



Table of Contents

APPROVAL FORM	ix
ACKNOWLEDGEMENTS	xii
ABSTRACT	xiii
ACRONYMS	xiv
CHAPTER ONE	1
THE PROBLEM AND ITS SETTING	1
1.0 INTRODUCTION	1
1.1 BACKGROUND OF STUDY	2
1.1.1 Environmental Management Agency (EMA)	2
1.1.2 Presidential Awareness Campaign	3
1.1.3 Environmentally Friendly Organizations and Other Stakeholders	4
1.3 STATEMENT OF THE PROBLEM	5
1.4 RESEARCH OBJECTIVES	6
1.5 RESEARCH QUESTIONS	6
1.6 ASSUMPTIONS OF STUDY	7
1.7 SIGNIFICANCE OF STUDY	7
1.7.1 Scholarly Significance of Study	7
1.7.2 Practical Significance of Study	8
1.7.3 Personal Significance of Study	8
1.8 DELIMITATIONS	9
1.9 LIMITATIONS	9
1.10 DEFINITIONS OF KEY TERMS	9

CHAPTER 2	10
LITERATURE REVIEW	10
2.1 CONCEPTUAL FRAMEWORK	10
Figure 1: Conceptual Framework	11
2.2 THEORETICAL FRAMEWORK	12
2.2.1 Social Cognitive Theory	12
2.2.2 Theory of Planned Behaviour	13
2.3 ATTITUDES AND BEHAVIOURS TOWARDS ENVIRONMENTAL LITTERING	14
2.4 IMPACTS OF ENVIRONMENTAL LITTERING	17
2.4.1 Health and Healthcare	17
2.4.3 Environmental Pollution and Degradation	19
2.4.4 Normalization of Environmental Littering	19
2.5 CURRENT MEASURES ON MITIGATING ENVIRONMENTAL LITTERING	20
2.5.1 City Of Harare Municipal on Environmental Littering	22
2.5.2 Current Law Enforcement on Environmental Littering	23
2.5.3 Current Efforts by Anti-Litter Awareness Campaigns	23
2.5.4 Current Dissemination of Information on Littering	24
2.6 MEASURES IN MITIGATING ENVIRONMENTAL LITTERING	24
2.6.1 Environmental Awareness Education	24
2.6.3 Enforcement of Laws and Regulations	26
2.7 EMPIRICAL EVIDENCE	27
2.8 KNOWLEDGE GAP	27
2.9 CONCLUSION	28

CHAPTER 3	29
METHODOLOGY	29
3.1 INTRODUCTION	29
3.2 RESEARCH PARADIGM	30
3.2.1 Critiques of the Pragmatism Philosophical Approach	31
3.2.2 Justification of Methodological Choices	31
3.3 RESEARCH DESIGN	32
3.3.1 Advantages of Descriptive Research Design	33
Figure 3.1 Modified Descriptive Research Design	34
3.3.2 Disadvantages of the Descriptive Research Design	35
3.3.3 Justification of the Descriptive Research Design	35
3.4 POPULATION	36
3.5 SAMPLE POPULATION	37
3.5.1 Advantages of Simple Random Sampling	38
3.5.2 Disadvantages of Simple Random Sampling	38
3.5.3 Justification of Simple Random Sampling	38
3.5.4 Advantages of the Purposive Sampling Method	39
3.5.5 Disadvantages of the Purposive Sampling Method	39
3.5.6 Justification of the Purposive Sampling Method	39
3.6 RESEARCH INSTRUMENTS	40
3.6.1 Questionnaire Survey	40
3.6.2 Advantages of the Survey Questionnaires	41
3.6.3 Disadvantages of Survey Questionnaires	41
3.6.4 Interviews	42

3.6.5	Advantages of Interviews	42
3.6.6	Disadvantages of Interviews	43
3.6.7	Justification of the Measurement Tools	43
3.7	RELIABILITY AND VALIDITY	43
3.7.1	Reliability of the Study	44
3.7.2	Validity of the Study	45
3.8	RESEARCH ETHICS	45
3.8.1	Informed Consent	46
3.8.2	Confidentiality	46
3.8.3	Protection from Harm	46
3.8.4	Briefing	47
3.8.5	Debriefing	47
3.9	DATA PRESENTATION, INTERPRETATION & ANALYSIS	47
3.9.1	Data Presentation	47
3.9.2	Data Description	47
3.9.3	Data Analysis	48
3.10	CONCLUSION	48
CHAPTER 4		49
PRESENTATION, INTERPRETATION & ANALYSIS OF DATA		49
4.1	INTRODUCTION	49
4.2	PARTICIPANTS BIO-DATA	49
Table 4.1	Gender	49
Table 4.2	Age	50
Table 4.3	Nature of Employment	50
Table 4.4	Level of Education	51

Table 4.5	Place of Residence	51
4.3	FINDINGS PRESENTATION, INTERPRETATION & ANALYSIS	52
4.3.1	ASSESSING UNDERLYING LITTERING ATTITUDES AND BEHAVIOURS AMONG THE RESIDENTS OF HARARE	52
Table 4.6	Frequency of Littering	52
Table 4.7	Importance of a Clean Environment to Residents	52
Table 4.8	How Participants Feel about Litter in the Environment	53
Table 4.9	Handling of Rubbish When Rubbish Bins Are Not Present	54
Table 4.10	Rubbish Handling While Travelling in Vehicles with no Rubbish Bins	55
4.3.1.1	Overall Analysis of the Littering Attitudes and Behaviours of Harare Residents	56
4.3.2	ASSESSMENT OF AWARENESS ON IMPACTS OF ENVIRONMENTAL LITTERING	57
Table 4.11	Prevalence of Litter in Respective Communities	57
Table 4.12	Environmental Awareness on Littering Impacts	58
Table 4.13	What Residents have Learnt from the Awareness Information Received	59
Table 4.14	Residents Knowledge on Impacts of Environmental Littering	59
Table 4.15	Mode of Access to Awareness Information on Environmental Littering	60
Table 4.16	Anti-Littering Advocacy in Communities	61
Table 4.17	Who Speaks Against Littering in Your Community	61
4.3.2.1	Overall Analysis on Awareness on Impacts of Environmental Littering	62
4.3.3	ASSESSMENT OF EFFECTIVENESS OF CURRENT EFFORTS BY ANTI-LITTER ENVIRONMENTAL STAKEHOLDERS	63
Table 4.18	Participation in Clean-Up Awareness Campaigns	65
Table 4.19	Possibility of Participation in Future Clean-Ups	67
Table 4.20	Awareness on Law Enforcement of Fines or Arrests for Littering.....	68
Table 4.21	Number of Individuals Fined or Arrested for Littering	68
Table 4.22	Provision of Binfastructure in Churches	70
Table 4.23	Provision of Binfastructure in Schools	71
Table 4.24	Provision of Binfastructure in Workplaces	71
Table 4.25	Provision of Binfastructure in Parks	72

Table 4.26	Provision of Binfrastructure along Main Roads	73
Table 4.27	Provision of Binfrastructure in Shopping Centers	74
Table 4.28	Provision of Binfrastructure in Residential Streets	75
Table 4.29	Provision of Binfrastructure in Gathering/Events Places	76
4.3.3.1	Overall Analysis on Effectiveness of Current Efforts by Anti-Litter Stakeholders	77
4.3.4	ASSESSMENT OF STRATEGIES TO ENSURE POSITIVE ATTITUDES AND BEHAVIOURS TOWARDS LITTERING	79
Table 4.30	Opinions on Arresting or Fines for Environmental Littering Violations	79
4.3.4.1	Overall Analysis on Strategies to Ensure Positive Attitudes and Behaviours towards Littering among Residents of Harare	83
4.4	DISCUSSION	85
4.4.1	Discussion on the Underlying Attitudes and Behaviours among Harare Residents	85
4.4.2	Discussion on Awareness of the Impacts of Environmental Littering	86
4.4.3	Discussion on Effectiveness of Current Efforts by Anti-Litter Stakeholders	88
4.4.4	Discussion on Strategies to Ensure Positive Attitudes & Behaviours	91
4.5	CONCLUSION	93
CHAPTER 5		94
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS		94
5.1	INTRODUCTION	94
5.2	SUMMARY	94
5.2.1	Chapter 1	94
5.2.2	Chapter 2	95
5.2.3	Chapter 3	95
5.2.4	Chapter 4	96
5.3	CONCLUSION	97
5.3.1	Conclusion on the Underlying Attitudes and Behaviours towards Littering	97

5.3.2	Conclusion on Residents' Awareness on the Impacts of Environmental Littering	98
5.3.3	Conclusion on Effectiveness of Current Efforts by Anti-Litter Stakeholders	98
5.3.4	Conclusion on Strategies to Ensure Positive Attitudes and Behaviours.....	99
5.4.0	RECOMMENDATIONS	100
	Figure: 5.1 Cost-Effective Strategic Action Plan on Environmental Littering	101
5.4.1	Individuals	101
5.4.2	Anti-Litter Agencies and Stakeholders	101
5.4.3	Law Enforcement	102
5.4.4	Area of Further Study	102
	REFERENCES	103

GSJ

Social Environmental Influences Towards Littering In Zimbabwe- A Case of Harare Province

Caroline Mudziviri

WOMEN'S UNIVERSITY IN AFRICA"



ABSTRACT

The aim of this study was to investigate the social and environmental influences towards littering in Zimbabwe. A mixed approach was used to collect data and vendors in Harare City were the target population. The researcher used both questionnaires and interviews to collect data. Research findings showed that high population density areas are more prone to littered environments; and the more a place is littered; the more the place attracts even more litter; while less people are likely to litter in cleaner environments. Socially speaking; attitudes and behaviours can be learnt from others which then influence certain behaviours to be highly prevalent. There are a handful of studies that focus on what the influencing attitudes and behaviours of littering are, in Zimbabwe; in the past decade. While its great insight to know the attitudes that drive the behaviour; there has been some knowledge gap in understanding what the influencing factors of littering attitudes and behaviours are; socially and environmentally.

ACRONYMS

GP General Population

GPS General Population of Study

CoH City of Harare

EMA Environmental Management Agency

RCAC Rugare Community Anti-Litter Committee

GSJ

CHAPTER ONE

THE PROBLEM AND ITS SETTING

1.0 INTRODUCTION

Environmental littering in Zimbabwe seems to have become culturally and socially accepted, as evidenced by huge amounts of litter just about everywhere in the environment, and frequently witnessing various age groups of people randomly throwing litter in undesignated places, as they go about their business, with no regard to the mess it creates. Environmental littering is waste that can include anything that can be discarded by humans after use, like bottles, glass, packaging materials, electronic waste, metal waste, etc. (World Atlas, 2018); causing environmental pollution and soil degradation. Some studies have been done to understand the influences of littering and some similarities in the responses pointed to the attitudes and behaviours responsible for environmental littering. While these attitudes and behaviours towards littering to name a few have been said to be as a result of; *“lack of ownership, expectance that someone is hired to clean up, and lack of nearby garbage disposal bins, etc.”*; much remains unknown about the root causes of such behaviours and attitudes; hence the need to further assess and understand the exact underlying social and environmental influences that drive normalizing littering in our communities. The human mindset is said to influence the attitudes, actions and behaviours we engage in. Social psychologists assert that an individual's thoughts, feelings, and behaviours are very much influenced by social situations. Essentially, people will change their behaviour to align with the social situation at hand (acumenlearning.com). The study hopes to provide more insight into the social and environmental influences on littering; and contribute to practical solutions that can be adopted at an individual level all the way to the collective in the quest to mitigate environmental littering.

1.1 BACKGROUND OF STUDY

Despite the efforts of Environmental Management Agency (EMA); the recently signed Presidential; “Once a Month National Clean-Up Day” of December 5th, 2018, and various efforts from other organized campaigns such as, Green Chikoro Campaign and Rugare Community Anti-litter Committee; Residents never seem to transform their littering behaviours; hence costing money to councils to hire more workers to clean up. Litter poses far reaching impacts on the health of the population, the animals, and causes environmental concerns to our waterways through contamination and blockage of waterways, thereby demanding increased diversion of tax money budget toward damage repairs; which could be avoided if the population mindset is transformed. Harare is the capital city of Zimbabwe and a metropolitan to Chitungwiza and Seke, and other nearby cities with populations that commute to the CBD daily, such as Norton, Marondera and Mazowe. The Harare population is around 1, 973 906, according to the 2017 census statistics (Zimstats, 2017). In an interview with a council representative of Harare City Council (2016) “800 tonnes of waste are collected every day in Harare. Perhaps the tremendous rise in environmental littering in Harare CBD, has been intensified by the economic hardships on the city council’s ability to provide adequate services, as some may argue. According to Herbelein (1972), a positive correlation between social norms and pro-environmental behaviour has been reported for correct waste handling (avoidance of littering). It is with the belief that the choice to litter begins with the individual, which is the basis of the need to study the individual underlying social and environmental influences that drive the attitudes and behaviours in normalizing littering in Harare CBD. Below is the current state of affairs with key anti-litter initiatives in Zimbabwe along with environmentally friendly stakeholders.

1.1.1 ENVIRONMENTAL MANAGEMENT AGENCY (EMA)

Zimbabwe has put in place a legislature to enforce law on violators under EMA through Environmental Management Act of 2002 - Ch. 20:27 sections 83. While the statutory instrument

is in place, there seems to be no enforcement of the law on violators in Harare CBD, which is a cause of concern if enforcement action is lacking as mandated and expected. EMA has a public website; however, there is very little information on the subject of environmental littering, for scholars, or public in general to track progress on tackling environmental littering as it lacks critical reporting on progress achieved since law was enacted, or current statistics on numbers of violators fined periodically, or challenges they are incurring in enforcing the law, and lack of progress is due to lack of resources to task. It can be concluded that there is notable reluctance on the subject of littering on the public website as well as no public visibility of EMA in Harare CBD. In an Interview with Kangata, a representative of EMA, (daily News 12/2015) he states,

“Clean-up campaigns the agency has been conducting have also not been effective enough since people just gather for, “Photo Moments” where participating groups or people just clean small places and get photographed and it ends there.”

He also advised they had arrested and fined 327 people for littering and numbers were still very low compared to the level of population going on.

EMA has recently made efforts however, by broadcasting on radio stations such as ZiFM, and grabbed the attention of callers on environmental recycling quizzes, (Midyear, 2019). This was a great awareness initiative to familiarize the public of the many roles of EMA, however there remains very little punch on addressing environmental littering concerns and issues we currently face.

1.1.2 Presidential Awareness Campaign

The President of the Republic of Zimbabwe, (President Emmerson Dambudzo Mnangagwa); recognizing the constitutional mandate to uphold environmental fundamental rights and freedoms which guarantee every Zimbabwean citizen; “the right to an environment that is not harmful to their health and well-being” (Constitution of the Republic of Zimbabwe, Section 73), initiated the “Once a Month Clean-up Campaign”, on December 5th 2018. The campaign calls for a clean-up of the environment surroundings; from workspaces, recreational spaces, vending sites,

residential, car parks and roads servitudes, in an effort to create the spirit of a clean, safe and healthy environment for the nation.

The campaign is done on the 1st Friday of each month, and it has gained traction with mainly organizations and the business community since its inception. The researcher has observed that; majority of the population who are not under some form of policing to ensure the once a day first Friday of the month is implemented; have been negligent and complacent, as people in the Harare CBD seem to be going on about their regular business on this particular day. While this is a great initiative, the issue of littering continues to be a problem, as the general population continues to litter. There continues to be much reluctance and resistance to follow through on upholding this day of cleaning. Much of the efforts to clean the environment, perhaps as a nation and not only in the Harare CBD, seems not a priority or taken seriously. The study hopes to assess the underlying social and environmental influences resulting in the GPS not responding effectively on a national campaign to keep a clean, safe and healthy environment.

