In addition, the macro-economic environment was characterized by hyperinflation and shortages in foreign currency which severely affected the capacity of local authorities to acquire adequate waste management infrastructure including importation of new equipment and technologies. All this explains the general failure of local authorities to conduct their
mandate to regularly collect and dispose solid waste in their jurisdiction including the widespread use of outdated vehicles and frequent breakdowns of equipment (Makwara and Magudu, 2013).

Increased poverty and unemployment have also led to an increase in economic activity in cities, especially Harare by Small and Medium Enterprises. This has directly and indirectly resulted in increased waste generation and accumulation. Globalisation on the other hand has increased the complexity of the problem through ‘dumping’. There is now an increase in electronic, human hygiene, medical, used motor vehicle, and hazardous wastes from other countries (Saungweme, 2012).

Social issues around the waste management problem in Zimbabwe are hinged mainly on attitude. Zimbabwean citizens are fond of throwing litter everywhere and have not adopted concepts of waste reduction. The peoples’ consumption patterns and lifestyles have also changed mainly due to globalisation; there is an increased choice of food items which come with large volumes of packaging material (Dangi et al., 2011).

1.1 Background to the Study

Improper waste management has affected the country through health and environmental hazards due to water, soil and air pollution from the indiscriminate dumping of solid waste, littering, backyard incineration and general poor waste management by local authorities (Feresu, 2010). Improper waste management leads to the spread of diseases, with the 2008 Cholera pandemic that recorded 30,938 cases being the epitome. The cholera outbreak affected neighbouring countries; South Africa (Musina), Botswana (Plum Tree) and Mozambique (Guro District) (Ministry of Health, 2011). Other notable impacts of improper waste management in Zimbabwe are contamination of underground water, blockage of storm drains, illegal waste dumping on street corners and open public spaces among others. Smoke from the burning of waste increases the risk of respiratory health problems. The breeding of disease-causing vectors at dumpsites increases the risk of food contamination and insect-borne diseases.

Throughout most of history, the amount of waste generated by humans was insignificant. Common waste produced during pre-modern times was mainly ashes and human biodegradable waste, and these were released back into the ground locally, with minimum
environmental impact. Due to industrialisation and urbanisation, the waste management challenge has become significant (Mubaiwa 2006). Waste management in Zimbabwe, has been entirely in the hands of local authorities. However, due to factors highlighted earlier, waste levels have risen to an extent that local authorities alone cannot adequately handle (Feresu, 2010).

A baseline study conducted by the Institute of Environmental Studies in 2011 on Solid Waste Generation in Zimbabwe showed that most local authorities in Zimbabwe were using aged vehicle fleets for their waste management operations. The baseline survey showed that the national mean collection of residential solid waste in 2011 was 52 per cent, while 28 per cent of the generated waste was being buried, 11 percent burnt, and 6 percent illegally dumped while 3 percent constituted other methods (Figure 1.0). The 52 per cent collection is an improvement compared with the previous decade where the collection rate was estimated to be averaging 30 per cent. However, the current rate is still very low and poses a serious threat to human health and to the environment (Institute of Environmental Studies, 2011)

The proliferation of waste accumulation especially in high density suburbs prompted the establishment of community groups who voluntarily cleaned up the environment. A significant number of waste management enterprises in Zimbabwe started as Community Based Organisations (CBOs) but later realised the business potential in recycling and became waste management enterprises (EMA, 2012).

Several studies done in other countries have shown that the informal small and micro waste recycling activities have positive effects on the environment, reduce the costs of waste management systems while providing ‘home grown’ waste management solutions and income opportunities for large numbers of people (Scheinberg, 2001). Their methods of waste management are highly adaptable, flexible and able to respond quickly to demand driven-forces. They come up with adaptive strategies to access waste and circumvent barriers while at the same time integrating new systems as they emerge. As waste management becomes modernised, the norm is the privatisation and mechanisation of waste management services which are more costly to residents and transfer the waste management challenge from residential areas to dumpsites or landfills (Gunsillus, 2008).

The integration of waste management enterprises in waste management increases the efficiency of the waste management system. Integrative and decentralised approaches offer
advantages in economic, and environmental terms and thus seen as being the most sustainable future alternatives in many cities. These positive effects of informal sector recyclers suggests that the informal sector should be explicitly factored into the design of waste management systems (Gerdes et al., 2010).

According to Scheinberg (2001), waste management business by small and micro enterprises provides an income opportunity to 1% of the urban population. This however, leaves out the big recycling companies meaning the overall figure is higher for the overall waste management business. The figure is also underestimated because the majority of small and small waste enterprises operate unofficially and informally and are unlicensed and/or unregistered. They are therefore not taxed and hence do not contribute significantly to the national economy.

A study done in Egypt, Mozambique, Kenya and Brazil revealed that waste enterprises recover up to 80% of the solid waste generated. By recovering inorganic and organic waste materials, the enterprises contribute significantly to the reduction of greenhouse gases and thus mitigating the impacts of climate change (Gunsillus, 2008). The writer adds that privatisation stifles business for micro waste management enterprises as in most instances the private companies are paid according to the amount of waste that they transport to the landfill meaning they do not allow these enterprises to recover recyclable materials.

Zimbabwe, in response to the waste management challenge, is developing an Integrated Solid Waste Management Plan which calls for multi stakeholder involvement in waste management with particular emphasis on the development of waste management enterprises hence the importance of this study. This research study comes to fill information gaps that would be critical in addressing improper waste management and prescribing solutions. There is need to establish the role of waste management enterprises and their significance in waste management prior to allocating them the largest responsibility in waste management as is the case with the plan in question. The strategy was adopted from other countries who have been successful in managing their waste hence the need to domesticate it. This then brings us to the need to then find out what the challenges of waste management enterprises are in doing their business so that if addressed their contribution will be meaningful.

The conceptual framework of this research (as adopted from Gunsilius (2008)) is that the involvement of waste management enterprises in waste management can yield positive
results, however, there is need to understand the way they operate and the challenges they face in executing their functions.

The waste enterprise sector is virtually understudied in Zimbabwe. Most researches previously done have been focused mainly on other SME ventures, manufacturing, poultry, carpentry, welding etc. This research focuses on waste management enterprises and also comes in response to the recommendations made by the Parliamentary Portfolio Committee on Small and Medium Enterprise Cooperative Development (2010) that there is need for SMEs to be considered in clusters because different groups are faced with different challenges. This will enable the Government to develop tailor-made strategies for promoting each cluster (SME Portfolio Report, 2010). Another aim of this research is to establish the level of waste recovery by recycling SMEs and identify the challenges they face in operating their businesses. In Zimbabwe, waste recovery rate has not been measured but is said to be low while in other countries like Egypt, India and Kenya the rate is as high as 80% (Institute of Environmental Studies, 2011; Gunsilius, 2008).

1.2 Justification for the Research

Waste management enterprises have not been widely studied in Zimbabwe and the developing world. The researcher's wish is to add on to the very little knowledge that is currently available on this group of SMEs in Zimbabwe; the extent to which they are involved in waste recovery and the challenges they face in executing business. Similar researches on challenges facing SMEs previously carried out have mainly focussed on other SME ventures; furniture manufacturing, information technology, agriculture related ventures (poultry, piggery and market gardening), and vending but this particular research focuses on waste management enterprises so as to provide sector specific solutions.

1.3 Problem Statement

Waste recycling business is believed to provide a solution to waste accumulation in the environment yet in Harare and the country at large it has remained small. The business is not viable and as such the performance of recycling SMEs has been greatly hampered by operational challenges. However, the fact that there are many recycling SMEs operating in Harare brings out a question of the viability of the business and their overall contribution in the waste recycling sector which can be answered through a research of their operations. In other countries such as Egypt, Mozambique, Kenya, Nigeria, India, and Brazil under the
banner ‘Converting Trash to Cash’ waste is considered a raw material and SMEs in these
countries have established viable recycling businesses that collect and process a significant
amount of the waste generated (Gunsillus, 2008, CID Consulting in Cairo (2008), Dias et al.
in comparison with other countries has prompted the need for an analysis of this type of
business.

1.4 Objectives of the Research

The research seeks to achieve the following objectives:

1. To investigate the level and potential of waste recovery by recycling SMEs in Harare.
2. To determine the viability of recycling business in Harare.
3. To analyse the operational challenges faced by recycling SMEs in Harare.

1.5 Research Questions

The questions to be explored during this research are:

i. What type of waste is collected and processed by recycling enterprises from the
environment?

ii. How much waste is collected and processed by recycling enterprises

iii. How does the amount of waste collected vary with the amount of waste generated in
Harare

iv. How do the enterprises feed into each other

v. How does the volume of waste recovered by recycling SMEs compare with that recovered
by big recycling companies?

vi. How viable is waste management as a business

vii. What are the operational challenges faced by waste management enterprises operating in
Harare?
1.6 Importance of the study

The research, the first of its kind to be done for waste management enterprises in Zimbabwe, provides an insight into recycling SME business. The findings of this study will benefit policy makers: the government and Ministry of SMEs on measures to take to improve waste management business. Improved recycling business will indirectly lead to the achievement of two of the Zimbabwe Agenda for Sustainable Socio Economic Transformation (ZIMASSET) goals; improved waste management and community livelihoods.

1.7 Assumptions

This research assumes that

- all information given by the respondents is true
- the sample of respondents will be representative of the population
- all recycling companies and enterprises are licenced with EMA and hence are in the database

1.8 Limitations and Delimitations

This research focusses on Recycling or waste management SMEs in Harare. The Small Enterprise Development Corporation (SEDCO) definition of an SME was adopted for this research hence the study considered those enterprises employing not more than 75 people (Small Enterprise Development Corporation, 2002). The research study was mainly centred on small and medium enterprises and also looked at the large scale recycling companies to estimate the potential of micro and small waste management enterprises in waste management and business. The research focuses on enterprises in Harare.

The Environmental Management Agency’s (EMA) database of recycling companies was used to select the research respondents. This was a limitation to the research because some enterprises operate illegally. However, the impact of this limitation was reduced by considering the known enterprises outside the database such as waste collectors from the only city council legal dumpsite in Harare, Pomona. Some enterprises could not divulge some important information on their activities to the researcher because of confidentiality of information. This was dealt with by asking indirect questions.
It was difficult to calculate the total volume of waste recovered by recycling enterprises from the environment and in Harare specifically because the enterprises are interlinked and the same material may be passed from one enterprise to another while some enterprises collect waste from outside Harare as well. However, follow up questions were asked to eliminate the volume taken from outside Harare and the enterprises were asked from whom they were getting their material from to avoid duplication.

1.9 Ethical Considerations

The anonymity of respondents and their organisations was maintained throughout the research. Participation in the survey was entirely voluntary and all questionnaires related to the survey contained a clear narrative description of the purpose of the study as well as a guarantee that the information provided would not be used for any other purpose other than stated.

1.10 Conclusion

This research will provide information and strategies for improving waste management business in Harare which will be rolled out to other parts of the country. Waste management business if improved will significantly contribute to the economy and provide a solution to the waste management challenge in the country.
CHAPTER 2: LITERATURE REVIEW

2.0 Introduction
The chapter discusses the theoretical and empirical literature around waste management and enterprises involved in waste management. It highlights what similar studies have revealed; how waste management enterprises in other countries are performing, the operational challenges they face and their contribution to waste management. Waste management enterprises in this context are small and medium enterprises that are into recycling business. It covers enterprises at different levels of the supply chain from collection of raw materials to production of final products.

2.1 Background of Waste Management
Zimbabwe has grappled with the problem of waste for a long time and the largest city in the land was not spared either as the waste in Harare accumulated at very high levels. Whilst to the environment and in the eyes of most people waste is a nuisance, it is actually a raw material that drives businesses. This assertion was also echoed by Masara (2011) were she noted that, whereas most people see plastics and waste as nothing more other than litter many had finally realised the economic benefits of waste and that there is a lot of money to be made from waste processing. Most of the people who now had a change of heart towards waste are now putting maximum effort not only to rid the country of waste but to tap into its economic opportunities and make a living out of it.

According to the Californians against waste (2014), the benefits of recycling extend beyond the materials that are kept out of the landfill. Waste recycling enables a city to conserve resources for future generations as well as preventing the emission of greenhouse gases that destroy the environment. Recycling also saves energy due to the production of biogas and helps in supplying raw materials to industries thereby creating jobs for many people. The city of Harare has been contemplating the creation of a landfill to contain its massive waste volumes an idea if seen to fruition may benefit the city and its residents in terms of a regular supply of energy and reduced waste problems. There is however need to carry out research and ascertain the part that small waste management companies will play in the whole process. For many small businesses in Harare, recycling has proven to be a cost effective method where companies use less energy to obtain and process materials, and reduce pollution and waste management costs. Most of the scrap yards around Harare are littered with waste
management companies such as at Gazaland in Highfileds. According to the Mid-Atlantic Municipal solid waste managers (2015), waste recycling involves the separation, collection, processing, marketing and use of a material that had been destined for the dumpsite. Items use in recycling include but are not limited to cans and bottles that can be crafted for other uses.

The Mid-Atlantic solid waste managers also posited that recycling reduced the reliance of people on landfills and incinerators as most of the waste is used up producing various goods. The health and well-being of the community is also enhanced as well as conservation of natural resources due to decreased demand on nature for raw materials.

Waste management businesses have many economic benefits and help in reducing unemployment as many people are employed in these small enterprises as well as helping in the collection and disposal of waste,2015 Waste Management, Inc, (2015). Waste management enterprises also enhance economic activities by providing a market for other companies who might sell stationery and food to waste management companies.