1.1.3 Environmentally Friendly Organizations and Other Stakeholders

Even before the presidential initiative on environmental cleanliness; many other organizations that are anti-littering in Zimbabwe as well as other environmental friendly stakeholders have made efforts in introducing days out of their activities to clean the road servitudes, and communities in an effort to lessen the littering in the environment. While these initiatives bring awareness to the people involved in the cleaning or organizing such events; it remains a problem in bringing the observing population in general to adopt the spirit of encouraging such activities, or learning to adapt to treating the environment with kindness and litter free. Over time, some stakeholders have been dampened by the ever increasing litter and the lack of behaviour transformation to mitigate the littering issue. Such initiatives are normally seen with the participation of a few groups of Interact Clubs in certain schools; which still does not involve the school as a whole, therefore limiting the message of environmental awareness to a few

students who are directly involved with the activity.

Other organizations among other anti-littering stakeholders; such as, Green Chikoro Campaign have made efforts in the right direction to promote awareness of a litter free environment, by drawing up a set goal campaign targeted at schools in the Harare Province, with eventual spreading to all national provinces in 8 years. The campaign was geared at reaching 5 schools every week to a total of 240 schools in a year starting with the Harare metropolitan to teach on the impacts of environmental littering. The campaigns would also broadcast monthly updates of the Green Chikoro Programs through traditional marketing models and establish a Green Chikoro Club at every school in Zimbabwe, and running on the Moto; “A litter free Zimbabwe begins with you”. This initiative seemed to be a step in the right direction; however it seems the program faced challenges in implementation due to resources; in speculation, as it was to be mainstreamed into schools all over the country through the donations and funding from like-minded people. The lack of support for the cause can only show that the issue of environmental littering in our country is not of concern or of importance and very few citizens will sign up to donate to matters of the environment; perhaps due to a lack of understanding and awareness of the environmental impacts of littering or, the normalization of litter as culturally and socially accepted to the point of deeming it a useless cause.

It is against this background that the researcher seeks to uncover the root causes of the attitudes and behaviours by analyzing the underlying social and environmental influences toward environmental littering. The study will provide for critical findings that can benefit the formulation of strategic action plans by governing institutions; and provide for significant improvement on current governing policies, as well as efficient delegation of environmental littering tasks. It will provide a platform for further studies in the area of environmental littering to fellow researchers, anti-littering environmental agencies, and environmental friendly stakeholders. On a small scale; the study will hopefully help the GPS to begin thinking towards environmentally friendly behaviours and attitudes, and hopefully transform and foster positive behaviours that promote and create a clean, safe and healthy environment for all.

1.3 STATEMENT OF THE PROBLEM

The Harare CBD is the central commerce and commercial area for the majority of the population in the Harare metropolitan, and attracts a huge traffic of pedestrians, motor vehicles, vendors and so much more activity. Despite the efforts by EMA, City of Harare Council, and other environmental stakeholders to improve the littering problem; the City of Harare has remained challenged by litter. Currently, EMA stipulates in legislation Section 83 subsection 2; the imposition of penalties and fines against offenders who dump litter in violation of its provisions; however very little action is being taken against the offenders. The City of Harare deploys 6 trucks in the CBD at 10PM daily to clean the streets, yet by 10am the next morning, the streets seem untouched for months. Rubbish Bins have been placed on most of the CBD streets, yet even as some people are a centimeter away; they continue to drop rubbish on the ground. The Presidential Campaign signed on December 5th 2018 is being carried out monthly however; the majority of people in the CBD seem to be going about their usual business on the day, while the few engaged, clean a small area before dismissal. The fact that littering is heavily being practiced despite all the efforts to stop the behaviours is the driving force for the study to assess and analyze the underlying social and environmental influences towards the littering attitudes and behaviours.

1.4 RESEARCH OBJECTIVES

1. To analyze the underlying littering attitudes and behaviours among the residence in Harare
2. To assess the awareness of the general population in the Harare Province on impacts of environmental littering.
3. To assess the effectiveness of current efforts on awareness campaigns by Anti-litter environmental stakeholders in the Harare Province
4. To come up with strategies to ensure positive attitudes and behaviours towards littering among residents in Harare.

1.5 RESEARCH QUESTIONS

1. What are the underlying causes of littering attitudes and behaviours among residents in Harare?
2. To what extent is the general population in Harare Province aware of the impact of environmental littering?
3. How effective are the current efforts on awareness campaigns by anti-litter environmental stakeholders in Harare?
4. Which strategies can be put in place to ensure positive attitudes and behaviours towards littering among residents in Harare District

1.6 ASSUMPTIONS OF STUDY

Some of the major contributions to environmental littering in the researcher's opinion; are due to the lack of awareness of the damage litter has on the environment, health of self, the community, and the psychological effects of littering on the human mind. This lack of awareness and knowledge of the interconnectedness of the human and environment symbiosis translates into uninformed and detrimental behaviours and attitudes of non-caring, lack of ownership and accountability to our environment as a nation. The significantly increased prevalence of litter in the environment has somehow become the norm in Zimbabwe. New generations have been born and raised in this dilemma and grew accustomed to poor socialized behavioural attitudes and practices; where littering seems culturally and socially accepted. It is the researcher's belief that environmental littering is heavily influenced by a lack of education on the general population at an early age of grooming and development on the subject matter; resulting in poor practices. The researcher assumes that the population in general lacks awareness of the detriments of littering and deems nothing wrong, or unsightly about littering; to warrant a positive transformation in mitigating littering attitudes and behaviours; hence the purpose of the study to understand the underlying social and environmental influences towards littering.

1.7 SIGNIFICANCE OF STUDY

Although many studies have been made on trying to understand the attitudes and behaviours that drive littering; studying the social and environmental influences can help pin-point if the population in general (PG) is being driven to litter by socialized behaviours and attitudes or environmental limitations; which can then help identify areas of improvement in our educational curriculums & system, governing policies, laws enforcement and regulations, environmental management agencies, self-regulating behaviours and correction of habits to mitigate the environmental littering dilemma.

1.7.1 Scholarly Significance of Study

The study will help to contribute to the scholarly organ as reference to the study of social and environmental influences towards littering in Zimbabwe and to further future studies in the area of environmental littering, whether it's to compare if another city in Zimbabwe has the same social and environmental influences towards littering as the Harare CBD, or if it's to agree or disagree with the findings

1.7.2 Practical Significance of Study

Population of Study will benefit from awareness of study and will be naturally forced to think about the littering issue and hopefully desire to practice best practices towards the environment. City councils, communities in general, educational institutions, fellow researchers, governing institutions, law enforcement and environmental management stakeholders are all beneficiaries of the study in understanding the underlying social and environmental influences on littering to best curtail strategic tools in deterring environmental littering. Where social behaviours prove to be the problem; stringent law enforcement can play a role in enforcing the law, and governing institutions can pay more attention to the littering problem and put more resources in awareness campaigns, and policy improvements; while educational institutions can take more initiative in introducing an intensive lesson on environmental littering, thus bringing awareness and

grooming to schools to raise more socialized environmentally friendly generations.

1.7.3 Personal Significance of Study

The study helps to familiarize with the current policies, laws and regulations on environmental littering and the efforts other environmental friendly stakeholders have initiated thus far; as well as the support they will need from the general population to mitigate littering. It will help identify the gap in strategies used to overcome the problem of littering and the coverage it has in the general population to bring awareness of the detriments of littering. It will also answer some questions to why our Zimbabwe is litter infested as opposed to some other countries such as Namibia, USA, and most developed countries, as well as if we lack enforcement on laws or the strategic action plans that can be employed to tackle the environmental littering.

1.8 DELIMITATIONS

The study may lack a true reflection of the actual numbers of offenders and violators of environmental littering due to embarrassment of admitting to littering; however the problem can be minimized by handing out the questionnaires to a group of people at once as opposed to an individual, and collecting the questionnaires at once from the group. It can also be overcome by practicing good communication rapport especially in cases of individual interviews to better elicit information.

1.9 LIMITATIONS

There are no anticipated limitations; however limitations may arise from unforeseen circumstances, or lack of responses on surveys which researchers will ensure to do field research ahead of time in the event any challenges arise.

1.10 DEFINITIONS OF KEY TERMS

Social Influences: Social influence refers to the way in which individuals change their behavior to meet the demands of a social environment. It takes many forms and can be seen in conformity, socialization, peer pressure, obedience, leadership, persuasion, sales, and marketing.

Environmental Influences: Refers to or means relating to or caused by the surroundings in which someone lives or something exists.

Littering attitudes: A settled way of thinking or feeling about litter.

Littering behaviour: The way in which one acts or conducts oneself, or behaves in response to disposing of waste in the environment

Bin infrastructure: Bin infrastructure that refers to bin design, placement, servicing and signage

GSJ

CHAPTER 2

LITERATURE REVIEW

2.1 CONCEPTUAL FRAMEWORK

Environmental littering is a worldwide phenomenon that impacts the health and wellbeing of humans, animals, and the environment. Zimbabwe is no stranger to the problems of littering. The objectives of the study aim to:

1. To analyze the underlying littering attitudes and behaviours among the residence in Harare
2. To assess the awareness of the general population in the Harare Province on impacts of environmental littering.
3. To assess the effectiveness of current efforts on awareness campaigns by anti-litter environmental stakeholders in the Harare Province
4. To come up with strategies to ensure positive attitudes and behaviours towards littering among residents in Harare.

Different social, cultural and economic status as well as the personal attitudes or cognitions, factor into each other in behaviour outcomes. The conceptual framework demonstrates how the personal, social and environmental variables work together to contribute towards the behaviours of environmental littering. The personal variables of attitudes and behaviours, knowledge and awareness, and the expectations of behaviours that come with age, level of education play a role in the outcome behaviours. While personal variables are a significant factor; the landscape of the social culture and the environmental landscape of an individual combine to produce positive or negative behavioural outcomes that drive environmental littering. Figure 2.1 (Conceptual Framework) points out the relationship and how the personal variables interplay with the social and environment factors in the formation of positive or negative behaviours of environmental littering.

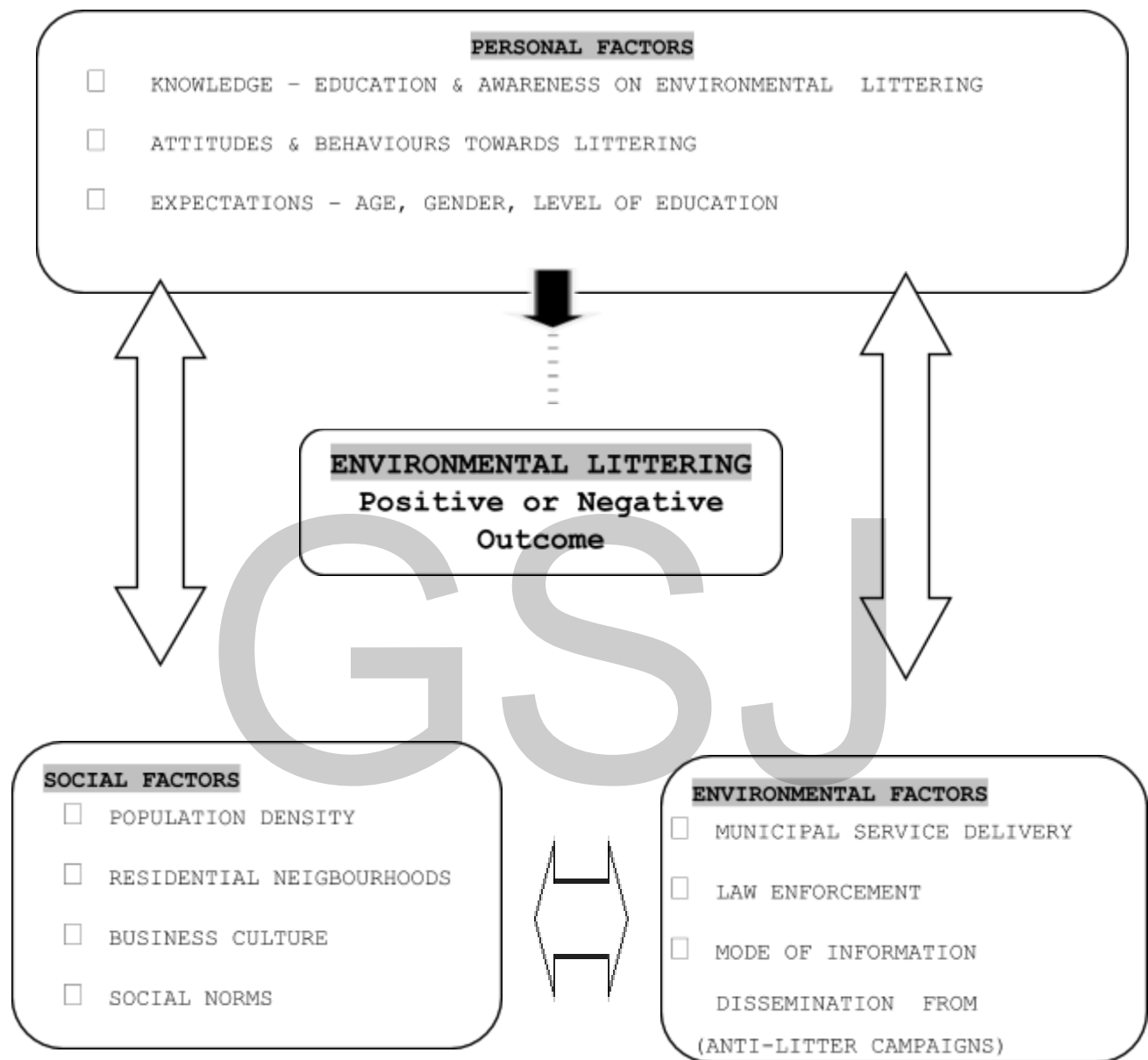


FIGURE 1: Conceptual Framework

Source: Author; Caroline Mudziviri (2019)

To understand the underlying causes of littering behaviour; it is critical to understand how individuals view and interpret littering behaviours, their level of awareness and knowledge on

the subject of environmental littering. It is also important to understand how social and environmental variables contribute to positive or negative outcome behaviours. An assessment of the personal demographics; such as, age, level of education, knowledge on subject of environmental littering, and the social and environmental variables; such as, residence, workplace, population density, laws and regulations, information dissemination on the subject of environmental littering; will help understand the various causes of the littering problem. The researcher seeks to understand the underlying causes of the littering attitudes and behaviours influencing environmental littering in the general population of Harare CBD, by assessing the underlying social and environmental factors influencing littering attitudes and behaviours. The study hopes to gain insight on attitudes and behaviours driving environmental littering behaviours; socially and environmentally, and to gain new information that will identify areas that need improvement by individuals and environmental littering governing policies. It will also assess knowledge and educational awareness on environmental littering impacts, and effectiveness of current law enforcement and regulations, as well as come up with strategies to mitigate littering on all level structures.

2.2 THEORETICAL FRAMEWORK

2.2.1 Social Cognitive Theory

Different socio-economic factors affect people's attitudes and behaviours towards littering, their frequency and willingness to take litter preventative approaches. According to both Ajzen (1991) and Stern(2000), the role of predicting factors can vary strongly across different specific behaviours; thus further empirical research is necessary in predicting other types of behaviours with certain groups or societies. The Social Cognitive Theory (Bandura, 1986), poses a fundamental question; "Why do people act the way they do?" According to Bandura (1986); the answer is that a combination of factors; including an individual's cognitions and environment interact to produce a particular behaviour, and that these factors are not independent; thus work together and influence one another; which Bandura coined this notion: "Reciprocal

Determinism.” Cognitive psychologists claim that; to understand human behaviour, we must look beyond the actual events to understand how people interpret or view the event (Davis, Palladino, 3rd Edition, page 536). Based on this theory; the researcher seeks to understand the underlying root causes of the personal, social and environmental variables that influence the attitudes and behaviours of environmental littering. To further understand the root causes of the modified Theory of Planned behaviour (TPB), will help uncover how the evaluative judgment of attitudes drive the intentions of behaviours.

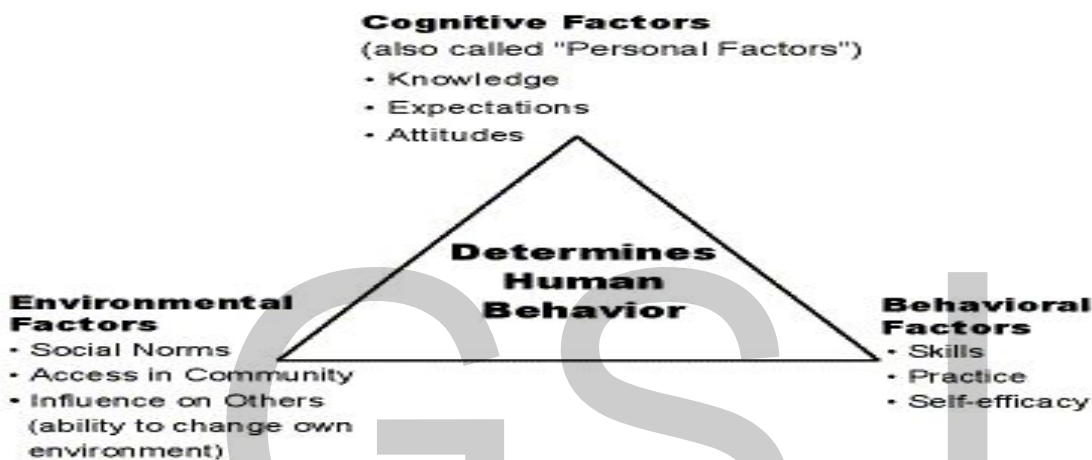


Figure 2.2

Source: Social Cognitive Theory; Bandura (1987)

2.2.2 Theory of Planned Behaviour

According to the Theory of Planned Behaviour (Ajzen (1985), an attitude toward a behaviour is a positive or negative evaluation of executing that behaviour. Attitudes are cognized by beliefs; norms are cognized by normative beliefs and motivation to comply, and perceived behavioural control is cognized by beliefs about resources needed to involve in the behaviour and the individual's possession of the opportunities and control is comparable to Bandura (1997), which introduces the concept of perceived self-efficacy. Self-efficacy is an individual's expectancy concerning his or her ability to engage in effective behaviours; and such expectancies differ from behaviour to another. Perceived self-efficacy is positively associated with any behaviour from

which a desired outcome is anticipated (Bandura, 1997). The principle of attitude consistency which asserts that the *ABCs* (*affect, behaviour, and cognition*) are normally in line with each other, thus predicts that our attitudes are likely to guide behaviour. The study seeks to understand these underlying ABCs of the attitudes that drive the littering behaviours of the general population in Harare Province; socially and environmentally, to explain why environmental littering attitudes and behaviours continue to be of consistency. The researcher hopes to draw strategic action plans to mitigate environmental littering from individuals, governing institutions and other environmentally friendly stakeholders.

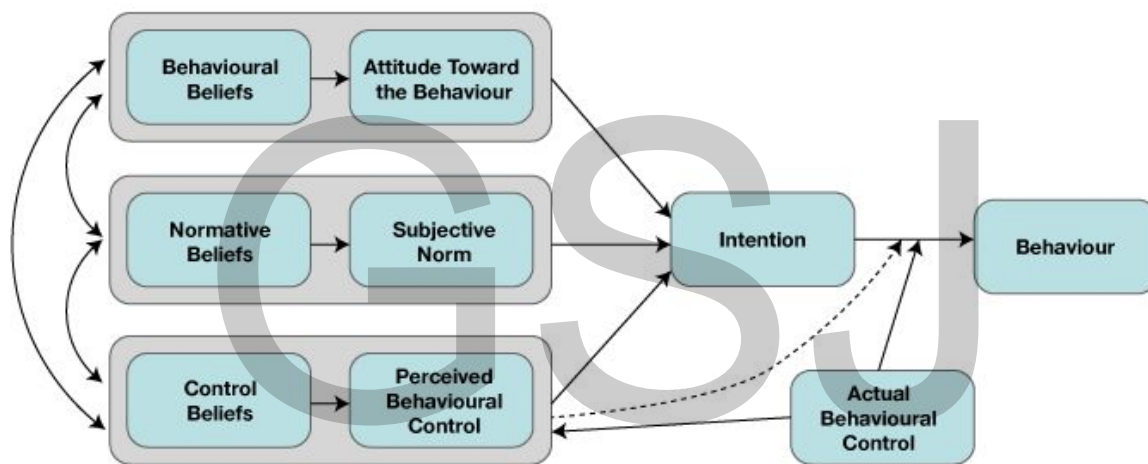


Figure 2.3 Source: TPB (Theory of Planned Behaviour); (Ajzen, 1997)

2.3 ATTITUDES AND BEHAVIOURS TOWARDS ENVIRONMENTAL LITTERING

Environmental littering is a global phenomenon, with some parts of the world gaining better control of environmental littering, than others. Environmental littering is waste that can include anything that can be discarded by humans after use, like bottles, glass, packaging materials, electronic waste, metal waste, etc. (World Atlas, 2018); causing environmental pollution and soil degradation. Other countries such as the USA, Namibia to name a few have made considerable strides in mitigating environmental littering. In Zimbabwe like many other

developing countries; the issue of environmental littering is still a huge problem. Much of the research done in Zimbabwe has identified the attitudes and behaviours influencing littering, with similar attitudes that drive the behaviour. Common attitudes pointed to lack of ownership, expectancy that someone will clean up after them, or that someone is hired to clean, lack of nearby bins (binrastructure); revealing a combination of personal, social and environmental factors influencing littering behaviour. All litter seen in the environment is the result of a person's negligence or careless attitude and behaviour (Waghorn-Lees *et al.*, 2013). What is not clear is the underlying causes of such attitudes and behaviours in the general population (GP) of Harare residents.

Attitudes are described as evaluative judgments, and are not limited to judgments about humans. According to (Davis, Palladino 1997), attitudes serve 3 functions of ego-defense, adjustment, and knowledge. Attitudes serve the purpose of protecting people from threats of self or the ego. They are used to maximize reinforcements and minimize punishments from the environment, as well as help people bring order and meaning to one's world. Attitudes towards environmental littering; as studies from other researchers have shown are the influencing factor of littering behaviour. Perhaps, the functions of attitude as described by Davis, Palladino; (ego-defense, adjustment, knowledge), can help understand the underlying thoughts and rationale behind the attitudes and behaviours and facilitate for change in attitudes towards environmental littering behaviours through attitude adjustments from newly learnt knowledge to foster positive and productive ego defenses towards mitigating littering activities.

Socially speaking; attitudes and behaviours can be learnt from others which then influence certain behaviour to be highly prevalent. This can be the case with environmental littering especially if the behaviour is occurring in large populations with a high density of population where it becomes the norm to be litterbugs. Many studies have shown that littering is mostly human descendant, as high levels of litter are usually synonymous with high levels of human traffic (KAB, 2009; Schultz *et al.* 2011) According to (Okeoma & Nkwocha, 2009) littering is also linked to economics, where significant intensity of activities along business and commerce areas are normally heavily littered. Studies found that high littered areas attract more litter than

rarely littered environments. People are likely to litter less in a cleaner environment but will litter more in a dirty environment (Alice Ferguson Foundation, 2011). These behaviours over time become socially and culturally accepted, and reflect positive or negative attitudes and towards environment littering. A positive correlation between social norms and pro-environmental behaviours has been reported for correct waste-handling, (avoidance of littering) (Heberlin, 1972). According to (Ozaki, 2011), the social environment is a key predictor to favourable intentions to engage in environmental behaviours.

According to KAB (Keep America Beautiful) (2007); there are personal factors that influence littering behaviours. Personal variables are; i) demographic variables e.g., age, sex, education, income and area of residence and ii) cognitive variables e.g., level of litter awareness, concern about littering and the willingness to act on it (Stuart, 1975). Age to some degree, is a variable that contribute to environmental littering, as its expected that the young children do not have the ability to reason as much as adults, and are prone to litter, while the older the person is; the lesser the behaviour is practiced. According to Tillet (2007); Ojedokun (2011) and Shukor *et al.*, (2012), younger people litter more because they are not in the habit of urban cleanliness as it has not been well grounded in them during their upbringing. The young tend to consume goods and foods on the streets that litter the environment (Okeoma, 2009). However, as age increases, their attitudes become negative (Ojedokun, 2011) and as age increases, the tendency to take littering prevention actions also increases (Ojedokun & Akungba-Akoko, 2013).

Other personal variables that can influence the behaviours to litter are the level of education of individuals and if knowledge of pro-environmental attitudes and behaviours was learnt. Environmental knowledge can be defined as the general knowledge of an environment phenomenon that can orient the action of people in an environmentally-conscious way (D'Souza, Moisaner, et al. 2007). Knowledge comes from being informed about the subject at hand. Research has shown that knowledge is a key factor contributing to long-term commitment to pro-environmental behaviour (Hornik et al. 1995). The lack of awareness and knowledge on the impacts of environmental littering is by far the major factor of littering behaviour. Maloney and Ward (1973); asserts that the most informed people are more likely to adopt a specific

pro-environmental behaviour. According to Gamba and Oskamp, (1994); awareness of the consequences that pollution can cause, may be a strong contributor to individual attitudes towards environmentally friendly actions. According to cognitive theories; the role of learning plays a major role in our everyday lives, as learned motive, goals, or incentives reinforce the learning of new responses; hence promoting adoption of new attitudes. The Social Learning Theory states that; “most learning occurs in social settings.” This can be seen with the behaviours of littering where the population in general will tend to act out the socialized behaviour, which in turn can also be modified through learning new knowledge and observing best practices in different environmental settings. Behaviours that successfully reduce drives are learned (Davis, Palladino, 3rd edition, Incentive Theories, page 152). Researchers have also indicated that the level of education of an individual can be a factor in the behaviours of littering. The more educated people were; the less likely they were to litter, as they would have gained the knowledge on environmentally friendly practices which promote positive behaviours. People with higher levels of education were found to have lower than average littering rates (William et al., 1997; Okeoma, 2009).

Other personal factors such as gender and place of residence play a role in driving the attitudes and behaviours of littering. While gender may contribute to the littering behaviour in different ways, research is yet to see if males or females participate more in the littering behaviour than others. Residing in an environment where littering is viewed as the natural order of the day can bring a sense of familiarity with the outlook of the environment; so much so that, the sight of litter and practicing littering behaviour can begin to be normalized. People are likely to litter less in a cleaner environment but will litter more in a dirty environment (Alice Ferguson Foundation, 2011). The environment can shape the way we view events and expectations. The theory of planned behaviour outlines that someone’s subjective norms, and his or her perceived behavioural control form an individual’s behavioural intention and actual behaviour.

2.4 IMPACTS OF ENVIRONMENTAL LITTERING

Environmental littering has far reaching impacts to the planet. Litter has harm to the health of humans and animals, as it serves as breeding ground for bacteria, mosquitoes and toxic substances that can damage the soil and water bodies. Environmental littering increases the costs with clean-up efforts and can lead to tension in societies, among non-litterbugs and litterbugs. Litter in itself causes visual pollution.

2.4.1 Health and Healthcare

Environmental littering is a huge health concern especially in areas of high density population, where naturally the more the people in an area the more the litter in the environment. Litter poses a high risk of disease outbreak, such as Dysentery, Cholera, and Typhoid especially in rainy seasons when litter washes away spreading diseases through contamination of water. Litter can serve as breeding grounds for mosquitoes. For example; when rainwater can collect in discarded tires and serve as mosquito breeding ground, and spread Malaria, Dengue, West-Nile virus etc., where these vector-borne diseases can spread like an epidemic and kill thousands of people within a short period of time (World Atlas, 2018). Litter attracts vermin and is a breeding ground for bacteria which can lead to the outbreak of disease (Fuggle, Rabie, 2009). Such was the case with the cholera and typhoid outbreak of 2008 which claimed over 4,200 lives in Zimbabwe. The Ministry of Health in Zimbabwe, notes the importance of sanitary disposal of waste in the homes and the environmental as preventative measures to outbreaks (ministry of health website). The health of animals and aquatic life is threatened as well, with litter which may carry toxic substances and kill animals as they search for food. Contamination of waterways and reservoirs can harm and kill fish. According to World Atlas (2018), littering is responsible for the death of millions of animals each year, where objects in the litter such as broken glass, pins, and other sharp objects injure animals who tread on them unknowingly, and sometimes ingested by animals and produce toxic effects in their bodies.

2.4.2 The Cost of Environmental Littering

Environmental littering is costly. Not only is it costly in monetary ways but costly to the environment, as it causes social and environmental decay. The budgetary money spent on hiring workers to sweep the streets or the amount of hours the cleaning machines spend on the streets every night could be significantly reduced if the GP practiced positive environmental friendly habits of anti-littering. There is more money spent on machinery and cleaning equipment which could be directed towards improving the socio-economic status of the GP. Littering is also costly on the individuals if health outbreaks occur and they need healthcare attendance. It is also costly on the public service funds as outbreaks require more unintended expenses and resources to mitigate. If litter is placed by the public in designated areas, it becomes less costly to clean up as opposed to litter which is randomly thrown anywhere. Litter clean-ups cost the economy more than cleaning up waste disposed off in the proper designated places by responsible citizens. The economic effects of unclean environments can be seen with a decline in the tourism industry, as well as the numbers of investors that would engage in doing business in such an environment. EMA (2011) asserts that litter costs money since it means high council rates in order to employ more workers to clean up streets. The agency also asserts that accumulated litter and carelessly discarded cigarette butts are potential fire hazards, and that litter attracts litter since people are more likely to litter in already littered environments. Unclean environments are not pleasant to see or visit and certain countries have adopted environmentally friendly behaviours, that they may be put off with littered environments, and question the success of doing business in places with such attitudes and behaviours.

2.4.3 Environmental Pollution and Degradation

Environmental littering is waste that can include anything that can be discarded by humans after use, like bottles, glass, packaging materials, electronic waste, metal waste, etc. (World Atlas, 2018); causing environmental pollution and soil degradation. These pollutants like electronics, batteries, tires, dye, etc., are hazardous to the health of the environment, thus chemicals from

such waste leach into the soil and enter into water bodies, causing soil contamination and water contamination. The contaminated soil and water enter into organisms causing diseases and sometimes death of organisms. The chemical balance of soil gets affected with chemicals from the waste littered in the environment affecting the growth of vegetation, and it can affect areas that rely on agriculture as a means of living if these chemicals pollute their water supply bodies. Like air pollution, water pollution is one of the most harmful types of pollution, and it can have extremely dangerous consequences for the living organisms using the contaminated water. A major volume of all the pollutants on land end up in water bodies (World Atlas, 2018). Litter can also add to air pollution, from decomposition smells to the smoke from burning the litter. The burning process can release significant volumes of toxic particulate matter and gases into the atmosphere, causing respiratory problems and other health problems in humans and other living organisms (World Atlas, 2018).

2.4.4 Normalization of Environmental Littering

Litter begets litter. Studies have found that high littered areas attract more litter; perhaps due to the fact that the sight of litter in an area after some time becomes a normal part of that environment; that it becomes easier and okay to litter in that part of the environment as well. Studies have shown that; People are likely to litter less in a cleaner environment but will litter more in a dirty environment (Alice Ferguson Foundation, 2011).