Kirstel (2012) noted that, in the recent years, modern society has become more responsible and accountable when it comes to waste management. Irresponsible disposal of waste or not which inconveniences other people or the environment is now considered to be a punishable act in Pennsylvania. Therefore, businesses and households should be aware and cautious of the environmental policies when it comes to waste disposal and management.

Waste disposal has emerged into an industry and is more than just removing waste and competition in the businesses has greatly increased as evidenced by the high number of companies involved in waste management (Kirstel, 2012). Besides the environmental benefits of waste management, recycling waste is also beneficial to the health and well-being of residents. LinkedIn, (2015) also noted that in the past, burning waste in the landfill or in the backyard was a common practice. Exposure to this can increase the risks of developing heart disease, respiratory disease, asthma and emphysema. Proper disposal of waste or waste management relocates waste to areas where they can be left, incinerated or disposed of in a safe manner. Removing waste from public areas helps reduce risks to overall health, decreases exposure to biohazards and reduces infestation of pest.
Mpalume (2015), noted that unemployed Zimbabweans pick plastic and scrap metal for recycling at the Pomona dump site in Harare and realise approximately $16 a week by selling the recyclable material. Kangata (2014) also noted that Harare is sitting on a health time bomb because of littering which could propel the outbreak of water borne diseases. Thus residents need to take responsibility of the waste they generate and avoid littering. This also brings about an opportunity to waste management companies who could take advantage of the high abundance of waste and collect it for resale or recycling. There is however need for research to ascertain whether waste management enterprises in Harare are taking advantage of the high waste generation in the city to boost their production capacities and if not the challenges they are facing in their operations. This also takes into cognisence the sprouting of many illegal dump sites dotted in Harare at centers such as Budiriro 5 and Tichagarika in Glen View with almost all streets littered with garbage (Kangata, 2014).

According to Iyeke (2013), solid waste management problems appear to be significant in urban cities and large towns across the world due to the huge quantity of solid waste generated from domestic and commercial activities. Many cities and large towns of the world are characterized by solid waste heaped in huge quantities on refuse dumps and thrown around in the streets and in small illegal dumps on any piece of unused land. This therefore calls for research to ascertain whether this situation is prevalent in Harare and how waste management enterprises in the city have responded to the high levels of waste generation in the city.

2.2 Nature of Small Businesses

Waste management enterprises fall under the ‘small businesses’ category. According to Justin et. al., (2008), a small business, is a business that is operated with a small number of employees and has relatively a low volume of sales. Usually small businesses have very small capital bases and depend on their personal savings to start their businesses as well as soft loans from relatives and friends which greatly limits their operating capacity. Small and Medium Enterprises rely mainly on their low sales as sources of income. They generally have problems securing funds from banks or other companies because they mainly comprise of the poor, widows, and or school leavers who have no collateral (Justin et. al., 2008). This therefore calls for research in the study area to ascertain whether small waste management
business suffer from financial challenges due to a lack of collateral as posited by Justin and whether this has an impact on their productivity and sales.

Timmons and Spinelli (2004) define entrepreneurship as a process which involves thinking and acting in a way that is opportunity obsessed well-reasoned and holistic resulting in a leadership style that is balanced as it considers all the alternative avenues of business management. It results in the creation, enhancement, realisation and renewal of value, not just for owners, but for all participants and stakeholders. Entrepreneurs are thus said to be very innovative and cognisant of the opportunities presented to them by the changing economic environment coupled with their will power to take risks and invest into business ventures that may seem to be shaky and risky, (Timmons & Spinelli, 2004). The economic situation in Zimbabwe and thus also in Harare is very delicate and dire and thus most businesses are struggling to make it and survive. The waste management industry has also suffered in the harsh economic environment and there is need for a research to comprehend the operations of small waste management companies in Harare to see whether their continued operations has been a result of their innovativeness and will power to take advantage of opportunities in their sector.

Most SME businesses are in the form of sole proprietorship, family businesses and partnerships. According to Heraty (2005), the sole proprietorship and family business is the simplest business form under which one can operate a business. It is not a legal entity; it simply a one man or family business. The owner or family is responsible and/or personally liable to its debts. It is easy to set up and at a nominal cost. Most businesses start as sole proprietorship and develop into more complex structures.

### 2.2.1 Advantages and Disadvantages of Small Businesses

According to the Small, Micro and Medium Enterprises Policy and Strategy Framework, (2002), the major advantages of a small business lie in its potential for innovation, flexibility, low start-up costs, rapid development and the distribution of risk. Heraty (2005) agrees with this and adds that a small business has freedom, autonomy, and if the business succeeds, sole gain.

Small businesses are mainly controlled by their owners and are thus able to quickly adapt to changes in the economic environment. Their greatest advantage is not being tied to any bureaucratic inertia which makes it very easy to respond to the changes in the marketplace.
Small business proprietors tend to be intimate with their customers and clients which results in greater accountability and maturity (Justin et. al., 2008).

Independence is another advantage of owning a small business. According to the same writer, Justin et. al. (2008), a survey of small business owners carried out in 2007 showed that 38% of those who left formal employment said their main reason for leaving was that they wanted to be their own bosses. Freedom to operate independently is a reward for small business owners. In addition, many people desire to make their own decisions, take their own risks, and reap the rewards of their efforts. Small business owners have the satisfaction of making their own decisions within the constraints imposed by economic and other environmental factors. However, entrepreneurs have to work very long hours and understand that ultimately their customers are their bosses (Justin et. al., 2008). Thus the need for research to ascertain whether small waste management businesses are getting satisfactory profits from their operations as highlighted by Justin 2008 in light of the economic hardships currently being faced in Harare and the nature of their operating conditions.

2.2.2 Challenges Faced By Small Businesses

Jan and Heene (2012) highlighted that small businesses encounter several problems related to corporate social responsibility due to characteristics inherent in their construction. Owners of small businesses often participate heavily in the day-to-day operations of their companies. This results in a lack of time for the owner to coordinate socially responsible efforts. There is need to carry out a research so as to explore the way waste management companies in Harare run their businesses and see whether they are suffering from the same problems of over concentration in their businesses whilst neglecting their corporate social responsibility.

In addition, small businesses also face a form of peer pressure from larger forces in their respective industries making it difficult to oppose and work against industry expectations. Furthermore, small businesses undergo stress from shareholder expectations. Because small businesses have more personal relationships with their patrons and local shareholders they must also be prepared to withstand closer scrutiny if they want to share in the benefits of committing to socially responsible practices or not.

While small businesses employ over half the workforce and have been established as a main driving force behind job creation, the quality of the jobs these businesses create has been
called into question. According to Heraty (2005), small businesses generally employ individuals from the secondary labour market. As a result, in the U.S. wages are 49% higher for employees of large firms. Since the economy in Zimbabwe has largely turned informal and is now dominated by many small businesses, there is need to carry out a research in the waste management sector in Harare to check whether the findings by Heraty 2005 hold water. There is need to see if the small waste management companies in Harare are also greatly contributing to employment creation and the level of their contribution viz are viz that of large companies.

Additionally, many small businesses struggle or are unable to provide employees with benefits they would be given at larger firms. Research from the U.S. Small Business Administration indicates that employees of large firms are 17% more likely to receive benefits including salary, paid leave, paid holidays, bonuses, insurance, and retirement plans than small business employees. Both lower wages and fewer benefits combine to create a job turnover rate among U.S. small businesses that is three times higher than large firms. Employees of small businesses also must adapt to the higher failure rate of small firms. In the U.S. 69% last at least 2 years, but this percentage drops to 51% for firms reaching 5 years in operation (Jan and Heene, 2012). Small firms need to maximise their strengths, the flexibility they have and be innovative so that they grow to be larger firms thereby reducing their chances of failure.

According to Holt, (2003) small business owners often keep their own books and do their own accounting but most of them neither have the time nor the inclination to become experts in accounting. They may use personal computers to track inventory and do a bit of word processing but rarely care about knowing computers. They will think strategically but not develop strategic plans and be concerned about market demand but not engage in market research. In most instances, they do things required to survive tomorrow and to compete next week. The writer adds that this sense of immediacy coupled with a disregard for management concepts has been a major contributor towards the failure of small businesses.

Heraty (2005) posits that small businesses try to encompass all the activities required to be in business, yet lack the depth necessary to become specialised in any particular aspect of management. In most cases, the business owner may be an expert in merchandising, accounting, engineering but often this technical orientation dominates business decision
making, further reducing the ability of the owner to deal with management issues such as planning, organising, leading, and controlling the enterprise.

Most business failures are attributed to the incompetency of the owner. The researcher agrees with the writer and adds that for a business to grow and be successful, the rightful skill and personnel should be engaged to ensure all facets of the business are covered. Justin et. al. (2008) also elaborates that an expert in a given technical field will also be expert at running that kind of business. Thus the need for research to comprehend the way small waste management businesses in Harare are operating and whether they have the requisite knowledge and experience to run their businesses or a lack thereof is hampering their productivity.

2.3 Challenges Faced by Small and Medium Enterprises

The challenges faced by entrepreneurs are broadly divided into internal and external forces. Internal forces are those that the entrepreneur has control over whereas the external factors are those that are not under the control of management. The two division were further broken down into three categories that is; Strategic issues, failure by the entrepreneur to understand his market niche and mismanaged relationships with suppliers and customers. Among the most frequently mentioned are recession, interest rate changes, changes in government policy, inflation, the entry of new competition, and industry/or product obsolescence (Timmons & Spinelli, 2004).

According to Timmons & Spinelli (2004), external factors are rarely the sole reason for a company failure. External shocks impact all companies in an industry and only some of them fail yet others survive and prosper. There is need for the entrepreneur to understand his market and work towards satisfying it. That way his market will increase and hence profitability. A strong relationship should exist with all players in the value chain. Other strategic issues include ‘over growth’. Some businesses grow beyond their capacity and therefore fail. A clear and well done business plan is required, the plan should also look into alternatives in case things do not go as per the plan (Timmons & Spinelli, 2004).

Holt, (2003) on the other hand says small business owners are particularly vulnerable to both factors because they are usually preoccupied with the immediate needs of survival. Since small waste management enterprises are operating in a dynamic economic environment and prone to a number of challenges. There is a need to carry out research and find whether the
challenges propounded by the two preceding scholars are also prevalent in Harare and having a similar impact on the operations of small waste management enterprises.

2.3.1 Lack of Equipment and Resources

According to Masuko & Marufu (2003), SMEs face a plethora of challenges ranging from a lack of adequate equipment and insufficient resources to execute planned activities, to lack of appropriate management skills to run their business entities, access to loans, inhibiting legal frameworks, access to markets, quality products and registration bureaucracy. SMEs are currently also facing challenges such as the limited growth of their businesses and increased competition in the SMEs sector due to globalisation. This therefore calls for research in light of the fact that the Zimbabwean market and mainly that of Harare has been invaded by many foreign players. The Look East policy has opened the door to many companies from Asia and thus there is need to see whether this has increased the level of competition that small waste management companies are faced with in Harare. Also there is also need to ascertain whether small waste management businesses in Harare are also facing challenges of lack of finance and business management skills as highlighted in literature.

Nyoni (2004) brings out the fact that the dynamics of small-scale industries have become more challenging as SMEs are required to offer products to the required international standards they cannot compete in a Globalised World. This is due to the fact that SMEs have limited access to finance which reduces their ability to procure quality raw materials hence they become less competitive.

2.3.2 Bad Publicity in the Western Media

Ndlovu (2004) adds that SMEs in Zimbabwe are also experiencing challenges such as bad publicity in the western media which contributes to the high failure rate of SMEs in the country. This negative publicity results in low foreign direct investments which consequently increases the SMEs' challenge of limited access to sources of finance. Research is of paramount importance in this cases to validate the findings if Ndlovu 2004 and ascertain whether the findings by Ndlovu also apply to small waste management enterprises as these have little interaction with many foreign investors and require very little capital as to be greatly affected by low foreign investment.

A study carried out on the challenges faced by SMEs in South Africa revealed that SMEs are perceived to have a high risk profile by financial institutions. This results in players within
the sector being charged higher interest rates compared to larger firms, thus unnecessarily increasing operating costs and reducing their competitiveness. Track records for most SMEs are patchy or short due to inadequate or poor record keeping, while assets and collateral may not be sufficient enough to underwrite credit, Ndlovu 2004. Thus the need for research check whether small waste management companies in Harare are also being denied financial assistance due to the risk profile associated with them.

As has previously been alluded to, SMEs generally lack the necessary skills required to run business effectively and efficiently. Management skills in handling finances and other technical requirements are often limited; human resources management, marketing, and financial management skills have also been identified to be lacking in SMEs (Zindiye, 2008).

2.3.3 Lack of Management Skills

According to Nyoni (2002) several studies in Zimbabwe suggest that entrepreneurs in the SME sector attach low priority to training and are often unwilling to participate in programs which require them to finance even a small proportion of total training costs. The areas of weakness identified range from cash management to marketing strategies and finance. Business start-ups lack technical skills such as designing and production of quality products, but also expertise in implementing growth strategies for their enterprises.

Gono (2006) concurs with Nyoni’s findings that financial challenges hamper the operations of small businesses. The two scholars also converge on the assertion that a lack of technical knowhow to run businesses as well as the inability to adapt to changes in the market affect the operations of small businesses. Most of the small businesses in Harare are mainly owner operated and in most cases the owners’ employee very few people to assist and thus there is need to ascertain whether the nature of their operations is as result of lack of human and financial resources. There is also need to research on their adaptability levels to changes in the waste management industry in light with the assertions of Gono 2006.

According to the SME Policy and Strategy Framework (2002), small businesses encounter a cascade of constraints in financing, management capabilities, and access to information sources, technology support, marketing and export facilities and lack of access to land. In the policy document, it is also highlighted that another constraint is the hostile regulatory environment. This scenario creates a barrier to entry for many who would want to start business. All of these make it difficult for small businesses to establish themselves and compete in a free market.
The researcher agrees with all the writers on the challenges faced by SMEs and concludes that the challenges can be dealt with at different levels; the entrepreneur himself has a role to play and all relevant ministries to ensure the success of business. It is critical that the challenges be addressed, for instance, in the case of waste management enterprises good waste management business will lead to a cleaner and healthy Zimbabwe. If waste management enterprises were to operate at full capacity it means there would be increased competition and hence demand for raw materials.

2.4 How SME’s Can Succeed In Business
According to Hwengwere (2011), many informal entrepreneurs and micro-enterprises fail to grow not because they lack money, but mainly because they lack business management and marketing skills, which is the first pillar of success for an entrepreneur. The majority of these enterprises are not bothered about product quality, putting in place financial and business process systems, adopting new and modern technologies or upgrading their human capital. Competitive entrepreneurship is what develops an enterprise and accumulates wealth for an entrepreneur.

A one man business rarely achieves any of these benchmarks mentioned in the preceding paragraph. Hwengwere (2011), also adds that a competitive business is continuously growing, improving the quality of its products and services and developing better processes. With time, it can join the national and later international value chains, supplying high quality, value adding products that meet international standards to bigger firms and international markets.

In the case of recycling business, product quality is a parameter of importance. In as much as final products are made from recycled material, the final product should look as good as that from virgin material otherwise the product does not sell. With globalisation, there is high competition hence the need for adopting modern technologies to ensure efficiency and perfection and hiring skilled labour so that the product satisfies the customer. If waste management enterprises adopt competitive entrepreneurship, their business becomes more viable and attracts meaningful markets.

According to a report by the United Nations Commission on Private Sector and Development entitled “Unleashing Entrepreneurship: Making Business Work for the Poor (2004), even when there is rule of law, physical and social infrastructure and stable domestic and global micro environments, three additional factors are indispensable for successful SME
development: access to skills and knowledge, access to financing and a level playing field. The report also highlights that a firm’s competitive advantage comes from its entrepreneurial capacities: its management and technical knowhow, including labour-management relations, information technology skills, basic finance, economics, project management, as well as the skills, education and adaptability of its employees.

The starting point for an entrepreneur’s business is a vision. A perfect entrepreneur understands how to capitalise on trends and paradigm shifts. They should be able to predict new opportunities and communicate the vision to employees so as to ensure that the vision is shared. To have lasting success, entrepreneurs need to continuously evolve, they should not be comfortable and complacent (Heraty, 2005).

Timmons and Spinelli (2004) adds that the success of a business to a large extent is also dependent on its human resource. The leader should have his employees at heart and know how to manage them and the team should co-operate. Key to the success of an enterprise is the recognition and proper management of employees. Some enterprises have gone under because they failed to manage their human resource. Timmons & Spinelli (2004) wrote, "People don't want to be managed, they want to be led". An entrepreneur should adopt a good leadership strategy that will keep his employees committed and enthusiastic to work. Motivated employees who are given space to be innovative and venture into new strategies produce good results.

According to Timmons & Spinelli (2004), there is little dispute today that the entrepreneurial team is a key ingredient that can increase the potential of a business venture. Investors are captivated by the creative brilliance of a company's head entrepreneur. The head entrepreneur should attract investors through his management skill, innovativeness, commitment, good track record, honesty, among other characteristics. The lack of such knowledge and skill among business owners is a challenge that should be dealt with for business to succeed.

### 2.5 Social Entrepreneurship Support in Waste Management

By understanding why businesses fail, entrepreneurs can discover ways to tilt the scales towards success. Holt (2003) recommends that an aspiring entrepreneur's lack of experience may be overcome by working in a related business before starting a venture. Many business owners update their skills and knowledge through seminars and training programs. When an owner recognises a personal shortcoming, it may be necessary to build a business team or join in partnership with someone with complementary skills. Thus the need for research to
check whether the availability or unavailability of business seminars and workshops has had an impact on the operations of waste management businesses in Harare.

Business owners should have a clear understanding of the business and the environment in which their firms compete. While the purpose of being in business is never just to make money, the result of knowing why you are in business and then developing a distinct competency around that purpose will dramatically improve the likelihood of profits (Holt, 2003). This concept tallies closely with recycling business, this type of business is viewed as an answer to improper waste management and NGOs, the business community and other entities would be willing to incentivise such adventures hence reducing costs and enhancing profits for the business. In some instances raw materials may be supplied for free.

Holt (2003) also states that most business owners intuitively try to distinguish their enterprises and those who succeed are usually far more successful than those who try to sell everything to everyone. It is more beneficial identifying a niche market and concentrating on satisfying it. Other key strategies, at a policy level, include the creation of an enabling legal and regulatory environment that is not too stiff and bureaucratic, investment promotion, market promotion, technology and infrastructure support, targeted support, relationships and waste that waste management enterprises can deal with in Harare, there is need for research to ascertain whether companies that are concentrating on only one type of waste are faring better than the ones dealing with many types of waste as posited by Holt (2003).

As previously highlighted, the Zimbabwean economy is not yet supportive of business and because of the factors involved so little can be done now. However, the regulatory environment, which is currently stiff can be altered to support business. The researcher feels that waste management enterprises for instance, instead of being made to pay annual fees for their business should be exempted from such environmental fees. The Environmental Management Act (CAP 20:27) of 2003 states that entities that contribute positively to environmental management should be incentivised but its implementation has not taken off.

According to Dias et al. (2008), waste collectors are confronted with health care challenges. They work under hazardous and unsafe working and in some instances, living conditions. They generally lack proper sanitary services, health care and social benefits. In some countries, for instance Egypt, child labour is very frequent and life expectancy is low). In some instances, for example, in Zimbabwe, women constitute a significant number of waste pickers and some of them go to work with little children on their backs exposing them to
harsh conditions. This has a bearing on the performance of waste management enterprises; the researcher feels the success of a business also depends on social and health wellbeing of its workforce. Success of a business goes beyond skill, resources, and other issues previously mentioned.

2.6 Waste Management Business

According to a study carried out in Kenya, the solid waste management business pipeline starts with collection of waste for sale followed by processing to make final products. Plastic waste for instance may either be sold as raw plastic or is made into chips and pellets that are further processed into plastic ware, plastic pipes and polythene sheets among other products. The same applies to paper and glass. Profits increase up the value chain hence the need for waste management SMEs to grow and be producers of the final product. The study revealed that the majority of SMEs are however at the lower level of the hierarchy mainly because of lack of resources among other challenges. The higher levels require sophisticated machinery that most SMEs cannot afford. With the lower level, profits are very low and these can be maximised by increasing volumes (Gartner (2001)).

In Europe, the conversion of waste to energy is another business opportunity. Waste-to-Energy (WtE) business plants in Europe have a market share of 13 million citizens who are supplied with electricity and 13 million citizens who are supplied with heat. In 2010, 73 million tonnes of household and similar waste was converted to raw material and treated in Europe. Besides WtE being a business option, it significantly contributed to environmental management, it saved 7 - 40 million tonnes of fossil fuel (gas, oil, hard coal, or lignite), which would have emitted 20 - 40 million tonnes of CO2 if conventional power plants were used to produce this amount of energy. In the United States, in year 2000, recycling business made annual sales of US$236 billion. In 2011, the United States generated 389 million tons of municipal solid waste and 141.9 million tonnes was used as raw material, 87.8 million tons was recycled, 24.6 million tons composted, and 29.5 million tons were used as fuel in WTE plants (Beck, 2011).

The recycling rate of plastics increased by 21% to 2.66 million tons between 2008 and 2011 in the U.S. This was due to higher recovery of polyethylene terephthalate (PET) and high-density polyethylene (HDPE) bottles, other HDPE and polypropylene (PP) rigid plastics, and HDPE and low density polyethylene (LDPE) films, bags, and wraps. However, despite the growth in both access to and types of plastics collected for recycling, some plastics could not
be economically recycled. For these non-recycled plastics (NRP), conversion to energy is preferred over land filling, in accord with the U.S. Environmental Protection Agency’s (EPA) waste management hierarchy. Waste management business in the U.S. reduced land filling by 23 million tonnes (Environmental Protection agency, U.S., 2012).

The adoption of recycling as a business option is encouraged in many developing countries. This is so because in many countries, just like in Zimbabwe, the infrastructure and organisational system of waste management is insufficient. Municipalities and formal service providers can neither provide collection service to all households, nor guarantee an effective recycling and an environmentally sound treatment or disposal of waste. Only about half of the population in these countries is provided with sufficient and regular waste collection services (Gunsillus, 2008). According to Mubaiwa (2013), urban waste collection rates in Zimbabwe dropped from at least 80% in the mid-1990s to as low as 30% in some large cities and small towns by 2012. Since waste management companies depend on waste a decline in waste accumulation for their raw materials a decline in waste collection may result in raw material shortages and thus the need for research to ascertain whether waste management enterprises in Harare are also facing shortages of waste due to the decline in waste collection.

Gunsillus (2008) adds that in many of these countries, informal waste pickers contribute significantly to waste management and resource efficiency by collecting, sorting, trading and processing waste. Informal waste enterprises constantly come up with adaptive strategies to access waste and do away with barriers while at the same time integrating new systems as they emerge.

In India, Egypt, Brazil and Mozambique the informal sector achieves high waste recovery rates because their profits depend on how much they collect. Consequently a huge variety of recyclables is segregated and can be further processed depending on the demand and technological advancements in the industry. A significant drop in the recovery rates was witnessed in Egypt when a private company was engaged to collect solid waste. The company would collect waste from households and take it straight to the dumpsites without allowing waste pickers to select what they could. This indicated the importance of the role played by waste management enterprises (Gerdes et al. (2010).

Their involvement in waste management reduces the cost of managing waste by local authorities, waste accumulation in the environment and subsequently a reduction in waste
volumes going to the landfill. By making recycling and composting possible, they also contribute to the reduction of greenhouse gases (Gerdes et al., 2010).

According to Gunsilius (2008) the entrepreneurial capacities of waste enterprises like any other SME group are an important factor in the sustainability of their interventions. In some countries, activities supporting SME integration include facilitating credit, skills development and improvements in managerial know-how and marketing to enhance the competitiveness of labour-intensive small-scale activities. In Zimbabwe, as previously highlighted, SMEs have always been considered as one group and government initiatives have not specifically focussed on waste management enterprises. Countries like Egypt, Brazil, and India have tailor made strategies to improve the business of waste management enterprises. According to Gerdes et al. (2010), the three countries have achieved positive results from the consideration of this sector. The national and local government units in these countries have initiated partnerships with waste management enterprises for waste collection or recovery. Informal workers have been organized into cooperatives, manage sorting and recycling centers and provide the local or international recycling market with valuable materials. The workers integrated in cooperatives often earn 50-100% more than before the support measures. They also benefit from improved working conditions and better health protection. Dias et al. (2008) acknowledges that partnerships with the waste management enterprises is a real opportunity to improve waste management and resource efficiency in low- and middle income countries while contributing to poverty reduction.

In India, waste management enterprises are dominated by women and because of this women's organisations were the first to cast light on waste pickers and their interests. In 1990 the Project for the Empowerment of Waste Pickers of the Women's University in Pune in Western India started organising waste pickers around their work issues. In Brazil, cooperatives of waste pickers were created in several cities, and were very successful. These activities paved the way for the creation of a national movement, which began with the 'First National Congress of Brazilian Waste Pickers' held in 2001 (Gerdes et al., 2010).

Cooperatives, associations or small enterprises have also been the means of integrating informal actors in formal systems in GTZ supported activities (Gerdes et al, 2010). In Mozambique, Caritas and the Italian NGO LVIA, the same has been done and the cooperatives have performed exceptionally well. In India, GTZ organised informal individual electronic waste collectors and recyclers so that they could be registered as a formal company.
to improve their recycling operations. The process however, took long, over two years but finally the company was established and it treats 2 tons of e-waste daily in accordance with environmental standards and in partnership with an established e-waste recycler (Gerdes et al., 2010). This research aims at providing similar information on the performance of waste management enterprises, it is of importance for Harare to know what type and how much of waste is taken for recycling and how much more can also be collected by these SMEs if their challenges are addressed. Such information aids in policy and decision making. Thus there is need for research to comprehend the contribution being made by waste management enterprises in Harare viz a viz that of large waste management companies.

In the Brazilian case, waste pickers traditionally collected organic material as feed for animals and later waste recovery evolved to include recyclable materials such as plastic waste and scrap metal before other waste materials. The sector evolved dynamically, including the creation of powerful and monopolistic wholesalers buying waste materials. On the other hand, the development of waste picker organisations was initiated by charity organisations, social movements and political authorities. There is now extensive development of waste pickers; waste pickers have organised and established formal relationships with municipal and national governments (Gerdes et al., 2010).

The Mozambique government, in cooperation with Caritas and the Italian NGO called LVIA, has established cooperatives and supported them in the process of internal organisation, official registration, and technical operation of centers for sorting, washing and crushing plastic materials. In India, GTZ supported individual recyclers of electronic waste to associate with others in order to be registered as formal companies and to improve their recycling operations (Gunsilius, 2008). Dias et al (2008) brings in another dimension, the political will to integrate the waste management sector. The political will is one of the major factors defining the level of integration being reached.