2.4.5 Devaluation of Communities

Environmental litter creates visual pollution and damages the aesthetics of communities or places. The presence of litter makes the environment unclean and therefore unpleasant to the eyes. Certain places are neglected because of the litter they accrue and become a dumping site, where no other development can happen on that piece of land. The property values of neighborhoods decrease in high littered environments because it's difficult to see the beauty of a

place if it is embroiled in an unsightly environment. On a larger scale, the tourism industry can suffer due to the visitors' avoidance of visiting or vacationing in destinations that are dirty, which always has a larger impact on the economy of a country. Environmental cleanliness plays a role in the numbers of people that get attracted to visiting certain destinations. It's more pleasant to visit a beach that is litter-free with clean crystal waters, than a beach with floating litter on its banks, where flies will be festering the place. See picture below:

Environmentally littered destinations can discourage certain investors from doing business in certain places; hence impacting the numbers of investors that could boost the economy of communities and country as a whole for the overall economic growth of a nation. Having environmental littering problems can reflect as a sign of disorganization and incompetency of a nation, which are critical for the decision-making process of investors doing business in other places. The environment and culture or attitudes and practices of a people are a direct reflection of their behaviours. Litter is a state of mind, a moral issue and is directly related to our character as a nation (Makwara & Chigudu, 2013)

2.5 CURRENT MEASURES ON MITIGATING ENVIRONMENTAL LITTERING

The international conventions or multilateral agreements endorsed by countries are binding and aimed at collectively addressing specific issues by a number of members from countries globally. Zimbabwe participates in many of the environmental conventions. This has brought Zimbabwe like other countries in the fight against environmental abuses, however much effort and strategies are still to be implemented in the action plans to mitigate environmental littering. Zimbabwe has signed and ratified the Convention on International Trade on Endangered Species of wild fauna and flora (CITES). It encourages members to be best protectors of their wild flora and fauna, and to protect certain species of wild flora and fauna, and the agreement protects more than 34,000 species of animals and plants. Environmental littering can threaten the protection of the fauna and flora. The Stockholm Convention on Persistent Organic Pollutants (POPs) is another legally binding treaty that Zimbabwe has ratified on 31 March 2011. It calls for clean-up, and safe

management of the stockpiles and waste. Zimbabwe in an effort to live up to the international treaties; has enlisted the mandate to protect the environment under EMA (Environmental Management Agency) to police the activities of environmental littering among other environmental concerns. EMA legislation; Environmental Management Act, Ch. 20:27, section 83 and Statutory Instrument 6, Of 2007; stipulates fines and jail for littering, however less cases of apprehension or citation of fines has been reported with the agency, or visibility of the law enforcement enacted. EMA lacks public reports on progress on environmental littering. Their public website lacks the information on environmental littering and the important awareness information the public or researchers should be able to access. A search on the website for “Littering, Litter” produces zero results (September, 2019); however it points out the law is in existent with possible fines for violators. While a legislative framework for managing waste is in place in Zimbabwe (EMA), there is no enforcement (Makwara and Maude, 2013) EMA’s Section 83 of ACT 20.27 stipulates that; It is an offence to discard, dump or leave any litter on any land, street or road except in designated containers or places specifically designated for such purposes. Public transporters must put in place sufficient waste bins within their vehicles for use by passengers as stipulated in section 23 subsection (2) and (3) of Statutory Instrument 6 of 2007. Section 83 of the Environmental Management Act subsection 1 states that no person shall discard, dump or leave any litter on any land or water surface, street, road or site in or at any place except in a container provided for that purpose or at a place which has been specially designated, indicated, provided or set apart for such purpose. EMA law also stipulates that it is illegal to throw rubbish in undesignated points and the commuter omnibuses’ passengers should hold on to the litter until they get off and drop it in bins; if there are no bins provided in the vehicles. While this legislative framework is in place there appears to be lack of effective enforcement and some reluctance in prosecuting littering violators.

2.5.1 City Of Harare Municipal on Environmental Littering

The city of Harare website for the public is almost always down. The public site places more information and weight on the billing and payment information of revenue collection than any other information. The COH dispatches cleaning vehicles on a daily basis in the CBD to clean the littered streets. The Trucks start rolling on the streets at 10PM daily, however the next day by 10AM, the streets give the impression that they haven't been touched for days, because of the city vendors and high traffic populations of litterbugs. Around the hours the trucks start their clean-ups, the city is still very vibrant and the general population sees the trucks cleaning but do not seem to care. Binrastructure has improved in the CBD with independent business communities taking some of the responsibility to furnish bins branded with their company profiles on them, however; there is still less binrastructure per population density. This has helped to improve the availability of waste bins in the city; especially, along certain streets where business offices of pro-environmental companies reside; like, Shakira Mauro, who then gain the incentive of advertising on their services for the provision of binrastructure. Zimbabwe still lacks appropriate and effective technologies as well as resources for waste management; which compounds the problem for people to litter more, as some of the bins are full for days before they are collected, causing an overflow of trash being blown away into the environment. The councils are confronted with either problems of revenue generation and are henceforth unable to cope since they used to rely on government and donor aid (Chitotombe, 2014). In addition, the country's deteriorating infrastructure has resulted in poor waste management which has seen an accumulation of waste and outbreaks of diseases (Machivenyika, 2012) The city has also employed cleaning workers that manually sweep the streets every day in the CBD, however litter along road servitudes is a problem to clean up as the councils feel the responsibility should be ZINARAs, since they took over activities of roads. The councils feel ZINARA revenue collects revenues and they should provide for binrastructure along road servitudes. Proper delegation to oversee the issue of littering along roads needs clarification, so as to mandate the responsible authority.

2.5.2 Current Law Enforcement on Environmental Littering

Environmental Management Agency (EMA) is the overseeing legislative agency that presides over the regulation and enforcement of environmental waste management laws. According to the current gazetted fines; violation for littering is \$150 ZWL these fines are too small to deter the behaviours, moreover; very few cases have been reported in apprehension or citation of violators. This reluctance on implementation of law defeats the goal for a litter-free Zimbabwe. There is very little message out to the public on these laws to be known, that it will not be surprising if a huge number of people are not aware of such laws; owing to lack of enforcement by the responsible parties. In 2010; EMA ACT under SI 98 introduced a ban of Plastic take-out containers in an effort to reduce the litter it was producing from food take-outs. The ban was trying to reduce degradable plastics; which studies have shown can last many years before they can disintegrate. The law was seen with the drop in the use of these plastic containers for some time, however with time; food-service providers tend to have picked up usage of such containers again. The ban of plastic k-lite (food take-away containers); has proven unattainable and is perhaps viewed as clearly unavoidable in the food business community. There seems to be a tendency to relax law enforcement in Zimbabwe.

2.5.3 Current Efforts by Anti-Litter Awareness Campaigns

Currently the President of the Republic of Zimbabwe, (President Emmerson Dambudzo Mnangagwa); recognizing the constitutional mandate to uphold environmental fundamental rights and freedoms which guarantee every Zimbabwean citizen; “the right to an environment that is not harmful to their health and well-being” (Constitution of the Republic of Zimbabwe, Section 73), initiated the “Once a Month Clean-up Campaign”, on December 5th 2018. The campaign calls for a clean-up of the environment surroundings; from workspaces, recreational spaces, vending sites, residential, car parks and roads servitudes, in an effort to create the spirit of a clean, safe and healthy environment for the nation. Initially the campaign promised full force clean-ups, however there seems to be reluctance as the months pass by with more people

observed running their day to day business on the 1st Friday of each month. Perhaps constant reminders thru radio to keep the spirit and reminder high; would prove beneficial. Professionally run business companies are the ones that seem to enforce the campaign; however clean-ups are done on small scale and with limited time; thereby not showing a significant decrease in the behaviours of littering. Other anti-litter campaigns such as Green Chikoro Campaign lack the resources to drive the beneficial educational awareness programme on environmental littering, and waste handling; due to lack of funding support, and being worsened with the current economic constraints. They have set up a go fund account online, and only \$100 was donated to date for the past 3 years. Anti-litter stakeholders in the business community have embarked on maintaining certain free spaces along road servitudes by cleaning litter in those spaces. In turn they gain a marketing platform for their products as an incentive. This method seems to be effective as the areas under the management of business communities participating are litter-free and improved in aesthetics, and adding value to certain neighborhoods. The challenge is gaining as many participants from the business community; and perhaps some business population is not aware of such programs within their city municipalities. Clean-ups of litter cost more money, time and energy than proper disposal of waste in designated places or bins. Currently anti-litter campaigns are failing due to lack of consistency in the effort to uphold targeted clean-up days, and lack of planning ahead for the clean-ups; as well as resources to do clean-ups.

2.5.4 Current Dissemination of Information on Littering

Information on environmental awareness is not published enough or regularly. The radio will produce EMA environmental quizzes at times, however much of the information published lately has been on other topics which are also very critical in our country such as wildfires started by people, and recycling. There has not been any visible signage on anti-litter campaigns by the agency, and if there is those signage; they are clearly not many for people to miss them. More social-marketing on the environmental littering subject is a must.

2.6 MEASURES IN MITIGATING ENVIRONMENTAL LITTERING

2.6.1 Environmental Awareness Education

Robust public Educational Awareness Campaigns on Zero-Litter Tolerance and the need to properly dispose waste is vital and critical in addressing the environmental littering problem. This will sensitize the public on the effects and impacts of littering, and the consequences for such behaviours. Educational curriculum, at every grade level should include and emphasize on the impacts of environmental littering, and school children should be educated on the regulations and laws stipulated in legislature, so that kids grow up to be responsible citizens that are environmentally aware. Along with integrated learning; the schools should introduce a zero-litter address at every assembly to drill the importance of anti-littering and environmentally friendly behaviours. Environmental quizzes and anti-litter campaigns should not be limited to a few groups of students enrolled in clubs, such as interactive clubs. The message should be in every child's brain and ear. Clean-up Campaigns should be encouraged; however it's more important to educate on the subject of environmental friendly behaviours and anti-litter behaviours in-order to mitigate the problem. A more informed generation will make informed decisions and practice positive attitudes and behaviours towards their environment. There is a saying that says; educate the child in the way they should grow; so it is important to teach the young children so they know it's wrong to litter and the reasons why littering is bad for them and their health and environment

2.6.2 Anti-Littering Information Dissemination

Critical strategic actions toward environmental littering need to be adopted at an individual, commerce, neighborhoods, cities and national levels. EMA, Ministries of Health, Education, Environment, Tourism, Roads & Transportation, and Water would need to work in collaboration towards a common goal of zero- litter and run with the same intensity in delivery of anti-litter

messages across the board. The ministries need to pull resources together to come up with a single unified action plan that addresses the public; through a Zero-Litter Social-Marketing Strategy. The ministries can utilize media marketing tools such as radio, huge billboards, regular mobile alerts, placing a zero-litter tolerance clip message on every agenda of public address. The social- marketing strategy should include pertinent information of fines and jail on violators, proper disposal of waste, impacts of environmental littering. The legislature can approve social-marketing mandates to adopt and carry the Zero-Litter Tolerance message for all public service operators and service providers. Public transportation service providers can be asked to brand omnibuses with visible approved anti-litter branding as a requirement for operation. Public service buildings, such as schools, clinics, hospitals, etc., can also be asked to visibly brand zero-litter messages at visible entrances of buildings. Business and commercial areas can contribute by religiously placing zero-litter messages in their regular meeting agendas as a requirement by law and asked to submit quarterly reports on progress, and strides taken against environmental littering and proper waste disposal. Participation of the business and commerce community can improve cleanliness in the central business districts. The business community can be mandated to provide binrastructure outdoors in-front of their shops as part of doing business in Zimbabwe; by law.

2.6.3 Enforcement of Laws and Regulations

Law enforcement should stipulate stringent fines, and enforce anti-littering laws to deter violations. The laws and policies governing environmental littering can extend the responsibility to watch surroundings within certain parameters of places; that is, residences, businesses, workstations, schools, hospitals, vendor stalls and stands, and any other places people occupy; to be cited for violation if even a small piece of litter is visible within the area of jurisdiction as decided upon in legislature. This may seem unfair; however it gives every single person the responsibility to watch for violators and mitigate participating in the behaviours as well as cleaning up areas within a parameter, given that citation of fines would be everyone's

responsibility if litter is available in the jurisdiction of premises. This will enable the policing of individuals by themselves eventually. While this method is effective, it calls for EMA or the policing agents on citations of fines to be proactive, and to enforce implementation of laws. If laws are enforced properly; in no time every individual would be very alert and quick to drop the behaviours. Such changes would take a few months of hard work to enforce; however the benefits would be tremendously notable with attitudes and behaviour changes that are transformational to a zero-litter country. Heavy punishment for such behaviours would discourage everyone from participating in littering.

2.7 EMPIRICAL EVIDENCE

Empirical evidence has shown that littering is a worldwide phenomenon; however some places are better at handling waste disposal than others. Empirical evidence has also shown that high population density areas are more prone to littered environments; and the more a place is littered; the more the place attracts even more litter; while less people are likely to litter in cleaner environments. Socially speaking; attitudes and behaviours can be learnt from others which then influence certain behaviour to be highly prevalent. This can be the case with environmental littering especially if the behaviour is occurring in large populations with a high density of population where it becomes the norm to be litterbugs. Many studies have shown that littering is mostly human descendant, as high levels of litter are usually synonymous with high levels of human traffic (KAB, 2009; Schultz *et al.*2011) According to (Okeoma & Nkwocha, 2009) littering is also linked to economics, where significant intensity of activities along business and commerce areas are normally heavily littered. Studies found that high littered areas attract more litter than rarely littered environments. People are likely to litter less in a cleaner environment but will litter more at a dirty environment (Alice Ferguson Foundation, 2011)

2.8 KNOWLEDGE GAP

Research has shown that many studies have been done on waste management in Zimbabwe; however littering has not been addressed in these studies; all though littering is part of waste that seriously needs addressing and attention in Zimbabwe. More studies on littering have been done in developed countries, and West Africa, a few in Nigeria and Nairobi. There are a handful of studies that focus on what the influencing attitudes and behaviours of littering are in Zimbabwe in the past decade. While its great insight on the attitudes that drive the behaviour; there is a knowledge gap in understanding what the underlying root causes of such attitudes that drive the behaviours. Studies on littering in Zimbabwe have found that the attitudes that drive the behaviours were due to lack of ownership and pride of our country, or that someone was hired to clean the litter, or lack of binrastructure nearby etc. While it is important to know the attitudes that influence the behaviours of littering; it is more critical to understand the underlying root causes of certain attitudes and behaviours to be able to correct the problem from its source; by assessing how the general population views or perceives the littering behaviours socially and environmentally, their level of awareness and knowledge on the subject of environmental littering and its impacts. We have all heard the phrase; “Knowledge is Power”. An informed population is more likely to deliver positive outcomes and alter their attitudes and make adjustments through knowledge; hence the need to understand the general population level of awareness on the subject of littering. The study aims to gain insight into the underlying causes of the attitudes that drive the behaviours, and contribute to the literature on environmental littering in Zimbabwe, as well as gain new information that can lay foundations for new strategic ways to mitigate littering behaviours on all level structures.

2.9 CONCLUSION

To understand the underlying causes of littering behaviour; it is critical to understand how individuals view and interpret littering behaviours, their level of awareness and knowledge on the subject of environmental littering. It is also important to understand how social and

environmental variables contribute to positive or negative outcome behaviours. The researcher settled for a theoretical framework around cognitive psychologists' claim that; to understand human behaviour, we must look beyond the actual events to understand how people interpret or view the events (Social Cognitive Theory) and the Theory of Planned Behaviours (TPB). Empirical evidence shows that attitudes and behaviours are shaped by the cognitive perceptions and that rewards or punishment act as controls of perceived behaviours. The knowledge gap identified showed that many studies have been done on waste management in Zimbabwe; and the littering studies done thus far were focusing on the attitudes and behaviours towards littering, however; this study wanted to explore the social and environmental factors that influence these attitudes and behaviours of environmental littering; therefore the study seeks to understand the underlying social and environmental influences of littering behaviours.

CHAPTER 3 METHODOLOGY

3.1 INTRODUCTION

This Chapter will focus on the methodology that will be applied to this research study; basing on the conceptual and theoretical framework in chapter 2. This chapter section will contribute to literature for researchers justifying the adoption of both inductive and deductive forms of knowledge to arrive at a holistic understanding of social phenomena. The conceptual framework demonstrates how the personal, social and environmental variables work together to contribute towards the behaviours of environmental littering. The personal variables of attitudes and behaviours, knowledge and awareness, and the expectations of behaviours that come with age, level of education; to outcome behaviours. Social Cognitive Theories (Bandura 1997), and the Theory of Planned Behaviours (Ajzen 1989); will serve as a guide in variable data presentation, interpretation and analysis in support of the conceptual framework.