It is both a matter of national policy; respective laws and regulations and a question of underlying attitudes towards the waste management sector activities in general. It is also determined by the willingness and creativity of local decision makers, using the space within existing regulations to create initiatives with the sector. It would also be important for research to determine how Zimbabwean waste pickers or collectors operate; the establishment of co-operatives gives the business more recognition and business success levels are enhanced. There is resource pooling and risk is shared. Thus this research helps in
identifying the nature of operations of small waste management enterprises and the benefits they could derive from government support.

In Brazil, after an initial period of mutual mistrust and conflict, various functioning models of cooperation and partnership between waste picker organizations and big recycling corporates have evolved. This has resulted in the formation of municipal recycling scheme partnerships between many waste pickers' organisations and local governments. Relations are regulated with specifically designed contracts, covenants and arrangements, always according to local circumstances. The establishment of direct contracts between informal sector organisations and local governments in Brazil has also been facilitated by a general trend towards re-democratising local governments and the clear commitment of state institutions to act as catalysts for social development (Gerdes et al., 2010).

The federal district of Brasilia awarded waste pickers the contract of collecting material from state buildings or Government offices. In cases where the waste pickers themselves cannot collect, it dictates the destination of the materials to waste pickers. The government is also supporting waste pickers through the payment of subsidies to informal sector recycling centres in Brazil (CID Consulting, 2008). Thus the need for research to see whether there are any small waste management enterprises benefiting from government contracts if they are any or if it is possible for them to be subcontracted by government or local authorities.

In the Philippines, GTZ and the city council of Iloilo support groups of waste pickers at waste disposal sites to organize and manage sorting centres to sort out recyclables. The groups also initiated new activities like composting and sorting out alternative fuel resources for co-processing in cement plants. But in order to conduct these new activities completely without support from the municipal authorities, additional trainings on financial management, marketing etc. seemed necessary and have recently been provided to the entrepreneurs (Gunsilius, 2008).

According to Gerdes et al (2010), there is need for municipalities to support waste management business and put in place measures guaranteeing regular access to waste for recovery by waste management enterprises. These can be created by official government arrangements. In Egypt, waste management enterprises traditionally assured access to waste by providing collection services to the households even if they used only a part of the collected waste. Some cooperatives also arrange separate contracts with big waste producers such as supermarkets to ensure regular provision of recyclables. The establishment of
transparent and fair prices for recyclable materials paid by recycling cooperatives would already constitute a significant improvement in income for actors that continue to work individually in waste recovery. Research is of paramount importance in this case so as to analyse the feasibility of sub-contracting waste management companies in waste collection and whether the city of Harare is open to such partnerships.

In countries such as Guatemala, Mali, Kenya, Costa Rica, Peru, the Philippines local authorities have appreciated the work of waste management enterprises. This has been done in many forms; in some instances they have been given franchises, concessions and contracts for the services they are providing to the respective cities. This has not only given recognition but also created a formal management and control relationship between the government and the enterprises (Scheinberg, 2001). The writer also recommends that as a slightly lower level of intervention, cities can require that micro and small enterprises get permits, have their routes registered and approved. This will involve the buying of permits to dump at the landfill, register their vehicles, or in some other way get official approval for their work. This has been done in Guatemala City. In the Philippines, and Brazil, official recognition has been done through announcing a ‘public-private partnership’ and through helping the micro and small enterprises get equipment or have access to the waste (Scheinberg, 2001). This therefore calls for research to ascertain whether this is a practical proposal considering that most of the small waste management enterprises in Harare are cash strapped.

A higher level step that cities can take to improve the business of these enterprises is to institutionalise them as part of an Integrated Sustainable Waste Management System. This can be done by making a long-term plan based on integrating their activities into an overall Integrated Sustainable Waste Management Strategy and expressing this integration in law, in regulations, and in formal planning documents (Scheinberg, 2001). Waste management enterprise business significantly depends on the co-operation of municipalities and their waste management systems. If a municipality encourages waste sorting and allows waste enterprises to collect materials before they go to the dumpsite, production costs are significantly reduced for the enterprise. Less time and resources are spent on recovery and cleaning the raw materials. In most instances, dumpsites are far from the residential and business areas and recovery of materials at source may reduce transport cost for the business. Thus there is need to see whether the production costs being incurred by small waste management businesses are as a result of a lack of access to waste in areas around them.
2.7 Contribution of Micro and Small Waste Management Sector to Waste Management

Waste management enterprises are expected to contribute to waste management and like other SMEs, to economic development. The two are interlinked, an improved economy leads to improved service delivery in the country. New enterprises are formed every year, trading networks evolve, capital accumulation and investments take place and savings are made in terms of raw materials, transport and energy. A study carried out in Brazil, Kenya, India and Egypt revealed that waste management enterprises can recover 80% of solid waste for recycling (Scheinberg, 2001).

In countries such as Guatemala, Mali, Kenya, Costa Rica, Peru, the Philippines and many others, the local authorities play a limited role in urban waste management. They however, retain their legal and regulatory responsibility for urban sanitation. In many cities in the South, the authorities may not have the resources to collect and dispose of the waste or there may be policy decisions to privatise waste management activities and in some instances municipalities choose or are forced by political pressure to use their resources on other priority obligations. In these instances the gap left by municipalities has led to the autonomous development of the small and micro urban environmental sector who has seen and exploited a business opportunity to collect the waste, sweep the streets, recycle and or clean indoor and outdoor spaces (Scheinberg, 2001).

Scheinberg (2001), posited that a financial saving can result from engaging in partnership with recycling enterprises and acknowledges that this is actually of bailing out financially depressed municipalities. Haan et al., adds that lower costs can also follow from the use of more appropriate technologies such as hand carts which require less investment costs and can have lower operational costs than compactor trucks. He states that the engagement of micro enterprises is less costly to the community than engaging a private company that sends all waste to the landfill. This was experienced in Costa Rica, the case study below gives details.
Box 2.1: Costa Rica’s case of engaging micro enterprises in waste management

In one municipality in Costa Rica, a formal large sector enterprise was awarded a contract to collect waste by the Local Government. The rates became higher and the residents could not pay the new price of the service that the company was asking for. The local government then switched to a local micro enterprise to do the job. The enterprise started its operations in 1998 and with support from an NGO ACEPESA, and it performed exceptionally well. The enterprise worked to fulfil its goals: To provide a service that is satisfying to the clients and creating jobs in the community. The enterprise had support from the local government and showed initiatives in recycling. The micro enterprise survived the competition of the large enterprise and has been able to establish itself in the town and is in big business. It enjoys co-operation from the community and has a huge supply of raw materials.


The Costa Rica’s case study reveals the benefit of customer satisfaction that was attained through meeting the community’s needs. A satisfied customer becomes loyal to the business and graduates from being a customer, into a client and a partner in the long run.

A study carried out in India revealed the benefit brought about by the engagement of waste management enterprises in waste management against privatisation. The difference between privatisation and the engagement of waste management enterprises differs in the sense that, privatisation focusses on collection and disposal of waste whereas waste enterprises are concerned with recovery and recycling. With privatisation, the problem is transferred from the waste generation areas: residential areas, industry and the Central Business District to another site, a dumpsite creating a problem there; waste accumulation and burning. Waste collection and disposal systems are designed in a way that potentially denies the informal sector waste. When controlled management of disposal sites is introduced, waste pickers are often denied access to the site in order not to disturb unloading. When private companies are contracted, they are paid according to the amount of waste taken to the landfill. This therefore means the private company will do any things possible to ensure they carry large volumes thereby denying waste enterprises access to waste (CID Consulting, 2008).

Waste management enterprises have the potential to improve waste recovery and hence reduce waste accumulation. This can be done if this sector is recognised and strong partnerships are established with key stakeholders including municipalities. In Germany, the
German Technical Co-operation (GTZ) has put particular focus on the integration of informal workers and small enterprises in its technical assistance programmes. Pilot activities in diverse countries such as Costa Rica, Brazil, Egypt, India, and closer home, in shown that the informal sector is able to act as an efficient partner of municipalities and private waste management and recycling sector. This project by GTZ focuses on the organisation and official recognition of informal waste pickers, training on health and environmental aspects of waste recovery and business management skills as well as creation of partnerships with other actors (Gunsillus, 2008).

In Manila, waste buyers have been buying and collecting waste from house to house for 25 years for resale. In Pakistan, 93% of all households sell their waste to waste buyers who have provided a local opportunity for household recycling (Arroyo et al., 1999). In Nairobi-Kenya, small enterprises have been collecting waste under direct contracts to the generators. The city is working on a collection franchise in its industrial area. In Columbia, the National Association of Recyclers (ANR) has succeeded in leveraging several contracts for its members either with the municipality or with the formal sector private companies contracted to the authorities (Lardinois and Furedy., 1999)

2.8 Conclusion

In conclusion, research studies done to date have identified a research gap which this particular research will fill up to ensure effective and efficient waste management while promoting recycling business.
CHAPTER 3: RESEARCH METHODOLOGY

3.0 Introduction

This chapter focuses on the research methods that the researcher used in acquiring the relevant data to answer the research objectives. According to Leedy, (2012), methodology is an operational framework within which facts are placed so that their meaning may be seen more clearly. The feasibility of any study depends on the selection of an ideal design, sampling procedures, instruments and data analysis procedures.

3.1 Taxonomy of Research

There are three main types of research; exploratory, descriptive and explanatory research. The difference between different taxonomy of research is their objectives.

3.1.1 Exploratory Research

This type of research is defined as the initial research into a hypothetical or theoretical idea. This is where a researcher has an idea or has observed something and seeks to understand more about it. An exploratory research is an attempt to lay the groundwork that will lead to future studies, or to determine if what is being observed might be explained by a currently existing theory. Most often, exploratory research lays the initial groundwork for future research (McNabb, 2002).

3.1.2 Descriptive Research

This type of research is an extension of exploratory research. Exploratory research as indicated earlier establishes the groundwork then the newly explored field needs more information. Descriptive research attempts to explore and explain while providing additional information about a topic. This is where research is trying to describe what is happening in more detail, filling in the missing parts and expanding our understanding. This is also where as much information is collected as possible instead of making guesses or elaborate models to predict the future - the 'what' and 'how,' rather than the 'why' (McNabb, 2002).
3.1.3 Explanatory Research

This type of research attempts to connect ideas to understand cause and effect; it is meant to explain what is going on. Explanatory research looks at how things come together and interact. This research does not occur until there is enough understanding to begin to predict what will come next with some accuracy (McNabb, 2002).

Choice of design

This study adopted the exploratory descriptive design. The field of study is new, people have an idea that recycling can be adopted to lessen solid waste accumulation in Harare and the country at large but no studies have been done. Having laid the groundwork, it would then be necessary to find out more information about recycling SMEs;

i. What type of waste they recover from the environment?
ii. What volumes of waste are collected for recycling?
iii. What recycling ventures exist?
iv. How does the volume of waste collected by recycling SMEs compare with waste generation in Harare?
v. What is the operating capacity of recycling SMEs?
vi. What are the operational challenges faced by waste management enterprises operating in Harare?

3.2 Research Paradigm

The choice or type of a research methodology is determined by the type of paradigm being adopted. Guba and Lincoln (1994) indicate that paradigm issues are crucial and no researchers ought to go about the business enquiry without being clear about the paradigm that guides their research. Different writers have different classes of paradigms, however, Guba and Lincoln (1994) summarised various authors’ types of paradigms into positivism, constructivism, critical theory and realism.
3.2.1 Choice of Paradigm

The researcher adopted a realism paradigm. This paradigm focuses on the use of both qualitative and quantitative methods to form methodological triangulation. Realism paradigm depends on the triangulation of several perceptions of reality to capture a better picture of the phenomenon. People’s perceptions, attitudes, experiences and motives are triangulated in attempting to explain reality. Because of the methodological triangulation where both quantitative and qualitative techniques are used they complement each other resulting in a stronger research design that ensures valid and reliable findings. In terms of generalisation of the findings the paradigm gives only tentative explanations for one time and place (Guba and Lincoln 1994).

3.3 Research Strategy

A research design encompasses the methodology and procedure employed to conduct research (Creswell, J.W, 2012:57). This research adopted the survey research strategy which used a questionnaire as the main research tool. A survey research was selected because a survey allows for the collection of a large amount of data from a sizeable population in a highly economical way. Surveys are based mostly on questionnaires; these data are standardized, allowing easy comparison; they are perceived as authoritative because it is easily understood and give the researcher more control over the research process (Cooper and Schindler 2008).

Travers (2013) asserts that surveys are conducted to establish the nature of an existing condition. According to Polit and Hungler (2011), the term survey designates any research activity in which the investigator gathers data from a portion of a population for examining the characteristics, opinions and intentions of that population. Sekaran (1992), states that a survey research answers the questions: Who, What, Where, How much and How many which are the kind of questions this research sought to answer.

The researcher wanted to comprehend the existing phenomenon that is prevalent in the waste management sector so as to determine how and to what extent the prevailing situation was impacting on the environment in Harare. Thus in this survey the researcher gathered information from enterprises in the collection and recycling of waste, big recycling companies as well the Ministry of SMEs, Ministry of Environment, Water and Climate, the EMA, Non-Governmental Organisations (NGOs) and City of Harare.
3.4 Research Instruments and Procedures

3.4.1 Unit of Analysis

Three groups of people were considered for the research; the recycling SMEs; big recycling companies and key informants who included EMA, NGOs, City of Harare and Ministry of SMEs and Ministry of Environment, Water and Climate.