The methodology adopted in this study aims to achieve these objectives:

1. To analyze the underlying littering attitudes and behaviours among the residence in Harare
2. To assess the awareness of the general population in the Harare Province on impacts of environmental littering
3. To assess the effectiveness of current efforts on awareness campaigns by anti-litter environmental stakeholders in the Harare Province
4. To come up with strategies to ensure positive attitudes and behaviours towards littering among residents in Harare

This chapter will cover the research paradigm and research design for this study, as well as discuss the sampling techniques adopted; that will be used on the target population, and the research instruments to be adopted for data collection. The study will cover its reliability and validity strengths, and highlight on the ethical component of the study. It will finally touch on how the presentation, interpretation, and analysis of the data will be captured.

3.2 RESEARCH PARADIGM

Research in general is underpinned by certain philosophical assumptions about the world; what can be defined as the research paradigm. These paradigms (Kuhn 1962) or worldviews (Creswell 2003) determine the conduct and outcomes of research. In social scientific knowledge; two worldviews have usually dominated: post-positivism and constructivism; however with the ever-changing world in technology, social and cultural complexities; more and more ways of approaching research have been adopted, creating other paradigms (worldviews). These newer paradigms are: the advocacy approach and participatory approach, which are associated with action research; and the pragmatism approach, which is associated with mixed methods research. According to Creswell and Clark (2007); as social research has matured, dealing with ever more complex problems, alternative research strategies have evolved. The emergence of these other

worldviews as alternative perspectives of doing research have transcended the dichotomy of post-positivist/constructivist, making research conceptualization, and research practice more fluid.

In this study; the researcher will incorporate the mixed method of qualitative and quantitative research. Mixed methods are becoming an expanding area of scholarly attention, due to the increasingly complex nature of contemporary social and environmental changes and problems. Researchers are expected to respond to the research context innovatively and use whatever data types and analysis techniques necessary to answer their research questions (Stewart, 2011). Researchers are constantly faced with the need to be equipped with appropriate skills, using different methods of data collection together in the same study to conduct research with reliability and validity. Indeed it is possible to trace a long history of answering research questions with different data types, even if work was not explicitly labeled as ‘mixed’ at the time (Olsen 2004). What is newer, however, is the explicit and intentional combining of different data types and analysis techniques together as a distinct methodological approach that can complement mono-method approaches to research (Creswell & Plano Clark 2007).

Due to the nature of the research questions of the study; which is aimed at understanding the social and environmental influences of littering behaviours; the researcher embraced the pragmatism philosophical approach; which is associated with mixed methods research. The methodological pragmatism philosophy satisfies the aims and objectives of this study as it provides the researcher the flexibility to thoroughly assess and gain valuable information and insight into the research problem; the viewpoints and knowledge of the population of study. The pragmatic worldview; at least offers a middle-way between methodology and philosophy so that ‘real-world’ research questions get answered (Johnson & Onwuegbuzie 2004). Methodological pragmatism involves research design and operational decisions based on ‘what works best’ when answering the questions being investigated (Creswell & Plano Clark 2007). Other studies of similarities that have approached research with pragmatism worldview; are (Stewart 2011; Bryman 1998; Tashakkori & Teddlie 2003; Teddlie & Tashakkori 2009; Creswell 2003;

Creswell et al. 2003; Johnson & Onwuegbuzie 2004; Creswell & Plano-Clark 2007).

3.2.1 Critiques of the Pragmatism Philosophical Approach

The mixed method as a third methodological approach has been criticized for not following the traditional post-positivism or constructivism approach; hence has been met with some criticism before. For methodological purists; combining different methods and data types together remains philosophically incoherent (Johnson & Onwuegbuzie 2004). A challenge that exacerbates criticism is the said inconsistencies and disagreement in the mixed methods literature on what should be valid mixed methods research. According to Teddlie and Tashakkori (2003); there is lack of agreement on an accepted nomenclature and basic definitions; which causes an ongoing debate about the utility of mixed methods and the paradigmatic foundations of the methodology; as well as unresolved design issues about researchers using the approach should draw inferences from. These differences however; should not deter or discredit the wealth of a combination of methods for maximum capturing of data; which in-itself increases the reliability and validity of information sought; as researcher is not limited by the restrictiveness of traditional methodology. Research in this approach will eventually give rise to new and better ways of coordinating and resolving these differences.

3.2.2 Justification of Methodological Choices

Mixed Methods offers a strategy that enables the researcher to exploit multiple data types. The ability to answer all the research questions in their entirety is the best opportunity the method offers. Pragmatism offers the practicality of the worldview of a given population of study. The ability to have rhetoric that is formal or informal is another advantage to the approach. The combined methods of qualitative and quantitative research present the researcher with full dissection of the problem; and offer the researcher the ability to collect, measure, and analyze and interpret data through various qualitative and quantitative techniques. The pragmatism methodology approach is a combination of deductive and inductive reasoning. The approach will allow the researcher to report findings as viewed and formulate opinions on it. This methodology is based on a view that social research does not operate in isolation from the world it seeks to

understand, rather the research process and its outcomes are shaped by the actors, institutions and problems it takes as the main units of analysis.

3.3 RESEARCH DESIGN

The study will employ the descriptive research design; as it will utilize both elements of the quantitative and qualitative methodologies. Descriptive research refers to the type of research question, design, and data analysis that will be given to a given topic of study. It aims to accurately and systematically describe a population situation or phenomenon (McCombes, 2019). It can answer the what, when, where, and how type of questions. This research design will work well with the aim of the study and enable the researcher to address the following questions;

1. What are the underlying causes of littering attitudes and behaviours among residents in Harare?
2. To what extent is the general population in Harare Province aware of the impact of environmental littering?
3. How effective are the current efforts on awareness campaigns by anti-litter environmental stakeholders in Harare?
4. Which strategies can be put in place to ensure positive attitudes and behaviours towards littering among residents in Harare District?

The descriptive design can use a wide variety of quantitative and qualitative methods to investigate one or more variables (McCombes, 2019). The mixed method used with the descriptive design through surveys and interviews will ensure valid and reliable results.

3.3.1 Advantages of Descriptive Research Design

The advantages of using descriptive design is the ability to study several variables without controlling them, hence each variable is thoroughly evaluated by itself. It can be used with mixed methods of quantitative and qualitative research, or independently. It allows for the researcher to

employ a variety of methods to describe, and then interpret data. Descriptive research involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data collection (Glass & Hopkins, 1984). It can often allow the researcher to use graphs, charts, which aids the reader to understand the distribution of data fairly easily. The descriptive design meets the three main purposes of research, which are; to describe, explain and validate findings. Descriptive research emerges after following exploration, and serves to organize the findings in order to fit them with explanations, and then test or validate those explanations (Krathwohl, 1993).

GSJ

**MIXED
METHODS**

**SURVEY METHOD (CLOSED & OPEN ENDED QUESTIONS)
THROUGH QUESTIONNAIRE AND DATA COLLECTION FORM
INTERVIEWS- INDIVIDUAL**

DESCRIPTIVE RESEARCH DESIGN

CLARIFICATION → **MEASUREMENT** → **DESCRIPTION** → **INTERPRETATION**

Measurement of the level of awareness & knowledge on environmental littering

Description of the level of awareness and knowledge on environmental littering

Residential & Businesses activity norms on environmental littering

Description of the norms of Residential and Businesses activities on environmental littering

Measurement of Demographics of age, level of education, occupation & place of residence

Description of demographics of age, level of education, occupation on environmental littering & place of residence

Measurement of current laws, enforcement of laws, current anti-litter stakeholders' information dissemination strategies & challenges, current service delivery strategies and challenges of EMA and City of Harare

Description of current laws, enforcement of laws, current anti-litter stakeholders' information dissemination strategies & challenges, current service delivery strategies and challenges of EMA and City of HRE

**PHENOMENON
LITTERING**

**INTERPRETATION
OF MEANING**

RECOMMENDATIONS

Figure 3.1 **Modified Descriptive Research Design** (Caroline Mudziviri, 2019)
Source: Burns & Grove, 2002; Typical Descriptive Design

3.3.2 Disadvantages of the Descriptive Research Design

The disadvantage of the descriptive design is that it doesn't show the causal relationship of variables; however, for this study; it is not necessary as the study is looking to gain insight into the views and opinions and attitudes influencing the behaviours of littering, socially and environmentally; thus the disadvantage of the design poses no harm to the questions the researcher is posing. Below is the Research Design Visual.

3.3.3 Justification of the Descriptive Research Design

Due to the objectives of the study and the type of questions the researcher seeks to be answered; the descriptive design with mixed methods can best achieve in-depth understanding of the problem through description of viewpoints and opinions of the general population. The design enables in-depth eliciting of information as it is allowed for both qualitative and quantitative research. This enables the researcher to employ various measurement tools, and various data collection tools and data analysis tools improving the reliability and validity of the study. The descriptive design allows for description of variables as independent categories, and can allow the researcher to interpret any interrelations between variable and identified themes in data analysis, and interpretation; hence the choice to adapt this design rather than other research method designs. Another reason is the fact that the research study has the purpose of contributing towards other researchers, recommendations to policy makers and other pro-environmental agencies. Borg and Gall (1989) points out that; there are 4 classifications of educational research which are; description, prediction, improvement, and explanation. Descriptive research describes natural or man-made phenomena that can be of interest to policy-makers and educators (Stewart, 2011). The research design will provide a guide for the researcher in the aim to understand more information on the littering phenomena and to assess what can be done to mitigate the problem by allowing the entire research question to be exhaustively answered.

3.4 POPULATION

Population in research is sometimes referred to as the target population; and is the entire set of persons who meet the sampling criteria. The target population is the residents of Harare. Harare is the capital city of Zimbabwe. It is in one of the 10 provinces of Zimbabwe in Harare Province. The CBD of Harare City is the main commercial and business home of various activities. The majority of Harare's population resides in high density areas; according to Zimstats (2017 Census Report). The unemployment rate of Harare's population is over 80%; however, the majority of this number relies on informal trading. The city of Harare is a vibrant, busy, and congested area due to the ever increasing activities of formal and informal traders, vendors, commuter transportation and centralized commercial banks, and other public service institutions. Due to the constant flow of human traffic in the CBD; the amount of litter in the environment is a major problem on a daily basis; even with the deployment of cleaning vehicles dispatched for clean-ups every night by the City of Harare Municipal.

Harare Central Business District is the host for many other surrounding neighborhoods within commutable distance; and thus increasing the volumes of people engaging in various business activities at any given time. This is due to the fact that Harare CBD is centralized, and has centralized much of the commerce and public services; thereby drawing volumes to the city Centre. The city also carries quite a number of students from all levels that commute in and out of town to connect to their schools of attendance; and with some vocational colleges housed in the CBD. There is basically a representation of the general population in the CBD of Harare at any given time.

The CBD of Harare is a host of an array of business and pleasure activities for many residents of Harare Province; and the more people in a given area, the more likely they are to litter. Due to the levels of litter in the CBD; it tends to keep attracting more litter. Studies have shown that; people are likely to litter less in a cleaner environment but will litter more in a dirty environment (Alice Ferguson Foundation, 2011).

3.5 SAMPLE POPULATION

The sample population is the specific selected group from the general population of Harare that data will be collected from to carry out the study. Their sample is a representation of the general population of study. There are two types of sampling methods; probability sampling and non-probability sampling.

Probability Sampling – involves random selection of participants as a sample; thereby allowing researchers to make statistical inferences about the whole group. The advantages of this method are that every member of the population has a chance of being selected. This method has 4 types of sampling; namely, simple random sample, stratified sample, systematic sampling, and cluster sampling.

Non-Probability Sampling – involves non-random selection of participants; thereby basing on convenience or certain criteria, allowing the researcher to easily collect the initial data. It's easier to collect samples this way and is cheaper, however it cannot be used to make valid statistical inferences about the general population. This method is more often appropriate with exploratory and qualitative research, as the aim is not to test a hypothesis about a broad or general population. The aim with these research methods is usually to develop an initial understanding of a small or under-researched population. There are 4 types of non-probability sampling; convenience sampling, voluntary response sampling, purposive sampling, and snowballing sampling.

In this study; the researcher will need to gain understanding of the general population of Harare Province; and will adopt the Simple Random Sampling Method for the quantitative aspect of the study and the purposive non-random sampling method for the qualitative aspect of the study. Simple random sampling is the random selection of people (sample) from the sampling frame (target population) for inclusion in a study. This sampling method is the most basic technique of probability sampling; which can be achieved by randomly selecting elements from the sampling frame (Burns & Grove, 2002). This technique will ensure the target population will be represented at all levels. The sample for this study will be 95 participants. The selection will be

done by randomly picking participants of all ages, as they go about their business in Harare CBD. The total sample for the study will be 100 participants; with 5 out of the 100 participants selected with the purposive non-random sampling method for the interviews.

Purposive sampling method is a non-probability sampling method that allows the researcher to use their own judgment in selecting a sample that is most useful to the purposes of the research. It is often used in qualitative research, for the researcher to gain detailed knowledge about a specific subject or phenomenon. The purposive sample has to have a clear criteria and rationale for inclusion. By definition; purposive sampling is judgmental or selective sampling that involves the conscious selection by the researcher of certain subjects or elements to include in a study (Burns & Grove, 2002). Interviews will be conducted with responsible parties at EMA, City of Harare, Ministries of Tourism and Industry, Health, and Education.

3.5.1 Advantages of Simple Random Sampling

The method provides for an easier way to form representative groups from the overall population; which makes it a simple technique. It also gives an equal chance of selection from every individual from the population.

3.5.2 Disadvantages of Simple Random Sampling

The drawback can be not so great of a sample if the population of study is heterogeneous; however in the case of this study the littering behaviour is a huge problem that is highly practiced; and even as others may not engage in the behaviour; the littering problem affects everyone in the environment.

3.5.3 Justification of Simple Random Sampling

The simple random sampling method is effective enough for the population of study, as almost everyone in Harare witnesses environmental littering, and the CBD. The sample will be representative of the general population of Harare Province; therefore, will provide the

researcher the ability to assess the problem of littering, and assess the level of awareness of environmental littering and its impacts. The simple random method is easy to conduct and less time consuming, as almost everyone in Harare meets the sampling criteria in assessing the issue of environmental littering as almost everyone manages waste disposal on a daily basis. The simple random method example can be seen with Manojlovich (2005) who used the method to study how certain environmental factors and personal characteristics could be used to predict behaviours in a hospital setting.

3.5.4 Advantages of the Purposive Sampling Method

The purposive sampling method is advantageous for this study as the researcher will have the chance to interview the specific persons of interest in the arena of the subject of study; and have them answer the questions for their specific area to provide insight in the current state of affairs, their viewpoints, challenges and other pertinent information relevant to the study. The method is useful with the chosen mixed methods in providing a landscape for qualitative research through the adoption of interviews.

3.5.5 Disadvantages of the Purposive Sampling Method

Purposive sampling method has been criticized because some argue that the researcher's judgment may be questioned as it can be difficult to evaluate the accuracy of their judgment in selection of participants; however in this study, the researcher will interview the departments of institutions that handle the subjects of environmental issues who have the information on the challenges and current strategies or policies in place in mitigating littering; such as EMA, City of Harare, and other anti-litter stakeholders.

3.5.6 Justification of the Purposive Sampling Method

The sampling method is the best method to adopt for the targeted interviews with the relevant institutions for the study and allows the researcher to select participants that are specific and responsible for answering the research question in these institutions, for an in-depth and

insightful accumulation of information.

3.6 RESEARCH INSTRUMENTS

The study design is descriptive in nature; utilizing the mixed methods of quantitative and qualitative methods of research, and will adopt the questionnaire instrumentation for this study. The questionnaire will be used as a data collection form. The questionnaire will be designed with both open-ended questions and closed-ended questions. The researcher will also use the interviews as a measurement tool to gauge the viewpoints of participants in their own words. The interviews will be structured interviews; meaning the researcher will ask questions designed by the researcher prior to the interviews. The order of questions will be specified; this form of structure will ensure the questions needing answers for the study are responded to.

3.6.1 Questionnaire Survey

The semi-structured questions can be looked at as the qualitative portion of the mixed research method adopted in the study. These questions are semi-structured, meaning the questions are fixed with no fixed responses. This will give the respondents an opportunity to express their viewpoints and thoughts, and the researcher to be able to identify common themes later in the data analysis stage of the study.