3.4.2 Selection of Respondents

A population is the total group of people or entities from which information is required (Tustin et al., 2005). Sampling is the use of a subset of the population to represent the whole population. According to Smith T, (2013:207), the sample size represents the number of observations taken to conduct a statistical analysis and thus the larger your sample size, the more accurate your estimates.

In this research the research elements were obtained for the Environmental Management Agency’s (EMA) database of waste management enterprises and recycling companies. According to EMA (2014), there is a total of 61 registered waste management enterprises, and 14 registered large recycling companies. Due to the relatively small numbers, the whole population was considered in the study. The other reason for considering the full population was that the performance of waste management enterprises was to be analysed in a stratified form; with enterprises collecting and or recycling the same type of waste material considered as a cluster.

3.4.2.1 Purposive Sampling

This is a form of non-probability sampling method was used to select the key informants. With non-probability sampling, the researcher chooses the sample based on who they think would be appropriate for the study. This is used primarily when there are a limited number of people that have expertise in the area being researched (Tustin et al., 2005). The selected organisations were City of Harare, EMA, NGOs, and the Ministry of SMEs. The researcher selected 2 officials from each of the organisations for interviews.
3.4.2.2 Systematic Sampling

This is some form of probability sampling. This sampling method was used to select Pomona dumpsite respondents. The corporative has 250 members and unlike the other enterprises in the EMA database, it was difficult to interview everyone. The tenth member was selected as a respondent and in instances where the selected individual would refuse to participate, the next person was selected.

3.5 Data Collection Methods and Instruments

3.5.1 Survey

Self-administered questionnaires were used to gather data from recycling SMEs and big recycling companies. Questionnaires were used because they are economical in terms of time and money. Churchill (1998) describes a questionnaire as a booklet of structured standardised procedure, pre-coded and open ended questions that are used to collect information from the respondents. It can also be regarded as a data-collection instrument that sets out the questions to be asked in a formal way in order to produce the desired information.

Tustin et al. (2005) on the other hand refers to a questionnaire as a structured sequence of questions designed to draw out facts and opinions and which provides a vehicle for recording the data (Tustin et al., 2005). The questionnaires were self-administered to ensure all questions had responses and to ensure the right persons responded to the questionnaires. This was done to eliminate bias and ascertain correct views. The questionnaire was found to be suitable because it provided greater uniformity across research situations as respondents responded to the same standardized questions.

3.5.1.1 Structure of the Questionnaire

Most of the questions provided responses in the form of multiple choice responses and dichotomous responses. Dichotomous responses is the simplest form of closed-ended responses and allows only two possible responses which are normally opposing each other. Dichotomous responses generate nominal data for example, yes or no. For these responses to be valid, the answer must fall into one of the two categories (Tustin et al., 2005; Cooper & Schindler, 2003). Dichotomous questions were used where applicable because they are also
easy to answer by the respondents. Non-response error is reduced and analysis by SPSS is made easier (Cooper & Schindler, 2003).

Multiple-choice or closed questions offer more than two fixed-alternative responses. Respondents are asked to select responses that correctly express their opinion (Tustin et al., 2005; Cooper & Schindler, 2003). These were used in questions that were specific such as age, years employed and education level of respondents as well as in some areas that needed specific answers. The use of open-ended questions in the study was employed but to a limited extent. Open ended questions were used in cases where the researcher felt the need to capture a wide variety of people’s views and thoughts without influencing them and premeditating some of their responses as it is with closed ended questions. These are however, difficult to code and analyse, as the responses are not predetermined (Cant, 2003). This was so limited because it is more time consuming and may lead to non-response errors. However, open ended questions bring out some factors which may not be known to the researcher.

The element of anonymity in the research allowed respondents to answer questions truthfully and objectively as they were not asked to fill out their names or their company names.

3.5.2 Interviews

As previously stated, these were done for key informants, EMA, City of Harare and the Ministry of SMEs. Interview guides were used to gather information. The interviews enabled the researcher to get objective information on the performance of waste management enterprises and the challenges they face. Responses remained anonymous and confidentiality was highly observed.

The researcher used semi structured interviews to remain focused and avoid diversion. This tool however provided the platform to interrogate further in cases where the responses given needed clarification and further explanations. It allowed new questions to be asked during the interview to probe the topic further.

Interviews were done by means of face-to-face meetings in which the researcher provided clear explanations on the nature and the purpose of the research. The interviews were made reasonably short sessions, 15 minutes at most so as not to delay respondents.
3.5.3 Observation

The researcher also engaged in observation to get information. This was in the form of unstructured observations. This was done to remove bias as these allowed variables to be observed as streams of actions and events as they occur naturally. Picture cameras were used as tools to gather information for analysis purposes.

3.5.4 Document Review

Specific documents were reviewed to provide information for the research. These included EMA and City of Harare Annual Reports, the Institute of Environmental Studies’ Waste Management Baseline Report of 2011 and the City of Harare report on waste dumping and recovery at Pomona Dumpsite among other documents.

3.6 Validity of the Research

3.6.1 Construct Validity

The validity of the research was ensured through the validity of the instruments used. This was done through the review of the questionnaire and interview guides developed for related studies, for example a study on the challenges faced by SMEs in Zimbabwe by Nyoni (2008), Dzansi (2005), and Zindiye (2008); and two similar studies carried out in South Africa by Du Plessis, Jooste and Strydon (2005), and Nieman and Pretotius (2004).

3.6.2 Content Validity

The content validity, which refers to the validity of the data was ensured by thorough orientation in the theoretical literature within the field. To increase the validity of the study, multiple measures were employed to reflect the nature of the construct. As mentioned earlier, anonymity of the respondents was promised to ensure validity and reliability of the responses.

3.6.3 Triangulation

Besides the consideration of similar studies done, another form of triangulation adopted was the use of key informants. This is one way of triangulating via data sources. Their individual viewpoints and experiences were verified against others and, ultimately, a rich picture of the situation on the ground was ascertained.
3.6.4 Pilot Study

Pilot studies and pre-tests are used in research to test the design of the questionnaire and interview guide, adequacy of the sample, methods of data collection, the non-response rate and all the features of the study. The purpose of carrying out this study was to clear out difficulties in the main study. Polit and Hungler (1989) point out that pilot testing is an important step in ironing out questions that will be found to be ambiguous and confusing. A pilot study was done before the major study and 3 respondents were considered in each of the three units of analysis.

3.7 Data Presentation and Analysis

3.7.1 Editing of Data

Where necessary, responses from the questionnaire were edited. According to Cooper & Schindler (2003), editing involves a thorough and critical examination of the completed questionnaire in terms of compliance with the criteria for collecting meaningful data, and in order to deal with questionnaires not duly completed. Editing of data detects errors and omissions, corrects them where possible and certifies that the minimum data quality standards have been achieved. Therefore, the primary purpose of editing is to guarantee that data are accurate, consistent with the intent of the questions, uniformly entered, and complete.

3.7.2 Coding of Data

All the questions and responses were coded for efficient analysis. Coding involves assigning numbers or other symbols to answers so that responses can be grouped into a limited number of classes and categories. It assists the researcher to reduce a large number of replies into a few categories containing critical information required for analysis (Cooper & Schindler, 2003). This is a key step in SPSS analysis.

The information collected was presented through the use of bar graphs, pie charts and tables using Excel to allow the clear reading and analysis of information as well as clearly portraying the situation prevalent in Harare. Bar graphs were ideal in this regard as the height of the bars would clearly show the sector with the highest level of contribution by small and micro-enterprises to waste management. Pie charts were also used to portray the nature of
waste business. Tables were used to represent information such as the demographic characteristics of the respondents.

The Statistical Package for Social Scientists (SPSS), 22.0 was used by the researcher to analyze and make sense of the collected data. Chi-Square tests were also done to determine the relationship between cross tabulated variables such as the level of waste generation and collection. The use of chi-square associations between variables enabled an in-depth and informed analysis of the collected data. This allowed the researcher to see the correlations and associations of variables in a clear picture thus enabling the computation of objective conclusions.

3.8 Ethical Considerations

Several issues were taken into consideration to ensure that the study was conducted in an ethical manner. A cover letter was attached to the questionnaire, which explained to participants the purpose of the study. Participants were also informed that their participation was voluntary, they were free to withdraw from the study if they so wished. Authority to administer questionnaires to employees was first sought from their superiors. Furthermore, participants were assured of anonymity and privacy since they were not required to write their names on the questionnaire. Participants were also informed that it was not possible to provide individual feedback but a copy of the final research would be availed upon request. Above all, confidentiality was maintained since the researcher and the respondent were the ones who had access to the obtained information.

3.9 Conclusion

This chapter looked at the methodology that was used to collect data on the contribution of small and micro enterprises to waste management in Harare. The research design and sampling techniques applied were discussed. Questionnaires, interviews and observations were the main methods of data collection used to gather relevant data to achieve the research objectives. Data collection procedure, data presentation and analysis plan were also considered. In data presentation, both qualitative and quantitative methods were used. The next chapter presents and analyses the data.
CHAPTER 4: RESULTS AND DISCUSSION

4.0 Introduction
This chapter focuses on the research results and their interpretation. The research mainly targeted recycling SMEs operating in Harare and licensed with the Environmental Management Agency (EMA) to carry out recycling business. Questionnaires were distributed to SME and big recycling companies whereas interviews were carried out for key informants, the Ministry of Small and Medium Enterprises, EMA, City of Harare, Ministry of Environment, Water and Climate and NGOs that work with the recycling SMEs.

4.1 Respondents to the Research
A total of 60 recycling companies were targeted for the survey as per the database; however only 45 companies were found on the ground. Some of the companies were closed while some, for instance, scrap metal dealers and waste collectors have no permanent operating addresses. Of the 45 companies, 40 responded to the questionnaire. The 15 key informants responded well and provided all the answers required. The survey therefore had a 98% response rate which renders it representative of the target population.

Table 4.1: Respondents to the Research

<table>
<thead>
<tr>
<th>Targeted Respondents</th>
<th>Respondents Reached</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste management enterprises</td>
<td>25</td>
</tr>
<tr>
<td>Big recycling companies</td>
<td>5</td>
</tr>
<tr>
<td>Scavengers</td>
<td>10</td>
</tr>
<tr>
<td>Individual waste collectors</td>
<td>5</td>
</tr>
<tr>
<td>Non-Governmental Organizations, EMA, Ministry of Environment, Ministry of SMEs, City of Harare waste management department</td>
<td>3 per institution (15)</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
</tr>
</tbody>
</table>

4.2 Age of Respondents
The majority of respondents, 48.3% are between 31 and 40 years, 28.3% are in the age group of 21-30 years, 21.7% are above 40 years, whilst the minority (1.7%) is 20 years and below, table 4.3 refers. The age of the respondents in this study together with the age of the business
Figure 4.1 refers) is very important especially when relating age to experience in the waste management business. This is significant in that experienced respondents can provide a trend of how the operating environment has changed over the years. Most of the respondents in the study were more than thirty years old.

4.3 Age of the Business

The majority of the businesses (40.8%) have been in operation for between 6 and 10 years, 24.5% have been operational for between 1 and 5 years, 22.4% have between 10 and 15 years of operation whilst the minority (12.3%) have been in business for more than 15 years, figure 4.3 refers

Age of business

Forty percent of the business owners indicated that they were once employees in large recycling companies before they started their own businesses. Holt (2003) recommends that an aspiring entrepreneur's lack of experience may be overcome by working in a related business before starting a venture. Many business owners update their skills and knowledge through seminars and training programs. When an owner recognizes a personal shortcoming, it may be necessary to build a business team or join in partnership with someone with complementary skills.
4.4 Sizes of the Companies

Ninety five percent of the respondents constituted recycling SMEs while large companies constituted 5%; as per the database. The recycling SMEs in this instance also includes waste pickers at the City of Harare dumpsite, Pomona; corporatives as well as individual waste collectors. An SME as defined by the Ministry of SMEs (2002) is any enterprise with 75 employees and below.

The survey revealed that the waste management industry has been informalised as there are many small players in the business. Most of the large businesses in the industry provide a market for the small companies as they are the majority who engage in scrap metal melting and remodeling as well as plastic processing. Most of the small companies buy and sell scrap to large companies or produce pellets from plastics that are used by large companies to make plastic products such as buckets, black sheeting and plastic pockets.

4.5 Level of Education of Respondents

The majority of people employed in the waste management business (70%) have gone up to secondary school, 20% have reached primary education whilst the minority (10%) attained tertiary education, table 4.2 refers.

Table 4.2 Level of education of the respondents

<table>
<thead>
<tr>
<th>Level of education</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>20%</td>
</tr>
<tr>
<td>Secondary</td>
<td>70%</td>
</tr>
<tr>
<td>Tertiary</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Having an educated workforce is beneficial to the organization in that they contribute more to strategic decisions than those who are less educated (Holt, 2003). From the results, very few respondents had reached tertiary education. Also most of the enterprises do not have people responsible for managing the accounts of the business, dealing with human resources issues or marketing the products of their companies which could be a contributory factor to the enterprises’ poor performance. Furthermore in most of the small companies the owners are the ones responsible for all the business operations which creates a risk of the owners using...
all the business capital and profits for personal use without investing some of the money for the growth of the business.

4.6 Professional Training in the Sector
According to (Justin et. al., 2008), recycling enterprises and waste collectors mainly comprises of the poor, widows, and or school leavers who do not have the adequate skill to run business. As revealed earlier, because the majority of enterprises have not reached tertiary education, it is necessary that they undergo training to acquire the necessary skill. However, the research revealed that most of the respondents, 75.5% had not received any training on business management while 24.5% said they had been trained. Most of the respondents who have been trained indicated that they had been funded by their organisations whilst some of the respondents were trained by mining companies who train all their clients in waste handling and processing before doing business with them.

The respondents revealed that they had never worked with the Ministry of Small and Medium Enterprises before in their operations, the institution that is responsible for capacitating SMEs in their business both though training and resourcing. Officials from the Ministry of Small and Medium Enterprises revealed that they have a programme for small companies but were cash strapped and as such were not able to fund workshops and seminars for them let alone lend them money to boost their businesses.

The need to acquire business management skills to foster the success of businesses was also stressed by Bezuidenhout (2002) who introduced another dimension of entrepreneurship, where he states that characteristics of successful entrepreneurs include ‘good genes’, family influences, education, experience etc. There are two schools of thought about entrepreneurship, some people argue that entrepreneurship is a trait that is inherent, it is not acquired, however some say an entrepreneur does not need specific inherent traits, but rather a set of acquired skills.

The Ministry of Environment, Water and Climate, Environmental Management Agency (EMA) and City of Harare Waste Management officials stated that recycling enterprises also needed training on proper waste management. They highlighted that these enterprises, in as much as they contribute to waste management by recovering waste, some of their activities also impact negatively on the environment. Mukuvisi River thereby polluting it while some
scrap metal smelting enterprises have ill designed smelters that contribute to air pollution. That shows a substandard aluminum smelting plant at Gazaland, Highfield, Plate 4.1 in the Appendix refers

4.7 The Recycling Value Chain

The study revealed that there is a four level hierarchy in waste recycling. Level 1 enterprises are those that collect raw materials from source and sell it as it is. The sources identified in the study include the Harare City council dumpsite (Pomona), shops in the CBD and companies that produce bulk waste materials. Plastic and scrap metal collectors revealed that they get some of their material outside Harare. Level 2 enterprises buy materials from Level 1 enterprises and sell to recycling companies. Level 3 enterprises buy materials from either level 1 or 2 enterprises and make middle products; in the plastic industry the products are pellets and chips; in the scrap metal industry the scrap is sorted and baled. Level 4 is the highest level of the hierarchy and entails the production of final products such as black sheeting, household plastic ware, irrigation pipes, metal bars etc. Figure 4.2 below gives an illustration of the hierarchy while figure 4.3 shows the proportion of enterprises in each level of recycling.

The Recycling Value Chain

- **Level 1**: Enterprises collect raw materials and sell
- **Level 2**: Enterprises buy raw materials from level 1 and sell
- **Level 3**: Process materials into middle products
- **Level 4**: Production of final products

**Figure 4.2: Recycling Value chain**

It was noted that SMEs in Harare can only process plastic and scrap metal to final products. Paper is shred and baled then supplied to big companies. The percentages of the enterprises in each level are given in the pie chart below.
Figure 4.3 Percentage of enterprises in each level of recycling

Level 4 in the hierarchy has the most number of enterprises but levels 1 and 2 have the highest number of individuals involved. Level 1 and 2 enterprises operate as co-operatives with a high number of people, for instance, one of the co-operatives (‘Kubatana’) that operates at the only City of Harare dumpsite in Harare has 250 members. Most individuals are able to collect and/or buy and sell because these activities do not need a lot of capital, machinery and operating space.

4.8 Type of Waste Material Collected by Recycling Enterprises

Different types of waste material are collected by various recycling SMEs in Harare. Most enterprises (52%) in Harare indicated that they collect and/or process scrap metal, 23% of the companies collect and/or process plastics, 21% collect paper whilst the minority 4% of the companies deal with bottles and cans.

Types of waste materials collected and/or processed by recycling enterprises

Figure 4.4: Types of waste material collected and/or processed by recycling enterprises
The research study revealed that there is no significant relationship between the type of waste collected and/or processed and its availability in the environment. A study carried out by the Institute of Environmental Studies (IES) in 2011 revealed that the majority of waste produced, 32% is biodegradable waste followed by paper, 25%, plastic 18% and metal 7% among other materials, figure 4.4 refers. If the availability of raw materials was the determining factor for the type of business venture, most enterprises would be in the composting industry, followed by paper, plastic, and metal in that order.

![Figure 4.5 Estimated mean composition of solid waste in Zimbabwe (IES, 2011)](image)

Most of the companies especially those located near big industrial areas deal with scrap metal as it is the most valuable material and it is also easy to work with. Household equipment, broken down vehicles and industrial machines all contribute towards scrap metal and it requires less processing before it can be used for other things unlike the other types of waste material. Thus many of the companies especially those in Gazaland, Willowvale, Southerton and Granite site concentrate more on scrap metal than other types of waste. The enterprises in the plastic industry indicated that plastics need to be cleaned first to reduce impurities before they can be sold to companies or processed which brings in a cost to its processing. They also indicated that, plastic processing requires sophisticated machinery and hence a lot of capital which is beyond reach for a simple SME thus very few companies are willing to engage in the business. Plate 4.2 in the Appendix shows one of the sources of raw material, Pomona dumpsite, where ‘dirty’ plastic is recovered in huge volumes among other raw material types. Waste collectors at the Pomona dumpsite indicated that paper is very difficult to find in its
clean state as it is mixed with other waste products making it unusable. Thus only 21% of the companies deal with paper as many of the companies cannot collect the paper on their own as it needs separation strategies. A big recycling company, National waste that was interviewed in the research indicated that they have put in place waste separation bins at various companies and institutions such as schools and clinics. They indicated that due to the decrease in productivity and the gradual shift to automation and the use of computers the supply for paper has dwindled resulting in less companies concentrating on waste paper processing. The company indicated that they bale some of the plastic for export while it processes some locally to final products such as tissue. These processes again need expensive machinery hence few SMEs can venture into the business. This gives the few companies that can do it a competitive edge over their rivals.

Only 4% of the enterprises indicated they collected bottles and cans and the reasons sited were that there was minimal market for the products and many large companies who provide a market for the products deal with their own materials for instance Delta processes its own bottles thus leaving little room for other small players to supply them with bottles or cans. Can collectors indicated that the price offered for it was too low: they highlighted that a ton of cans was purchased at $10, yet it is so difficult to collect so much.

4.9 Raw Material Suppliers
The majority of the enterprises (42.9%) indicated that they got their raw materials from individuals and corporatives, 40.8% collected from bulk waste producing companies and shops, 12.2 % from households whilst 4.1% of the companies got their waste materials from all the above sources, table 4.3 refers

<table>
<thead>
<tr>
<th>Raw Material Supplier</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Companies and Shops</td>
<td>40.8%</td>
</tr>
<tr>
<td>Individuals/co-operatives</td>
<td>42.9%</td>
</tr>
<tr>
<td>Households</td>
<td>12.2%</td>
</tr>
<tr>
<td>All of the above</td>
<td>4.1%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>
Small and medium waste management enterprises contribute a lot in waste management in that they are more willing to go through dumpsites to select waste materials such as dirty plastics which they clean and sell to large companies, this is indicated by the significant number (42, 5%) of individuals and corporatives that supply raw material. The waste collectors at Pomona indicated that they are licensed by City of Harare and they separate waste which they later sell to large and small companies.

4.10 Waste Collected and/or Processed Monthly

The majority of the respondents, 42% revealed that they collect less than 50 tons of waste per month, 27% of the companies collect between 50 and 99 tons, 15% collect between 100 and 500 tons, 10% collect between 600 and 1000 tons whilst the minority of the companies 6% collect more than 1000 tons per month, figure 4.6 refers

![Figure 4.6: Amount of waste collected/processed per month](image)

The amount of waste collected and/or processed by recycling SMEs per month is very important in this study as it gives us an indication of waste recovery in Harare. According to the information revealed by City of Harare (COH) officials, the city generates 85 000 tons of waste every month and 44000 tons of that waste is collected and dumped at Pomona dump site. At the dump site there are 250 scavengers according to the city records. The scavengers collectively collect 3375 tons of waste per month which is far less than the amount of waste dumped at the site every month. Their waste recovery rate is 7.6% per month. The level of waste generation for Harare was confirmed by the IES study of 2011 where it was stated that the proportion of collected waste is about 52% of that generated. It was important to verify this figure more than the amount of waste collected because COH can only measure the
amount of waste that is dumped at Pomona.

This section of the research also involved the statistics of large recycling companies in order to determine the potential of recycling enterprises in waste recovery, which is one of the research objectives. The respondents revealed that the amount of waste they collected and/or processed was not fixed but varies greatly during the month as some of them revealed that sometimes they spent the whole week without getting even a ton of waste especially those in the scrap metal business. The big companies interviewed indicated that they exceed 1000 tons per month for example, National waste and Wessec Sol who collect their own waste and also get supplies from many small companies, as indicated earlier. Many players in the scrap metal and plastic industries indicated that they supplied the Chinese and Pakistanis who are the major buyers of waste but information on the amount of waste they process could not be established as their premises were inaccessible. The four cooperatives that were interviewed only manage a paltry 1600 tons per month. Most of the cooperatives live ‘from hand to mouth’ as the price at which the material they collect is bought by large companies at very low prices, for instance individuals of Tisunungureiwo cooperative earn an average of $18 per week which translates to $72 per month which is very little but they strive on in order to make a living.

When the amounts collected by all the companies visited have been computed, it can be seen that all the large and small companies inclusive of cooperatives and individuals at Pomona are collecting far less than the amount of waste being generated in Harare as shown in table 4.4 below.

**Table 4.4: Total Waste Generation in Harare compared against waste recovery for recycling**

<table>
<thead>
<tr>
<th>Number of tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total waste generated in Harare per month 85 000</td>
</tr>
<tr>
<td>Waste collected by Large companies 15 400</td>
</tr>
<tr>
<td>Waste collected by recycling SMEs 4625</td>
</tr>
<tr>
<td>Waste collected by Cooperatives and individuals 4 975</td>
</tr>
<tr>
<td>Residue of un recycled waste 60 000</td>
</tr>
</tbody>
</table>

According to the results of the research it can be seen that the majority of waste is recovered
by large companies. Thus in this case the total amount of waste attributable to the small enterprises (small companies and individuals) amounts to 9600 tons whilst that which can be wholly attributable to large companies amounts to 15400 tons. A total of 60 000 tones is the waste that remains out of that collected by recycling enterprises. Thus when the large recycling companies and recycling enterprises are compared in terms of waste recovery from the environment; the SMEs remove 11% of the total waste generated in Harare whilst large companies remove 18% of the waste, table 4.5 refers.

Table 4.5: Analysis of waste recovery data

<table>
<thead>
<tr>
<th>Entity</th>
<th>Percentage (%) recovery against total generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste recovery by large companies</td>
<td>18%</td>
</tr>
<tr>
<td>Waste recovery by SMEs</td>
<td>11%</td>
</tr>
<tr>
<td>Waste recovery by recycling companies and SMEs (interviewed)</td>
<td>29%</td>
</tr>
</tbody>
</table>

Although small companies are contributing less than their large counterparts their contribution is very significant considering the conditions they operate in. Most of the small companies operate at a loss most of the times and their profit margin is very small as most of them earn 10% and below. The overall waste recovery rate measured against the total waste generated in Harare is 29% owing largely to the depressed economy. The recovery rate could have been higher and in the region of other countries if the industries were fully operational which tallies with research, where a study carried out by in Brazil, Kenya, India and Egypt revealed that waste management enterprises recover 80% of solid waste for recycling (Scheinberg, 2001).

The research also revealed that there is a remainder of 60 000 tones which is not recycled. A lot happens to this waste, the IES study indicated that of the waste generated 28% is buried, 11% burnt, 6% illegally dumped, while only 3% is separated, figure 4.7 refers
The study also states that 90% of the waste generated in the country is recyclable. This high rate of recovery is possible if materials are separated at source and there is no contamination of materials.

City of Harare indicated that they can only manage to collect 44000 tones against the generated 85 000 tons per month. This was attributed to the unavailability of resource within the local authority to fully carry out their mandate. The views of the local authority concurred with the assertion by Feresu (2013) that City of Harare, like many urban authorities in Zimbabwe is incapacitated to handle all the waste that is generated. Mubaiwa (2013) revealed that urban waste collection rates in Zimbabwe dropped from at least 80% in the mid-1990s to as low as 30% in some large cities and small towns by 2012. This also tallies with what was said by Scheinberg (2001) that, in many cities in the South, local authorities do not have the resources to collect and dispose of the waste. In these instances the gap left by municipalities has led to the autonomous development of the small and micro urban environmental sector that has seen and exploited a business opportunity to collect the waste, sweep the streets, recycle and or clean indoor and outdoor spaces (Scheinberg, 2001).

Another writer, Gunsillus (2008) adds that in many of these countries, informal waste pickers contribute significantly to waste management and resource efficiency by collecting, sorting, trading and processing waste. Informal waste enterprises constantly come up with adaptive strategies to access waste and do away with barriers while at the same time integrating new
systems as they emerge. This is the reason why many of the small waste management companies in Harare have continued to strive in an environment where large companies are closing due to economic hardships.