The closed-ended questions on the questionnaire will be the quantitative portion of the mixed research method adopted in the study; which will include the closed-ended questions to give the respondents a predetermined set of answers to select from. The closed-ended questions will adopt instrument techniques of binary answers (e.g. yes/no), and a list of options with single or multiple answers, and finally scales (e.g. five point range scales). The scales of measurement are ratio-scale measurements which will address mutually exclusive categories, ordered ranks, and exhaustive categories of responses.

The combination of using the mixed method questionnaire will elicit more information sought by the researcher as well as enable the collection of data efficiently. Adopting a questionnaire with both open-ended and closed-ended questions will allow for the usage of the various measurement tools described above to ensure reliability and validity of data collected for the study. This is due to the fact that the questionnaire is a standard designed data collection form that will be given to everyone in the sample group for consistency in question and means of collections of data.

The researcher will structure the questions in a logical order, starting with questions that are easy, and non-sensitive to encourage the respondents to continue. The questions will be grouped together under related questions to be sure all the four questions the researcher seeks to understand are covered completely. To make sure that all sub-groups will be able to understand the questions; the questionnaire is designed with simple, clear and precise language, and phrased neutrally with no bias towards one answer than another.

3.6.2 Advantages of the Survey Questionnaires

The advantages of the mixed methods questionnaire is; its ability to elicit quantifiable data as well as elicit qualitative data to gain an in-depth research of the problem. It allows for efficiency in collection of data to large numbers of people at a time, as well as enable the researcher to generalize the findings to the general population given the sample will be representative of the general population. Another huge advantage is that there is consistency in the conduct of data collection, as every single participant will be presented with the same data collection form. The instruments of measurement with the mixed method questionnaire will employ scale measurements. The ratio-scale type measurements are generally the highest form of measurement as they meet all other rules of other forms of measurement. They have mutually exclusive categories, exhaustive categories, ordered ranks, and continuum of values. The open-ended portion will allow for the identification of themes in the data collected; allowing the researcher to gain more insight into the answers sought.

3.6.3 Disadvantages of Survey Questionnaires

The disadvantages of the questionnaire survey instrumentation can be challenging if the questionnaire is being sent out by other means such as through emails, online or mailing, as the response return rate can be low and not meet the intended sample size anticipated. In this study however; the researcher will hand the surveys face- to-face to avoid low responses, and the Harare CBD is a high volume area with all age groups and a great source of approaching and getting a good sample. Other challenges can ensue when respondents do not complete the survey, however there is ample time for the researcher to keep handing the questionnaire and get complete data responses in the event that some answers will not have been completed. This will ensure the reliability of data finally collected. The sample size of 100 in a high volume area on a daily basis will ensure a great turn-out of representative sample population for the study.

3.6.4 Interviews

Interviews are a form of qualitative research that involve verbal communication between the researcher and the subject participating; during which information is provided to the researcher. This measurement strategy is most commonly used in qualitative and descriptive studies (Burns & Grove, 2002). There are two types of interviews; unstructured interviews and structured interviews. Unstructured interviews may be initiated by asking a broad question and having the respondent comment. Structured interviews strategy requires the researcher to control the content of interviews; and questions are designed by the researcher before initiation of data collection. The study will adopt the structured interview technique. This technique will be useful to the study as in-depth gathering of information can be achieved. Interviewing is a flexible technique that allows the researcher to explore meaning in greater depth than is possible with other techniques (Burns & Grove, 2002).

3.6.5 Advantages of Interviews

Generally interviews have a great response rate and often allow for a more representative sample to be obtained. They allow for information gathering from those that cannot fill out questionnaires in cases of inability to read, write or illness; or those who are unlikely to complete questionnaires. They also provide non-verbal cues that can provide subtle data to the researcher; such as attitudes towards discussion of a subject or topic. The interviews are purposive in nature; therefore it will allow the researcher to interview the specific persons responsible in the area of study in various institutions.

3.6.6 Disadvantages of Interviews

The interviews are a form of self-report; so it must be assumed that the information collected is accurate; which can threaten the validity of data findings due to subject bias. Information collected may lack consistency from one subject to another, especially in unstructured interviews. They can be time consuming if the interviews are lengthy, hence returning a small sample size, or resulting in limited sample size.

3.6.7 Justification of the Measurement Tools

The survey method of the questionnaire is an efficient way for the researcher to collect data efficiently and with consistency; therefore ensuring reliability and validity of the data, as each sample is measured with the same set of questions, and are approached in the same way. The structured interviews guarantee the responses of view-points and opinions of all posed questions by the researcher, and allow the researcher to assess the non-verbal cues of communication as well as the attitudes of the interviewed participants. The usage of both measurement techniques of questionnaires and structured interviews for data collection allows for in-depth eliciting of the information, and provides more understanding to the researcher. The assurance of getting all 100 samples filled out is achievable due to the literacy rate of the population of study, and the easy worded language used in the questionnaire. The interviews can be easily conducted in the high traffic area of the CBD, which promotes efficiency and time saving for the data collection process

3.7 RELIABILITY AND VALIDITY

The study took the mixed methods approach and settled on the descriptive research design. For the methodology measurement tool; the mixed questionnaire comprising structured open-ended and closed-ended questions; along with purposive interviews is adopted taking into consideration reliability and validity of these measurement tools in data collection for the study. Reliability and validity are concepts used to evaluate the quality of research. They indicate how well a method, technique or test measures something (McCombes, 2019).

3.7.1 Reliability of the Study

Reliability is the extent to which an instrument consistently measures a concept. There are three types of reliability; stability, equivalence and homogeneity. A measurement can be reliable without being valid; however if a measurement is valid; it is usually reliable (McCombes, 2019). For this study; reliability of the sampling method used ensures the representation of the Harare residents through the simple random technique which guarantees that anyone in the target population has the chance to be selected. The binding homogeneous quality is the fact that the sample is made up of only Harare residents as one of the similar characteristics and secondly, another similarity if that all Harare residents handle waste on a daily basis is small or huge ways; as waste disposal is generally a daily practice for all people; therefore reliability of the study representation and generalization of the general population can be achieved through the sample selected.

The measurement tools of structured open and closed-ended questions provide consistency in information gathering as the questionnaire will be a standard data collection tool requested from all 95 participants; providing reliability of the measurement tool used. The Interviews are structured interviews and reliability will be gained through the answering of the specific targeted questions for each interviewee, and the purposive sampling technique allows the data collection to be drawn from the specific representatives of the institutions that oversee or police environmental littering and waste management; therefore releasing reliable information from the

actual sources.

The sources of data collection from institutions responsible for environmental management such as EMA, City of Harare and other relevant ministries that play a role in the management and policing of environmental issues, information dissemination of environmental issues, awareness and knowledge, health and wellbeing and aesthetics of the environment such as Ministries of Health, Tourism and Industry, and Education; will provide reliable information on the current status of policies and strategies, as well as the challenges faced on mitigating environmental littering; as sought by the researcher, thus providing reliability of information gathered.

The structured questionnaires and structured interview questions can be tested for reliability as they can be used at a different time in a repeated measure and still provide high test-retest reliability.

3.7.2 Validity of the Study

The usage of a semi-structured questionnaire as a data collection allows for the viewpoints and thoughts of participants to be expressed, while it takes into account some quantifiable responses that will be measured through scales, binary computations, that can be presented in visual tabular forms and charts to provide accuracy and comparability of data; thus increasing validity of measurement tool used. The scales of measurement are ratio-scale measurements which will address mutually exclusive categories, ordered ranks, and exhaustive categories of responses, and these are the highest forms of measurements that ensure validity of data.

Although with interviews; subject bias is always a threat to the validity of findings; as is the inconsistency in data collection from one subject to another (Burns & Grove, 2002); the study will try to counteract and mitigate the threat by using structured questions with each individual participant in-order to maintain consistency of questions asked that are relevant to specific research questions across all interviewed participants and noting themes in collective responses to maintain validity of data.

The interviews also allow the participants of study to express their viewpoints, without manipulation of any variables; thereby giving the true state of the viewpoints, thoughts, knowledge and awareness of the general population on the subject of environmental littering. This ensures accuracy of data collected, thereby improving the validity of the data collected, as it is a true representation of their thoughts, attitudes and behaviours.

The validity of the data collected about the participants can also be measured against the theories of Social Cognitive Theory (Bandura ,1987) and Theory of Planned Behaviours (Ajzen, 1989) in the theory, and the conceptual framework of this study in Chapter 2; to support the correspondence of attitudes and behaviours as proposed in theories.

3.8 RESEARCH ETHICS

The study has been approved by Woman's University in Africa; in Harare Zimbabwe in August, 2019. The researcher will conduct the study in the City of Harare, in the Central Business District.

3.8.1 Informed Consent

During the study; the targeted population will be asked for their participation through the researcher's explanation of what the study is about, and their willingness to participate. Once the initial verbal agreement is obtained; the survey will have a checkbox at the top to check as a second consent to taking the survey. The checkmark on the survey form will be a simple Yes/No consent, and enough to participate in the study.

3.8.2 Confidentiality

By observing participants' confidentiality in information sharing; the researcher will brief and explain to participants about the study and data collection forms to be handed out; which will ask for certain personal demographics, such as, (age, sex, level of education). The researcher will not

ask for their names or contact details, nor ask them to write their names on the survey questionnaire; in-order to protect their identities, as well as allow for participants to freely answer questions without the risk to feel exposed, or judged. In this study; the researcher is interested in the participants' responses to questions that help understand the underlying social and environmental influences that drive the participants littering behaviours.

3.8.3 Protection from Harm

The study does not anticipate any threat or harm to participants. The study is simply asking for the opinions and viewpoints of the participants on environmental issues of littering, and will be contacted in the safe day-to-day natural environment, as participants go about their usual business. The participants are kindly asked of their time to take the survey and some are asked for the time to interview. There is also protection of the participants' viewpoints or opinions shared; as they will not be asked of contact details or names. The study will ensure consent, and confidentiality is as well practiced so as not to cause any discomfort or harm to the participants.

3.8.4 Briefing

The participants will be briefed about the purpose of study and an explanation of the questionnaire, and the interview process and purpose at the beginning of the survey or interviews. The survey will include the research ethical issues mentioned above on the first page of each survey questionnaire to help participants make a decision in participation.

3.8.5 Debriefing

The 5 interviewed participants will be given an opportunity for debriefing after all five interviews are complete to afford them the opportunity to view the information the researcher will intend to include in the research findings; based on their information provided. This will also give the participants the opportunity to add or subtract or correct the researcher in the event the participants feel the need to correct the researcher.

3.9 DATA PRESENTATION, INTERPRETATION & ANALYSIS

3.9.1 Data Presentation

The collected data for the quantitative portion of the study will be presented through tables and charts. The demographic section of the survey will be analyzed using descriptive statistics. The data for the qualitative portion of the study will be done in three stages; description, analysis, and finally interpretation. The data will be presented in displays; computer generated spreadsheets.

3.9.2 Data Description

The description of data will be done with the use of data displays, and description of data in writing to explain the data displays because data displays are highly condensed. Data displays will allow the researcher to succinctly convey the main themes discovered about the research. The researcher will describe the variables and the identified themes in the study findings as exclusive categories and exhaustive categories, as well as a description of scales adopted for data collected.

3.9.3 Data Analysis

The quantitative data will be analyzed through Statistical Package for Social Science (SPSS) for descriptive analysis. The qualitative data obtained from the interviews will employ a thematic analysis of data, which is the most common method of analyzing semi-structured interviews. Thematic analysis strives to identify patterns of themes in the interview data. Analysis involves a constant moving back and forward between the entire data set, the coded extracts of data that you are analyzing, and the analysis of the data that you are producing (Braun & Clarke, 2006). Thematic analysis of data involves coding; a method of identifying categories in data, to identify patterns or themes and interrelationships. Coding; used earlier for description, also can be used to expand, transform, and re-conceptualize data, thus providing opportunities for more diverse analyses (Burns & Grove, 2002) thematic process includes six steps that the researcher will follow with the interviews information gathered; as listed below:

1. Researcher will familiarize with data collected
2. Researchers will assign preliminary codes to the data in order to describe the content.
3. Researchers will search for patterns or themes in the codes across the different interviews.
4. A review of themes will then be addressed.
5. The researcher will define and name themes as identified.
6. Finally the researcher will produce a report of findings.

3.10 CONCLUSION

The chapter provides descriptive and in-depth discussion of the mixed methods involved in the research study. The current study adopted the descriptive research design and took the pragmatism philosophical approach which is associated with mixed methods of research. The measurement tools to be used are the survey questionnaires and structured interviews to enable in-depth gathering of information. The simple random sampling method was the sampling technique of choice, and taking into account the reliability and validity of data collection discussed in detail. Finally the chapter lays out how the data collected will be presented, described and interpreted in analysis, as well as the ethical issues that have been taken into account.

CHAPTER 4

PRESENTATION, INTERPRETATION & ANALYSIS OF DATA

4.1 INTRODUCTION

This chapter will present, interpret and analyze the findings of the study, and finally a discussion of findings. The following data will present the data findings based on the four objectives of the study to answer the four questions that the researcher sought. The researcher adopted the pragmatism philosophical approach which favours the mixed method research; that the researcher wanted to adopt in the study, in-order to use both qualitative and quantitative methods of research. The study design of choice became the descriptive research design to allow for a smooth incorporation of the mixed method approach. A sample of 95 participants selected through simple random sampling, and 5 structured interviews selectively chosen with the purposive sampling method were adopted for a total sample population of 100 participants. The sample population was presented with a structured open-ended, closed-ended questionnaire. All 95 participants participated in the study. Data presentation, interpretation and analysis used the SPSS E21 for the quantitative portion of the data, and the thematic analysis for the qualitative portion of the data. The findings will be reported and organized by the 4 objectives and questions sought by the researcher. The demographic data will be discussed first and separately.

4.2 PARTICIPANTS BIO-DATA

Table 4.1 Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	41	43.2	43.2	43.2
	Male	54	56.8	56.8	100.0
	Total	95	100.0	100.0	

The sample population consisted of 43.2% females, and 56.8% males. The sample shows a close representation; however statistically; Harare has more females than males; according to Zimstats

census (2017). This slight difference did not affect the study due to the nature and of the study focusing on social and environmental influences towards littering behaviour.

Table 4.2 **Age**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 20	35	36.8	36.8
	21-30	20	21.1	57.9
	31-40	18	18.9	76.8
	41-50	15	15.8	92.6
	Above 50	7	7.4	100.0
	Total	95	100.0	

The distribution of age-groups were 36.8% of the below 20 age group; 18% of 21-30 ages, 18.9% 31-40 ages, 15.8% 41-50 ages and 7% of the above 50 ages. This indicates a true representation of the distribution of population demographics of Harare Province by Zimstats Census (2017).

Table 4.3 **Nature of Employment**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unemployed	44	46.3	47.3
	Formally Employed	14	14.7	62.4
	Informally Employed	35	36.8	100.0
	Total	93	97.9	
Missing	System	2	2.1	
Total		95	100.0	

The sample consisted of unemployed participants (47.3%); informally employed (37.6%); and a small portion formally employed (15.1%) as shown above on the chart. This also indicated a true representation of the general population's distribution of the nature of employment in the Harare Province according to the Zimstats census statistics (2017).

Table 4.4 **Level of Education**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary School	10	10.5	10.6	10.6
	Secondary School	69	72.6	73.4	84.0
	Diploma	5	5.3	5.3	89.4
	Post-Graduate	2	2.1	2.1	91.5
	Graduate	8	8.4	8.5	100.0
	Total	94	98.9	100.0	
Missing	System	1	1.1		
Total		95	100.0		

Sample consisted of participants with a literacy rate of 98.9%; with 72.6% having attended high school. This also resonates with the population distribution reported for population distribution of literacy in Harare province according to Zimstats Census (2017), validating the reliability and validity of the sample population selection as a representation of the general population.

Table 4.5 **Place of Residence**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High Density	55	57.9	57.9	57.9
	Low Density	39	41.1	41.1	98.9
	3	1	1.1	1.1	100.0
	Total	95	100.0	100.0	

Findings show that 57.9% of the participants reside in the high population density areas; and 41.4% in the low population density area. This shows some resonance in that; majority of the Harare population lives in high density areas; again validating the reliability of the sample population according to the population distribution of Harare residents by area of residence.