City of Harare indicated that the waste collectors at the Pomona Dumpsite help to level the waste and collect some of the usable material for processing and resale thereby helping to reduce the impact of waste on the environment. This is supported by literature; according to (Gerdes et al., 2010) the involvement of individuals and small and medium enterprises in waste management reduces the cost of managing waste by local authorities, waste accumulation in the environment and subsequently a reduction in waste volumes going to the landfill. By making recycling and composting possible, they also contribute to the reduction of greenhouse gases.

What we find in Harare suggests that there is need to develop strategies to improve waste recovery as literature from Gerdes et al. (2010) suggests that countries like Egypt, Brazil, and India have a high rate of recovery because they have adopted tailor made strategies to improve the business of waste management enterprises. The national and local government units in these countries have initiated partnerships with waste management enterprises for waste collection or recovery. Informal workers have been organized into cooperatives, manage sorting and recycling centers and provide the local or international recycling market with valuable materials. The workers integrated in cooperatives often earn 50-100% more than before the support measures.

4.11 Viability of SME Recycling Business

4.11.1 Profitability

Sixty five percent (65%) of the recycling SMEs indicated that they buy waste material at between $51-$100 per ton, 22% buy at between $101-$150, 8% buy at less than $50 whilst the minority of the companies buy materials at above $150 per ton. Many of the companies act as middleman between large companies and individuals and sell the waste material to large companies at a small profit. As depicted in table 4.6 most (44.9%) of the companies sell their waste material or products at between $101 and $150 per ton, 28.6% of the companies and individuals sell at less than $100, 20.4% of the companies sell at between $151 and $200 per ton whilst the minority of the companies sell at above $200 per ton.
Considering the upper limits for the majority of the enterprises for the buying and selling prices given in tables 4.6 and 4.7 above an enterprise earns a gross profit of $50 per every tonne of raw material collected and/or processed before deducting expenses such as labour, rentals and transport. As previously highlighted, the majority of enterprises indicated that they process less than 50 tons per month meaning their total gross profit would be 2 500 per month. This leaves the enterprise with a low net profit. The respondents could not disclose their net profit but from the sales given it can be concluded that the net profit per month is small.

The enterprises indicated that profitability of the business is low mainly because of market challenges. The small profits being earned by many of the enterprises in the waste management industry is hampering growth as most of the players in the industry cannot save money and thus are not able to expand their businesses. Also the worsening economic environment and the liquidity crunch being faced in the country has resulted in the dwindling of the market as companies are closing and downsizing operations resulting in small waste management companies having no choice but to accept the prices that are put on the table or close shop. Seventy percent (70%) of the enterprises stated that they have remained in the business because business alternatives are limited and there is generally lack of employment in the country.

The aggressive competition in the business has forced many waste management companies to accept low prices hence earning very low profit margins and others barely breaking even. Most of the companies which have large profit margins indicated that they collect their own waste and also buy some from smaller companies and process the waste into finished

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<table>
<thead>
<tr>
<th>Buying Price</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $50</td>
<td>8%</td>
</tr>
<tr>
<td>$51-$100</td>
<td>65%</td>
</tr>
<tr>
<td>$101-$150</td>
<td>22%</td>
</tr>
<tr>
<td>Above $150</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Selling Price</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $100</td>
<td>28.6%</td>
</tr>
<tr>
<td>$101-$150</td>
<td>44.9%</td>
</tr>
<tr>
<td>$151-$200</td>
<td>20.4%</td>
</tr>
<tr>
<td>Above $200</td>
<td>6.1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
products which have a higher value and thus get more returns. For instance a paper collecting enterprise sells a kg of paper for 6c to National Waste which processes it into tissue which fetches around $2 per kg. Thus the buyer enjoys a higher profit margin than an enterprise which buys and sells waste paper at less than 10c per kg. In the scrap metal industry an enterprise can buy scrap metal at $80 and sell it at $120 to a bigger company. However, an enterprise that buys scrap metal at $80 and adds value to it by manufacturing wheel burrows, three legged aluminum pots or scotch carts as was witnesses in Highfield will earn more profits as it can sell one scotch cart at $400 which can be made by less than a ton of scrap metal, plate 4.3 in the Appendix refers. Thus lack of innovation has also resulted in companies earning less profit and suffering competition.

4.11.2 Competition in Recycling Business

Fifty three percent of the enterprises indicated that competition for buyers in the business is aggressive. They stated that there are a few buyers in the industry most of which do not pay cash for materials. There is therefore price monopoly and the large number of enterprises competing against each other has reduced their bargaining power for higher selling prices. In Highfield, Gazaland, for instance, 10 small companies that are into buying and selling of scrap metal were found operating as individual entities at one scrap yard. Fifty one percent of the enterprises indicated that there is also competition for raw materials.

The respondents indicated that the market is dominated by the Chinese, Pakistanis and very few large companies, figure 4.8 refers

**Market for recycling SME products/materials**

![Market for recycling SME products/materials](image)

**Figure 4.8: Market for recycling SME products/materials**

In total, the Chinese and Pakistanis account for 84% of the buyers whilst the remaining 16%
is local companies. This disparity has resulted in monopolistic tendencies by the two where they employ a ‘take it or leave strategy’ when buying products/material from small and medium waste management companies.

4.11.3 Production Capacity
Very few companies (18.4%) indicated that they are operating at above 50% their operating capacity; the majority (26.5%) are operating at between 21 and 30%. The results show that business is depressed in the waste management industry. Table 4.8 below shows the production capacities of the recycling enterprises.

Table 4.8: Production capacity of recycling SMEs

<table>
<thead>
<tr>
<th>Production capacity</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating at less than 10% capacity</td>
<td>16.3</td>
</tr>
<tr>
<td>Operating between 11-20% capacity</td>
<td>18.4</td>
</tr>
<tr>
<td>Operating between 21-30% capacity</td>
<td>26.5</td>
</tr>
<tr>
<td>Operating between 31-40% capacity</td>
<td>10.2</td>
</tr>
<tr>
<td>Operating between 41-50% capacity</td>
<td>10.2</td>
</tr>
<tr>
<td>Operating Above 50% capacity</td>
<td>18.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

A small percentage of the recycling enterprises, 18.4% indicated that they produce large quantities of products such as metal rods and bars, plastic packaging material, bin liners, planting pockets and black sheeting among others. The respondents stated that the high shortages of raw materials, aggressive competition, presence of many regulatory bodies and high costs of licensing fees have increased their operating costs and hence reduced their production capacity.

4.12 Challenges Faced By Waste Management Businesses
The research established a number of challenges that affect SME recycling business in addition to those previously mentioned. The operational challenges affecting recycling
enterprises (figure 4.9) in their order of frequency starting with the challenge that was indicated by most enterprises are:

i. lack of finance,
ii. high production costs,
iii. lack of markets,
iv. lack of raw materials,
v. Failure to engage adequate human resource,
vi. Lack of business skill and
vii. Abuse of funds

Operational Challenges faced by recycling SMEs

Figure 4.9: Challenges faced by waste management enterprises

4.12.1 Lack of Finance, Human Resource and Business Management Skill

Ninety two percent of the enterprises highlighted that the major challenge they face is the lack of finance. Big recycling companies were included in this section of the research in order to evaluate the potential of the SME. It was noted that capital shortages have hampered the operations of waste management businesses regardless of size but small companies are more affected. Lack of finance has resulted in the companies having a bleak future and most respondents revealed that business was going down and this is worsened by a lack of markets and the low prices at which their products are being bought.

The lack of finance was seen to be a big hindrance to the operations of businesses and this has led to the inability of enterprises to attract skilled labour. Literature reviewed suggested
that small businesses generally employ individuals from the secondary labour market because they cannot pay as much wages as the big companies. Heraty (2005) stated that in the U.S., large firms pay wages that are 49% higher than small firms. Additionally, many small businesses struggle or are unable to provide employees with benefits they would be given at larger firms. Research from the U.S. Small Business Administration indicates that employees of large firms are 17% more likely to receive benefits including salary, paid leave, paid holidays, bonuses, insurance, and retirement plans than small business employees. Both lower wages and fewer benefits combine to create a job turnover rate among U.S. small businesses that is three times higher than large firms. Employees of small businesses also must adapt to the higher failure rate of small firms Heraty (2005).

However, only 31% of enterprises cited that they lack human resources challenges. It was noted that most recycling enterprises rely on casual labor, hiring labour as and when necessary. This is common with the low level recycling enterprises who do not require specialised skill. They indicated that casual labour is cheaper for them and readily available. It can be concluded that recycling SMEs do not value skill in operating their business because the majority stated that human resource was not a challenge yet 80% of the enterprises cited that they do not have personnel in the areas of marketing, accounting, and human resources. In these enterprise, the owner occupies all fields.

This assertion is supported by the fact that only 14% of the recycling enterprises confessed to the lack of business management skills. However, literature (Holt, 2003) reveals that the lack of business skills was noted to be a big problem in small waste management businesses as the owners usually perform all the varies tasks on their own without employing personnel skilled in the various business sections which is partly influenced by lack of finance.

Holt, (2003) also adds that small business owners often keep their own books and do their own accounting but most of them neither have the time nor the inclination to become experts in accounting. They may use personal computers to track inventory and do a bit of word processing but rarely care about knowing computers. They will think strategically but not develop strategic plans and be concerned about market demand but not engage in market research. In most instances, they do things required to survive tomorrow and to compete next week. The writer adds that this sense of immediacy coupled with a disregard for management concepts has been a major contributor towards the failure of small businesses.
4.12.1.2 Relationship between Financial Challenge and Size of Company

A Chi-square test was carried out to determine whether financial challenges are affecting both business scale; the large companies and the SMEs. A significant value (0.075) was obtained which indicated that financial challenges affect both business scales; Table 4.10 refers. Financial challenges being faced by waste management industries are sector specific and as such all the companies in the waste management industry are hit hard by a lack of capital for their operations.

Table 4.9: Chi-Square tests for size of company and lack of finance

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>6.919a</td>
<td>3</td>
<td>.075</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>8.265</td>
<td>3</td>
<td>.041</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>4.701</td>
<td>1</td>
<td>.030</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>49</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

However, the likelihood ratio test gave a significant value of 0.041 which is less than the expected significant value of 0.05 which shows that there is a likelihood that smaller companies will have more financial challenges than large companies.

From the two tests that were carried out it can therefore be concluded that the lack of finances is a crosscutting problem and as long as the current economic conditions exist both the large and small companies will be affected.

4.12.2 High Production Costs

A significant percentage, 77.5% cited high production costs as a major challenge. Electricity, transportation and rentals among other costs were said to be too high. They also stated that the cost of licensing is too high as there are too many regulatory authorities that they have to be licensed with. This increases the costs of operating the business and ultimately the costs of production resulting in businesses having very small profit margins. Some enterprises highlighted that there is need for a regulatory authority that will govern prices in the industry.
so that large companies do not offer ridiculously low prices that hinder the effective operation of their businesses.

4.12.3 Lack of Raw Materials

Seventy four percent of the enterprises cited the lack of raw materials as one of the major challenges they face. The enterprises highlighted that the number of waste collectors has increased in Harare hence there is high competition for raw material. This challenge however can be overcome if the SMEs become innovative and tap other sources such as the residential areas. Literature reviewed showed that the availability of raw materials is projected to increase by 30% from 2011 to 2030, figure 4.10 refers (Tevera, 2012).

4.12.3.1 Projected waste generation in Zimbabwe

![Projected waste generation in Zimbabwe](image)

**Figure 4.10**: Projected annual solid waste generation for the whole nation and for the urban population in Zimbabwe using 2011 generation as the baseline (Tevera, 2012).

The statistics by Tevera (2012) indicate the increased potential for raw material availability and hence productivity and business performance in this regard. The availability of raw materials results in a decrease in competition for materials thus higher profit margins for the enterprises.

4.12.4 Abuse of Funds

Of the enterprises interviewed, 16.2% cited the abuse of funds as a challenge in their business. The percentage could be higher but no business owner would admit that they abuse funds. The 16.2% that stated this challenge was there were not the business owners.
4.13 Conclusion

In conclusion the three major objectives of the research were met and the results generally showed that the level of waste recovery by recycling SMEs is currently low. However, there is potential for improvement if the identified challenges are dealt with.
CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction
The previous chapter presented the analytical comparison between theory and collected data. This section looks at the research conclusions and recommendations. The research focused on the operations of waste management enterprises in Harare with the major objectives being to establish the level of waste recovery, the potential of recycling enterprises and the operational challenges they face. The research objectives were met and all the questions answered.

5.1 Summary of Major Findings
In Summary, the research aimed at determining the level of waste recovery by recycling SEMs from the environment and establish their potential in this regard; determine the viability of SME waste recycling business as well as identifying the operational challenges that these enterprises are faced with in their businesses. The objectives were successfully achieved with the conclusions that current waste recovery rate by recycling enterprises stands at 11% which is relatively low. This was attributed to a number of factors which include the fact that their businesses are not viable, there is aggressive competition among the small players in the industry and low markets. There is monopoly among the buyers and hence price of SME products are very low. Additional major challenges that affect recycling business is the lack of finance, high production costs, and inadequate raw material.

5.2 Conclusions
It can be concluded that men form the majority of recycling SMEs and that most recycling enterprises are located in Gazaland, Granitesite, Southerton, Willowvale, Masasa and Mbare. The recycling business hierarchy starts with collection of materials at source, baling of materials for export or processing of materials into middle products which are supplied mainly to Parkistan and Chinese markets within the city. The majority of raw materials, 40% is obtained from commercial/industrial areas and shops followed by individuals and cooperatives and lastly households.