4.3 FINDINGS PRESENTATION, INTERPRETATION & ANALYSIS

4.3.1 ASSESSING UNDERLYING LITTERING ATTITUDES AND BEHAVIOURS AMONG THE RESIDENTS OF HARARE

RESEARCH QUESTION: What are the underlying causes of littering attitudes and behaviours among residents in Harare?

Table 4.6 Frequency of Littering

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Daily	36	37.9	37.9
	Often	15	15.8	53.7
	Rarely	29	30.5	84.2
	Never	15	15.8	100.0
	Total	95	100.0	100.0

Participants were asked of their littering frequencies. The responses indicated that 53.7% of the population practiced littering regularly; with 15.8% claiming they do not engage in the littering behaviour; leaving 30.5% claiming rarely littering. This shows Harare residents are engaged in negative attitudes and behaviours of handling waste as evidenced by 83% of residents engaged in some littering habits to some degree.

Table 4.7 Importance of a Clean Environment to Residents

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Important	82	86.3	90.1
	Somewhat Important	4	4.2	94.5
	I don't Think About It	2	2.1	96.7
	Not Concerned	3	3.2	100.0
Total	91	95.8	100.0	
Missing	System	4	4.2	
Total		95	100.0	

Participants were asked about how important a clean environment was to them on a personal level. It showed 91 respondents (90.1%) indicating; a clean environment was “Very Important”.

This shows the residents of Harare agree a clean environment is very important; yet their littering behaviours are inconsistent with behaviors that maintain a clean environment. It also indicates that residents may know they need a clean environment and still practice the littering habit; showing that the attitudes and behaviours are negligent and an indication of residents ‘lack of individual policing, accountability and social responsibility.

A follow-up question wanted to know how participants felt about litter in the environment in their own words. 5 themes were identified; each theme was measured against the number of times mentioned per 95 participants; starting with highest responses to lowest responses respectively. Some participants mentioned more of either themes in their responses and were counted to contribute to the percentages of that particular theme.

Table 4.8 How Participants Feel about Litter in the Environment

FEELING	NUMBER OF MENTIONS	PERCENTAGE
It is irritating	31	32.6%
It causes diseases	31	32.6%
because there no bins along roadsides	31	32.6%
more environmental education is needed	31	32.6%
they need to hire more cleaners	31	32.6%

The findings indicated that the majority of residents (31.1%) felt that litter in the environment was irritating with only 2.2% of participants indicating the need to hire more workers to clean and 7.5% claiming their litter attitudes behaviours were as a result of lack of bininfrastructure provision along roadsides. According to Respondent 1 (Environmental Management Agency) (EMA); they have made observations that residents' behavior patterns of those that are aware of anti-littering laws tend to litter in hiding, and that when the officers are there; no-one is caught practicing the littering habits.

“The challenge we have with the people is their behaviour patterns where they practice littering in hiding; usually in the absence of officers and after hours when no officers are on duty, and that’s when most dumping is done; at night time when no-one can see them;

so we believe the residents are aware that they should not litter. The majority of residents know not to litter but I don't know what drives such attitudes and behaviours.”

This showed that close to 60% of the population feel litter is a problem by their indication that it is irritating, and their indication that there is need for education awareness and their knowledge of the health implications of littering; however, some residents (10%) have indicated negative attitudes and behaviours in how they view litter in the environment by their expectation of hiring more people to clean after their litter, and excuses of litter practices due to bins unavailability in most roadsides; demonstrating a lack of social and individual responsibility and individual policing of littering attitudes and behaviours.

Table 4.9 Handling of Rubbish When Rubbish Bins Are Not Present

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Anywhere	14	14.7	14.7
	Ground	7	7.4	22.1
	I Keep it	62	65.3	87.4
	Roadside	12	12.6	100.0
	Total	95	100.0	100.0

Participants were asked where they dispose of rubbish when a bin is not present. The study indicated 65.3% claimed to keep the rubbish with them, while a combination total of 35% admitted to throwing either; anywhere, roadside or ground.

According to Respondent 2 (City of Harare) (CoH); highly littered areas are more noticeable with residents in Land Barons allocated residential areas; due to the lack of proper servicing in these residential areas by the city council, as they are not covered lawfully to gain inclusion in waste management services; causing a high rise of litter being thrown in streets from several dump sites within these communities.

“The overflow of waste accumulation at the dumping sites of Land Barons allocated residences is usually blown by wind and finds its place everywhere in the streets, and the habitants in these areas lack coverage by the local authority in provision of garbage bins and waste refuse collection; so they end up throwing the rubbish anywhere. These areas normally have more than one site of heavy dumping by residents, and the more litter they see piled up; the more they continue to dump on the same highly littered sites. It is a problem; and even in legally planned residential areas such as Dzivarasekwa, Highfields; they are highly affected areas; and the habits of littering are much of a problem.”

This is an indication that most residents know about proper waste disposal practices; however a considerable size population (35%) demonstrates negligent attitudes and behaviours of waste disposal, as well as the surge in land barons allocated residential areas; causing litter accumulation in the environment. This shows that the majority of the littering is due to negligence of proper waste disposal; as well as the residents’ habitual normalization of littering habits in areas that are already littered; causing more accumulation of litter; that eventually finds its way in the environment.

Table 4.10 Rubbish Handling While Travelling in Vehicles with no Rubbish Bins

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Out the Window	14	14.7	14.7
	Hold on to it	68	71.6	86.3
	Leave in the vehicle	13	13.7	100.0
	Total	95	100.0	100.0

When asked where they put rubbish while travelling in a vehicle and a bin is not provided in a vehicle; 71.6% claimed to hold on to the rubbish; while 28.4% disposes rubbish out the windows or leave it in the vehicles. This shows that residents tend to respect the vehicles travelled on; as indicated by over 71% claiming to hold on to their rubbish and disposing it off from the vehicles. This shows personal or private spaces gain more responsibility and accountability than the public

spaces.

4.3.1.1 Analysis of the Littering Attitudes and Behaviours among the Residents of Harare

Findings have shown that the residents of Harare generally agree to the importance of a clean environment with 98% agreeing to the importance of a clean environment; however; their littering behaviours are inconsistent with behaviours that maintain a clean environment; as 83% of residents admitted they are engaged in littering behaviours to some degree. Even though majority of the Harare population finds litter as irritating, and having knowledge of the health implications of littering and realizing the need for awareness education on the subject of littering; findings also showed that residents still practice the littering habit giving off an indication that the residents' attitudes and behaviours are negligent, and they lack individual policing, accountability and social responsibility to their environment. Some residents owed their littering behaviours to the excuse that there is lack of binfrastructure in roadsides, while some simply litter and expect the local authority to hire more workers to clean after them; again indicating negligent individual attitudes and behaviours, lack of accountability of own behaviours and the lack of social responsibility; mainly due to residents' lack of individual policing of attitudes and behaviours and responsibility. Residents showed they respect their personal or immediate environment and litter less in such spaces; indicating that residents lack social responsibility in their attitudes and behaviours, and therefore residents see the environment management as the responsibility of local authority. The residents also indicated their littering attitudes and behaviours are justified if an area is already with litter, and they see it as ok to practice the behaviour in those spaces that show some levels of litter.

4.3.2 ASSESSMENT OF AWARENESS ON IMPACTS OF ENVIRONMENTAL LITTERING

RESEARCH QUESTION: To what extent is the general population of Harare aware of the impacts of environmental littering?

Table 4.11 Prevalence of Litter in Respective Communities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	49	51.6	52.7	52.7
	No	44	46.3	47.3	100.0
	Total	93	97.9	100.0	
Missing	System	2	2.1		
Total		95	100.0		

Researcher wanted to find out the prevalence of litter in respective communities of participants, and 52.7% claimed their communities were highly littered, while 47.3% claimed cleaner communities.

According to Respondent 2 (CoH); there has been an influx of population in Harare due to economic hardships where people expect to earn a better living. This has caused the City of Harare to face challenges in providing services of waste collection as planned in residential areas, especially in high density areas. The planned once a week collection of refuse is not adequate per population generated waste. The overflow always finds itself in the dumping areas and blown back into streets thereby resulting in highly littered communities.

“Most affected areas are high density areas especially Dzivarasekwa, Highfields, Budiro, and Warren Park, because City of Harare does planning for 6-7 people per residential household, but majority of residences carry 15-25 people in a residence, and the waste collection is scheduled for once a week; but the waste is full before the next scheduled collection day, so the rest of the overflow finds itself in the street corners.”

The admittance of a high prevalence of litter in over half of Harare communities indicates the

residents lack holistic awareness on proper waste disposal resulting in highly littered communities, which indicates a lack of awareness on the implications and impacts of environmental littering; however; according to Respondent 2 (CoH); the prevalence of litter in highly populated areas is contributed by ineffective and inadequate collection of waste due to overpopulation and city council not able to meet the demand; resulting in communities practicing dumping; which results in some litter generation, and wind-blown litter on streets and communities; increasing the numbers of people continuing to littering on the already littered spaces.

Table 4.12 Environmental Awareness on Littering Impacts

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	60	63.2	63.2	63.2
No	35	36.8	36.8	100.0
Total	95	100.0	100.0	

Participants responded to the question of whether they had come across any education or awareness information on impacts of environmental littering and 63.2 % indicated they had come across some awareness information; while 34.7% had not. This shows that the majority of residents in Harare have some form of awareness on the impacts of environmental littering.

A follow-up question further assessed what the participants actually learnt in the awareness information received. The question was presented as; “What have you learned about littering? Out of the 60 participants that claimed to have had some form of awareness on environmental littering; 7 themes in order of highest to lowest of responses were identified to be as follows:

Table 4.13 What Residents have learnt from the Awareness Information Received

IDENTIFIED THEMES	NO. RESPONSES
It causes diseases (Cholera, Malaria, a few mentioned Typhoid)	30
We learned not to throw rubbish everywhere to keep environment clean	27
It causes pollution; with majority specifically mentioning land pollution	14
Destroys the environment	7
Mosquitoes	5
Accidents caused by throwing rubbish outside moving cars	3

Rubbish outside moving vehicles, and falls from banana peels causing injury	2
---	---

Findings indicated that out of the 60 participants that responded to the question; over half of the 60%; which is around 30% of respondents, have some form of knowledge on the subject of littering and the implications and impacts of environmental littering. This shows that the majority of the general population has some form of environmental awareness.

To further assess public awareness on the impacts of environmental littering; an open-ended question asked what problems are caused by throwing rubbish everywhere in the environment, and the identified themes shown below;

Table 4.14 Residents Knowledge on Impacts of Environmental Littering

IDENTIFIED THEMES	NO. RESPONSES
It's a health hazard; causing diseases like cholera, malaria, diarrhoea, and typhoid; AND 7 out of the 30 responded with a combination (diseases, pollution, accidents, and destruction of beauty in the environment) etc.	30
Pollution of land, water, and rivers	14
Destroys the beauty of environment	16
Mosquitoes	5
Mosquitoes	3

Findings showed 27 non-responses, and 68 respondents, and that at least over 60% of the participants had some form of a general awareness on the impacts of environmental littering. The 7 participants out of the 68 responses (10.3%) responded with a holistic knowledge on the impacts of environmental littering.

According to Respondent 1 (EMA); they carry out awareness education campaigns in schools at all levels, radio, and communities; as well as work with the business community with the recently signed presidential clean-up once a month campaign. EMA respondent comments;

“We believe that the people are aware they shouldn’t litter because we have campaigns nationwide, in schools, radio, and we go into communities at times; and we are open to be invited by the communities, and we sometimes go into churches on invite and in the business community when invited; so people just choose to litter. EMA wants to understand why it is that they don’t litter when the officers are there?”

This shows that at least 10% of the residents in Harare have holistic awareness on the impacts of environmental littering, and over 60% of residents having some general knowledge, while 40% may or may not have the general awareness as they didn’t respond to the question. Overall, the majority of residents in Harare have some general awareness on the impacts and implications of littering with very few having a holistic awareness on the impacts of environmental littering.

Table 4.15 Mode of Access to Awareness Information on Environmental Littering

	Frequency	Percent	Valid Percent	Cumulative Percent
	Primary School	5	5.3	6.8
	Secondary School	24	25.3	32.9
	Radio	19	20.0	65.8
	Television	2	2.1	68.5
	Billboards	1	1.1	69.9
Valid	Anti-Litter Campaigns	10	10.5	83.6
	Presidential Campaign	8	8.4	94.5
	WhatsApp	1	1.1	95.9
	Workplace	2	2.1	98.6
	Other	1	1.1	100.0
	Total	73	76.8	100.0
Missing	System	22	23.2	
Total		95	100.0	

Researchers wanted to know where the participants got the awareness information from. The findings showed the majority of awareness education information was gained through Schools (39%), followed by Radio (26%) and finally; Anti-litter Campaigns (24.5%), as indicated in the table. This shows that currently; schools, radio infomercials and anti-litter campaigns play much of the bigger role as the mode of information dissemination on environmental awareness.

Table 4.16 Anti-Littering Advocacy in Communities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	34	35.8	36.2	36.2
	No	60	63.2	63.8	100.0
	Total	94	98.9	100.0	
Missing	System	1	1.1		
Total		95	100.0		

Researcher wanted to know if communities had environmental awareness information dissemination from any anti-litter pro-environmental individuals in their respective communities; and 34% of participants claimed anti-litter advocacy was present in their community, while 60% claimed no one spoke against littering in their communities. This shows that there is very little anti-litter advocacy and information dissemination on environmental littering awareness information in the residential communities or majority of the residents of Harare on impacts of environmental littering.

A follow-up open-ended question wanted to know who speaks against littering in their respective communities. Results from 34 responses indicated;

Table 4.17 Who Speaks Against Littering in Your Community

ANTI-LITTER ADVOCACY REPRESENTATIVE IN COMMUNITIES	RESPONSES
Community Residents /Landlords/Community Elders	19 responses -55.8%
Councillors	7 responses -20.6%
Voluntary Anti-litter Campaigns	5 responses - 14.7%
Schools	4 responses - 11.8%
EMA	3 responses - 8.8%
City Council	2 responses - 5.9%

This indicated that currently residents of communities take more initiative in their communities in speaking against environmental littering than any other anti-litter stakeholders, followed by the city councilors.

According to Respondent 1 (EMA); EMA holds anti-litter campaigns in schools of all levels, public and private; through their program initiative of “Teach them Young Program; radio

programs, and engaging the business community to participate in anti-litter campaigns, as well as community visitations upon invitation from locals. Respondent 1 also advised that they engage public figures in publicity campaigns from time-to-time in an effort to social-market the message of “Zero-Tolerance to Litter”; with public figures such as; Dereck Mpofo as their environmental issues ambassador; Jah Prayzah (2018); and Tally Bee (2018)

This shows that EMA initiatives in bringing environmental awareness is yet to effectively reach the public as the residents of Harare claim there is not much of any anti-litter advocacy in their communities, and that more of the anti-litter advocacy comes from the residents themselves and councilors with little outreach into communities from EMA.