5.2.1 Conclusion on Objective 1
Objective: To investigate the level and potential of waste recovery by recycling SMEs in Harare
It was established that the greatest proportion (52%) of recycling SMEs are into collection and processing of scrap metal followed by plastic, paper and bottles and cans in that order. The determining factor for the business model is the cost of processing the materials more than the availability of the raw materials. The research also revealed that the majority of waste management enterprises collect less than 50 tonnes per month while recycling companies can reach 1000 tonnes per month. The total amount of waste attributable to small companies and individuals amounts to 9600 tons per month whilst that which can be wholly attributable to large companies amounts to 15400 tons per month against a total generation of 85 000 tons per month. Waste recovery by the small players therefore was pegged at 11% while that by large companies was estimated at 18% giving a 29% total waste recovery in Harare. The recovery rate of recycling enterprises is 7.6% of the waste dumped at Pomona dumpsite (44000 tonnes). Recycling SMEs therefore can grow more than 20 times their current capacity if the challenges identified in the study are rectified.

5.2.2 Conclusion on Objective 2
Objective: To determine the viability of recycling business in Harare
It was concluded that recycling SME business is currently not viable which is largely owed to the prevailing economic conditions that have brought about an array of operating challenges in addition to SME characteristics such as the lack of skill to manage business and the lack of innovativeness among other issues. The majority of recycling enterprises are operating at 21-30% capacity and earning a gross margin of less than $2 500 per month.

5.2.3 Conclusion on Objective 3
Objective: To identify the operational challenges that recycling SMEs face.
Recycling enterprises are faced with a wide array of operational challenges. However, it was noted that the challenges that affect small and large scale companies are the same, the only difference is the magnitude. The challenges ranked in their order of severity starting with the challenge that is affecting the enterprises the most were identified as: lack of finance, high production costs, lack of markets, lack or raw materials, failure to engage adequate human resource, lack of business skill and abuse of funds. The last two challenges were given bigger weighting by the key informants than was given by the enterprises themselves.
5.3 Recommendations
The research revealed that recycling SMEs have the potential to recover a significant amount of solid waste but they are faced with a lot of challenges. There are challenges that can be dealt with by the enterprises themselves and some that need the intervention of policy and some government institutions. There is generally need to improve institutional capacity of recycling SMEs so that they become competitive both in the local market and globally. Support activities ought to range from policy initiatives, technical capacity building, and financing among other numerous and significant interventions. Below is a discussion of the key factors that should be considered as recommendations for improved business.

5.3.1 Supportive Policy Frameworks
The success of waste management and recycling as a business is largely dependent on Policy. The government and all responsible authorities need to appreciate and embrace recycling as a solution to waste management first then formulate policies that support the business. Local authorities need to embrace and support ‘separation at source’ initiatives and each responsible institution has to play its part.

5.3.2 Innovation by SMEs
On the part of the enterprises, they need to be innovative. To reduce cost of raw material, they may need to collect on their own or set up collection points at potential sources. Residential areas are a potential source that hasn’t been adequately tapped. This will significantly improve waste recover because some companies indicated that they sometimes import some raw materials, for example, plastic pellets from South Africa.

5.3.3 Market Research and Value Addition
As the SMEs grow, they need to consider value addition and strive towards making final products like the big recycling companies. This improves business returns. Good marketing skills are required for the smooth running of the business. Marketing involves a lot of issues from raw material identification, and acquisition, product development, product quality, identification of markets and meeting demand. Market research if well done will cover all these aspects and the business will make products that will satisfy the consumer. Once consumers are satisfied, their relationship with the business will be enhanced and the customers will develop from being occasional buyers to clients then partners. Like the
popular saying goes ‘Customer is King’; a customer determines the success or failure of the business. The business should consider the expectations of the customer.

5.3.4 Marketing Strategies
Most of the products of recycling enterprises are supplied to the local market because the producers have not been able to penetrate the global market. There is need for the enterprises themselves and the responsible government departments to develop a comprehensive marketing strategy for SMEs in general. The Government through the Ministry of SMEs should also provide a link between recycling enterprises and the global market. This should be done through advertising and assisting SMEs in exporting their products. The cost of exporting is too high for SMEs to meet. Advertising should be done through ICT; a website can be opened for SMEs where they can market their products.

5.3.5 Skills Development
The enterprises should be well acquainted with the managerial functions that have an effect on the performance of their businesses. These managerial functions include skilled personnel, financial management skills, planning skills, customer care, marketing knowledge and skills and knowledge of human resources practices. Management is crucial in the operations and growth of business ventures. The enterprises need to understand how a business is run, how finances are managed, issues of inventory, investment as well as accessing finance, just to mention a few. The inability of SMEs in general to properly run businesses has been one of the factors that have affected investment in the sector. Financiers are interested in return on investment. NGOs for instance carry out due diligence prior to supporting projects to ensure that their investment brings out a positive impact. Most enterprises fail at this level. Recycling business is generally common with school leavers, the widowed and the vulnerable who in most instances are not educated. There is therefore need for the Ministry of SMEs to invest in training and monitoring of the activities of recycling SMEs.

5.3.6 Capacity Building
The government should consider how other countries have succeeded in capacitating their recycling enterprises so that lessons learnt can be adopted to improve recycling business in Zimbabwe. In order to support skills development for example, the Government of India has established a network of entrepreneurship development organisations, including 3 national level institutes, for imparting entrepreneurial training and education. The institutions work
closely with the local industrial associations. The Government of India also provides financial assistance for surveys, studies, participation in foreign exhibitions, business conferences, marketing assistance, and general SME development programmes.

5.3.7 Technical Expertise
The Zimbabwean government, through the Ministry of Education, must also make use of Vocational Training Colleges and Polytechnic Colleges to develop programmes which could assist SMEs in developing their skills. They can initially start in the larger Metropolitan areas and then expand it to small towns. Furthermore there is need to establish SME consulting and training centres in certain areas or provinces to assist SMEs with their challenges. The number of centres will be determined by the number of SMEs in a specific city.

5.3.8 Recognition and Registration
The recycling SME sector needs to be formalized. The Ministry of SMEs first needs to update their database of recycling SMEs as most of them are not registered. Formalisation will ensure good management structures and systems among the enterprises. The Formalisation process involves registration, licensing, opening bank accounts, business record keeping, and joining associations that look after their common interests. There is need to rope in all key stakeholders in this process for it to be successful, for instance, banks should consider reducing account operating fees on accounts held by small businesses so as to encourage SMEs to come into the formal banking system.

5.3.9 Responsive Regulations
There are a number of legal and regulatory impediments faced by recycling SMES, the process is restrictive, bureaucratic, duplicated, centralised, time consuming and costly. It discourages investments and growth in the sector. The regulatory framework needs to be harmonised to remove barriers of entry into this business and encourage registration of more recycling SMEs if waste recovery is to be improved. Local authorities can cooperate by formulating SME supportive bylaws, charge reasonable license fees and levies.

5.3.10 Financial Support
The Government of Zimbabwe has made a lot of efforts in establishing structures for the financing of SMEs through the establishment of such institutions as SEDCO, Empretec, and
UNIDO, the ILO arms, among several other institutions. These institutions are incapacitated to carry out their mandate hence the need to source foreign investment into the sector. There is also need for an institution that will guarantee viable small businesses so that they can borrow from banks and access credit from suppliers. Also, a more significant allocation of the budget to recycling SMEs should be considered as waste management and empowerment are among the priority issues in the Zimbabwe Agenda for Sustainable Socio Economic Transformation (ZIMASSET).

5.4 Area of Further Research

A potential area of research that was identified in this research is an investigation on coping mechanisms for recycling enterprises. Regardless of the many challenges they face, the enterprises have remained in the business.
6.0 REFERENCES


7.0 APPENDIX

7.1 Recycling Enterprises’ Pictures

Plates 7.1.1 & 7.1.2: Substandard aluminum smelting plant at Gazaland and big plastic processing machinery belonging to a big recycling company in Masasa.

Plates 7.1.3 & 7.1.4: Waste recovery at Pomona dump site and cleaned plastic ready for processing.

Plates 7.1.5 & 7.1.6 Plastic pellets and final products made from scrap metal
Plate 7.1.7 & 7.1.8: Scrap metal collection by waste pickers, products from scrap metal

Plates 7.1.9 & 7.1.10 Plastic bottles collected for recycling

Plate 7.1.11 Glass collected for sale by waste collectors
7.2 QUESTIONNAIRE

SECTION A: DEMOGRAPHIC INFORMATION

Area of operation......................................................................................................................

Sex: Male ☐  Female ☐

Age: Less than 20 ☐  21-30 ☐  31-40 ☐  above 40 ☐

Level of education: Primary ☐  Secondary ☐  Tertiary ☐  No education ☐

Age of business…………………………….Designation of respondent………………………….

SECTION B: WASTE MANAGEMENT ISSUES

1. What kind of waste do you collect/process?
   Paper ☐  Scrap Metal ☐  Plastic ☐  Can ☐  Bottles ☐
   Other.................................................................................................................................

2. What do your business processes entail?
   Collection of plastic ☐  Production of pellets ☐  Production of plastic pockets ☐
   Production of black sheeting ☐  Collection of paper ☐  Collection of glass ☐
   Collection of cans ☐  Waste Collection for disposal ☐  Smelting of scrap metal ☐
   Other.................................................................................................................................

3. Where do you get your raw material from?........................................................................

4. Do you collect on your own or it is supplied........................................................................

5. If you collect on your own, where do you collect from?

6. How much of the collected/processed material comes from Harare............................

7. How many tonnes of raw material do you collect/process per week/month?.....................

8. How much do you buy the raw material? ...........................................................................

9. How much do you sell your product at..............................................................................

10. Do you have a market for your product? Yes ☐  No ☐  Yes but minimal
   a) If yes, how big is your market base
      1 Company ☐  2 companies ☐  3 companies ☐  4 companies ☐  > 4 companies ☐
      other........................................
   b) Which companies are these?.........................................................................................


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11. If No, what can you attribute the lack of markets to…………………………………………………
12. Who are your competitors, name them?……………………………………………………………………
13. How can you rate the competition in the business
   Aggressive ☐ Not Aggressive ☐
14. How many employees do you have in your business…………………………………………………………
15. Is there a marketing/sales person? Yes ☐ No ☐
16. Is there an accounts person? Yes ☐ No ☐
17. Is there an HR manager? Yes ☐ No ☐
18. Have you ever attended any business management workshop or seminar? Yes ☐ No ☐
   a)If yes who or which organisation funded the seminar or workshop?............................
19. At what capacity are you operating (%)…………………………………………………………………….
20. What can you say about the regulatory environment in Zimbabwe? What impact has it had on your business………………………………………………………………………………………….
21. What operational challenges do you face?
   Lack of capital or financial resources? Strongly agree ☐ Agree ☐ Strongly Disagree ☐ Disagree ☐
   Lack of raw material? Strongly agree ☐ Agree ☐ Strongly Disagree ☐ Disagree ☐
   Lack of business management skill? Strongly agree ☐ Agree ☐ Strongly Disagree ☐ Disagree ☐
   Abuse or improper handling of finances? Strongly agree ☐ Agree ☐ Strongly Disagree ☐ Disagree ☐
   High production costs? Strongly agree ☐ Agree ☐ Strongly Disagree ☐ Disagree ☐
   Lack of markets? Strongly agree ☐ Agree ☐ Strongly Disagree ☐ Disagree ☐
   Lack of machinery/equipment? Strongly agree ☐ Agree ☐ Strongly Disagree ☐ Disagree ☐
   Inadequate human resource? Strongly agree ☐ Agree ☐ Strongly Disagree ☐ Disagree ☐
   Other………………………………………………………………………………………………………………
21. What do you think can be done to improve your business; at company level and at government and /or policy level……………………………………………………………………………………..
INTERVIEW GUIDE: CITY OF HARARE,

1. What is the role of recycling enterprises in providing a clean environment for Harare residents?
2. What is the volume of waste generated and or collected in Harare?
3. How much waste is collected?
4. What type of waste is collected by waste management enterprises from the environment?
5. What is the volume of waste collected by waste management enterprises?
6. How many waste collectors operate at the Pomona Dumpsite?
7. How much waste does each individual recover?
8. What operational challenges are waste management enterprises faced with?
9. What are the contributory factors to these challenges?
10. How can these challenges be reduced or solved/ how can the profitability of these enterprises be enhanced?
11. What strategies can be put in place to improve waste recovery for recycling in Harare?
12. Do waste management enterprises have potential to grow; to what level can they grow?
13. What licences do waste enterprises need to operate; from collection to recycling and how much is charged for each licence?
14. Do you think waste management enterprises have the requisite know how to run their businesses?
15. Where do you see waste recycling business in ten years?

INTERVIEW GUIDE: MINISTRY OF SMES, MINISTRY OF ENVIRONMENT, EMA

1. How many recycling SMEs are registered with your institution?
2. What has been your involvement with waste management SMEs?
3. What operational challenges are being faced by waste enterprises?
4. What are the contributory factors to these challenges?
5. How can the challenges being faced by these enterprises be reduced or solved and how can the profitability of these enterprises be enhanced?
6. Do you think SMEs have the requisite know how to run their businesses?
7. Do waste management enterprises have potential to grow; to what level can they grow?
8. Do you conduct business management seminars or any kind of training for small and micro- waste management companies
9. If yes, of what benefits are they to the businesses?
10. If no, can you give reasons
11. Which are the licenses that these businesses need to operate and what is the price of each?
12. Where do you see waste management enterprises/ SMEs in the next ten years.