4.3.2.1 Overall Analysis on Awareness on Impacts of Environmental Littering

Research findings wanted to assess the awareness of the general population in Harare on the impacts of environmental littering. Finding showed that the majority of residents in Harare have some form of awareness on the impacts of environmental littering; although their admittance of high prevalence of litter in their communities in over half of Harare communities shows that residents lack holistic awareness on proper waste disposal etiquette; resulting in highly littered communities, indicating a lack of awareness on the implications and impacts of environmental littering. Although high prevalence of litter can be an indication of lack of awareness on the impacts it has on the environment, humans and animals; Respondent 2 (City of Harare); also alluded that the prevalence of litter in highly populated areas is also contributed by ineffective and inadequate collection of waste due to overpopulation; and that the city council is unable to meet the demand to collect waste. This results in communities practicing dumping that creates litter generation, that then gets blown onto the streets and everywhere in communities; increasing the numbers of people who will then continue to litter on the already littered spaces. Some residents of Harare claimed they receive environmental littering awareness information through schools, radio infomercials and anti-litter campaigns. These modes of information dissemination play much of the bigger role as channels of information dissemination on environmental awareness in the general public, however; in the general residential communities, anti-litter

advocacy information was reported to come from fellow residents. This report was from about 30% of the residents pointing it out, which means that the majority of the public residents are without holistic anti-litter awareness on the environmental impacts of littering. Overall, the majority of residents in Harare have some general awareness on the impacts and implications of littering with very few having a holistic understanding and awareness on the impacts of environmental littering. Findings also show that EMA initiatives in bringing awareness on environmental littering subject is yet to effectively reach the public as the residents of Harare claim there is not much of any anti-litter advocacy in their communities; and an interview with EMA also confirmed that EMA information publicity is targeted more in schools, radio and anti-litter campaigns in partnership with the business community; and in local communities it was mainly by invitation from local communities and other pro-environmental stakeholders.

4.3.3 ASSESSMENT OF EFFECTIVENESS OF CURRENT EFFORTS BY ANTI-LITTER ENVIRONMENTAL STAKEHOLDERS

RESEARCH QUESTION: How effective are the current efforts on awareness campaigns by anti-litter environmental stakeholders in Harare?

The researcher wanted to know how much the general population is aware of EMA (Environmental Management Agency); and its responsibilities as an institution. The 1st question asked who EMA was, and (62.1%) of the participants were not familiar with what EMA stands for, and only (37.9%) knew what EMA stands for. This shows that the majority of residents are not very much acquainted with EMA; indicating that EMA needs to work on its visibility to the general population.

Another follow-up question wanted to know; “What is EMA’s responsibility? 2 themes were identified on residents’ knowledge of EMA’s responsibilities by 68 respondents.

Prevention of fires by not burning grass, and prevention of cutting trees. These responses came together on almost all of the participants who noted their response as EMA’s only responsibility from 32.6% of participants

1. Keeping the environment clean was indicated by 36.8%, and only 20% of the total participants specifically pointed to the issue of environmental littering, while 48.6% responded with just “Management of Environment, or Protection of Environment.

This showed that the general population in Harare is not very familiar with all the responsibilities and operations of EMA; and more visibility in the general public is warranted on the subject of environmental littering and public awareness.

According to respondent 1 at EMA; the agency is currently engaged in clean-up awareness campaigns and registrations from the business community and any stakeholders that would like to get involved in clean-ups. They have seen a change in the number of participants since the presidential call for a clean-up monthly. Respondent 1; also mentioned current efforts include bininfrastructure provision at large events; such as those hosted by the government. They have made several initiatives in an effort to bring awareness to littering and recycling; and partnering with public figures, recycling companies and other stakeholders in the business community in Harare; along with other initiatives such as; “Teach them Young in School”.

“As EMA; we are engaged in enforcement awareness, and we engage with other stakeholders, such as local council, ZRP, Ministries and we also partner with other private stakeholders who do recycling, and we do inspections and prosecutions, as well as train subcommittees; such as councilors and municipal police on environmental issues of waste, littering and recycling so they go into communities to implement and also monitor the communities. We have also worked with the Ministry of education in the inclusion of environmental littering and environmental issues in the curriculum about 3 years ago now. We are involved with helping companies that take initiatives in the zero-litter promotion such as Delta Beverages with “Make a Difference” (MAD) initiative. We also conduct surveys for instance; the Bin Survey done in Harare city to see the availability and numbers of bins versus the population. EMA also has the Education Unit which is involved with the education and publicity of environmental issues; such as,

the solid waste separation for recycling to reduce litter, as well as reporting on all radio stations in Zimbabwe. We also feature in the Herald Newspaper, almost every Tuesday on various environmental issues, and now we have the monthly clean-up campaign since the signing of the presidential clean-up day; where companies and organizations or any interested parties can sign up and register on our website; to join the organized campaign monthly”

This shows that EMA is making positive initiatives on anti-litter promotion; however the majority of the initiatives mentioned in the interview indicated that EMA currently more engaged with the business community and in schools; with more emphasis on the recycling aspect of environmental management. This shows that EMA needs to devise more strategies of reaching the communities and the majority of residents that are not employed or participants of the business world which are the majority of the Harare residents; as findings show EMA is commonly known to the general public as an agency that prevents the burning of grass to mitigate wildfires and prevention of tree cutting; first and foremost, giving the impression that EMA is placing more emphasis on many of its other environmental management tasks and responsibilities, and less focus on engaging the greater public on the issue of environmental littering.

Table 4.18 Participation in Clean-Up Awareness Campaigns

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	40	42.1	50.0	50.0
	No	40	42.1	50.0	100.0
	Total	80	84.2	100.0	
Missing	System	15	15.8		
Total		95	100.0		

The researcher wanted to know if participants had ever participated in a clean-up campaign.” Results showed 50% have participated in at least 1 clean-up; while 50% had never participated in a clean-up. This showed an equal amount of residents’ participation in clean-up awareness campaigns indicating that there is considerable willingness of residents in participating in the anti-littering campaigns.

According to respondent 1 (EMA); EMA is involved in organization of clean-ups in schools, business communities and communities nationwide; and the presidential campaign has improved the participation of the public in taking initiative towards cleaner environments. EMA has indicated that currently it has been pushing for partnering with pro-environmental stakeholders to curb the issue of littering through promotion and engagement with recycling partners such as PetrecoZim, Zim Sunshine Group, Clean City-Econet, Ecogreen, Zimbo Green and The Recycling Lady. These partners are engaged in various communities in cleaning up litter in streets and reduction of dumpsites as they have the capacity to bring equipment that the Agencies and local authority lack as resources.

“The recycling partners are helping a lot and there has been notable difference, as they are involved in clean up especially in high density areas to pick litter and convert it into recyclable materials, because there is money in waste. Partners like clean city also engage with local authority in clean-ups.”

According to respondent 2 (CoH); the local leadership in communities holds meetings with residents at least 4 times a year to ask for citizens’ participation in pro-environmental management of waste and litter reduction strategies. They usually invite the local authorities and EMA to educate the residents on ways to separate waste at source instead of throwing it away to realize the benefits of recyclable waste.

“The initiative has been improving as more and more people are now moving around streets collecting litter that can be used for generating income; however the problem we face is the attendance of residents at such called meetings; as turnover is usually very low because people are dealing with economic challenges, and would rather focus on bread and butter issues, and they will not pay attention to the awareness campaigns going on. These initiatives usually work better in stable economies where people are comfortable and they have to worry less about putting food on the table; and are more inclined to have extra time and drive to focus on the issue of the environment.”

The CoH respondent also indicated that the challenge they have in communities in bringing awareness to curb the issue of littering or reduction of problem was due to the limited allocated resources to be able to effectively bring awareness campaigns in communities.

“Awareness is done but it’s not effective due to limited allocated funds; otherwise we realize there is a need for heavy mass education on littering.”

It showed there are some considerable strides towards clean-up awareness campaigns by pro-environmental stakeholders that are targeted at bringing environmental littering awareness and promoting recycling of litter for litter reduction and money generation from recycling activities in the environment, however there is little participation from residents even when meetings are called out. The low turn-out of residents is alluded to by the economic hardships that residents are constantly and continually subject to; that it leaves very little time for residents to place value on the environmental issues before the bread and butter issues.

Table 4.19 Possibility of Participation in Future Clean-Ups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	63	66.3	70.8	70.8
	No	26	27.4	29.2	100.0
	Total	89	93.7	100.0	
Missing	System	6	6.3		
Total		95	100.0		

When asked if participants will be willing to participate in a clean-up in the future; 63% indicated willingness in future participation; while 26% indicated no interest. This showed that the majority of residents would support the clean-up campaigns initiatives to bring environmental awareness education, and residents indicated their willingness to work toward cleaner environments.

Table 4.20 Awareness on Law Enforcement of Fines or Arrests for Littering Violators

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	41	43.2	43.2	43.2
	No	54	56.8	56.8	100.0
	Total	95	100.0	100.0	

Participants were asked if there are fines or arrests for littering and 56.8% were not aware of the law against environmental littering; while 43.2% were aware of the law. This indicates the lack of effective information dissemination to the public and a lack of effective proactive social-marketing by pro-environmental management institutions and stakeholders to catch the attention of residents in bringing viral awareness to the general public on environmental littering laws and regulations.

Table 4.21 Number of Individuals Fined or Arrested for Littering

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	92	96.8	100.0	100.0
Missing	System	3	3.2		
Total		95	100.0		

Research findings indicated that out of all the participants who responded; 92 out of 95 participants had never been fined for littering; and 3% didn't respond to the question. This shows that there is a lack of law enforcement from the responsible parties in enforcement of fines and arrests on littering violators.

According to Respondent 1 (EMA), there have been very few arrests due to the small number of officers per population; and that there were only 6 officers that cover the monitoring of environmental littering in Harare Metropolitan; which makes it difficult to provide effective monitoring. The respondent didn't have the statistics readily available at the time of the interview on the number of arrests made per set period.

“Harare has only 6 officers that cover Harare on monitoring and enforcement of laws; which is the challenge of staff; overpopulation versus staff. And also when these officers are there; people do not litter; it’s in their absence that they litter, and most litter in hiding, and after hours when the officers are already off-duty.”

On the issue of fines and arrests for littering; Respondent 2 (CoH) mentioned their municipal police had no arresting powers to the general public; as the municipal police was a unit specifically introduced to curb illegal vending; however the local authority had bi-laws that target environmental littering; where they act to hand-over any litter violators to the ZRP who have the statutory mandate to arrest and implement the law. Respondent 2 (CoH) explained that the Local Authority, EMA and ZRP all work together on the issue of environmental littering where EMA has the Statutory law and Local Authority formulates the bi-laws while ZRP enforces the fines or arrests although any of the three organs have a right to arrest and hand them over to ZRP for arrests or follow-up on the EMA or CoH fines. They also mentioned there is the citizens’ arrest law that gives every citizen the right to arrest and take to the appropriate authority for fines if they catch anyone littering.

According to Respondent 2; the challenge in fines was due to the fact that there is only 1 inspector in charge of 7 districts with the mandate to curb environmental littering; posing overwhelming challenges on the manpower per population. Another challenge mentioned was the lack of enforcement power by the local authority municipal police to arrest or fine violators; due to political arm interference; making it difficult to control illegal vending and land barons who give rise to litter in their spaces due to occupation in subserviced residential areas which lack proper waste management facilities thereby giving rise to litter generation from improper disposal of waste which then continuously overflows into the environment and finding its way in the streets.

The researcher also wanted to find out the availability of binfrastructure in various public places; and whether the general population takes notice of binfrastructure when they are out and about. 8

frequently visited places were selected for survey as shown below by each table of results. The question posed to participants asked; “If you visit these places below; do they have rubbish bins outside? Please indicate by selecting; YES, NO, NEVER CHECKED.

Below are the findings of the 8 various places researcher assessed on.

Table 4.22 Provision of Binfastructure in Churches

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	73	76.8	78.5
	No	16	16.8	95.7
	Never Checked	4	4.2	100.0
	Total	93	97.9	100.0
Missing	System	2	2.1	
Total		95	100.0	

Findings indicated 78.5% churches had outdoors binfastructure within community churches. This shows community members like their immediate environments they participate in to be litter-free.

According to Respondent 4 (Rugare Community Anti-litter Committee) RCAC; the community churches have improved since its inception 5 years ago; with significant improvement noted in the past year owing to the presidential anti-litter campaign initiative; nationwide. RCAC also expressed that they have encouraged churches to dig waste disposal holes that remain covered with “Marata” (metal roofing material) to control flies, humans and animals from digging into them; and in-order to circumvent the lack of rubbish bins to control littering.

“We have encouraged “Mapostori (outdoor under-the-tree apostolic congregants)” to make sure they have rubbish pits to contain litter, to prevent diseases, because there is no way that the council will be able to collect rubbish in these areas, and the responses have been good; especially this year with President Clean-Up Day” , but the challenge is that some residents are stubborn, because they don’t respect us as we are community neighbours and they would rather listen to local authority but there is a very big change

since we began 5 years ago.”

This shows that certain residents of Harare are starting to take initiative in managing waste disposal to avoid high littered communities, to promote cleaner and healthier environments owing to anti-litter campaigns that bring environmental awareness to residents.

Table 4.23 Provision of Binfastructure in Schools

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	82	86.3	89.1
	No	8	8.4	97.8
	Never Checked	2	2.1	100.0
	Total	92	96.8	100.0
Missing	System	3	3.2	
Total		95	100.0	

Findings indicated 89.1% of participants noticed outdoor binfastructure at schools. This shows the majority of schools have positive initiatives in controlling environmental littering.

According to respondent 1 (EMA); the institution has campaigns within schools, as an initiative to stop environmental littering; and promotes the provision of bins within the schools.

“We are continuously going to all schools in Harare, and Nationwide, at all levels, from primary school, secondary school, universities, even private schools with our program, “Teach them Young”, to bring awareness and make sure they grow up with good habits of waste disposal than currently is going on.”

This shows that schools are responding positively to provision of binfastructure in schools to mitigate litter in the environment; and that in schools on environmental littering awareness is a positive initiative in a positive direction.

Table 4.24 Provision of Binfastructure in Workplaces

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	60	63.2	71.4	71.4
No	13	13.7	15.5	86.9
Valid	Never Checked	10	10.5	98.8
	11	1	1.2	100.0
	Total	84	88.4	100.0
Missing	System	11	11.6	
Total		95	100.0	

Participants (71.4%) claimed availability of bins within their workplaces and acknowledged the presence of outdoor binfastructure around workspaces. This shows that the business premises are well kept than the common public environment spaces; as majority of residents have indicated the presence of binfastructure present

According to respondent 2 (CoH); business premises are mandated to provide binfastructure as a requirement to do business and handle waste management disposal within their places of business; governed by legislation and bi-laws. According to Respondent 1 (EMA); the business community is encouraged to participate in pro-environmental activities in an incentive-based program that ensures that they promote and market their businesses' visibility through litter clean-up maintenance, and binfastructure provision within portions of specified areas in the greater Harare area.

This shows that the business community is making strides at pro-environmental activities; mainly because of their businesses' social-marketing incentives; as well as the mandate to uphold and abide by the governing laws that govern environmental littering laws and bi-laws; to be able to participate and continue to do business in Harare, Zimbabwe. Residents have also noted the presence of binfastructure in workplaces, showing that business premises are better kept than the common public environment spaces.

Table 4.25 Provision of Binfastructure in Parks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	56	58.9	64.4	64.4
	No	18	18.9	20.7	85.1
	Never Checked	13	13.7	14.9	100.0
	Total	87	91.6	100.0	
Missing	System	8	8.4		
Total		95	100.0		

The binfastructure provision in recreational parks was noted by 64.4% of the participants; while 14.9% of the participants had never paid attention. This shows close to a quarter of the population pays no attention to their environment in terms of availability of litter bins in public places.

According to respondent 1 (CoH) there are bins provided in the Harare parks; however there may need to be more bins in place due to the increasing numbers of population, and the need to replace damaged binfastructure. According to Respondent 4 (Rugare Community Anti-litter Committee) (RCAC); the community football arenas for the residents do not have bins in place; however the committee through the teachings of EMA have dug waste ground dumpsters that the community has designated for waste disposal to stop every resident from randomly littering the community. Respondent 3 (Ministry of Tourism and Environment) destination tourist attractions could use more binfastructure in recreational parks and tourist destinations; however the partnering with environmental stakeholders significantly helps to reduce the burden of litter with the recent engagement of Clean City, and Ecogreen; to name a few; with EMA, and local councils; who provide clean-ups targeted at recycling materials collection from litter and bin provision, as well as machinery and equipment for environmental cleaning.

This shows that there is need for more bins in public places to accommodate the binfastructure to population ratios; however there is the need for the public to be cognizant of the binfastructure provision in public places; to avoid unnecessary littering of the environment that occurs due to lack of noticing the designated disposal bins provided.

Table 4.26 Provision of Binfastructure along Main Roads

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	34	35.8	37.8	37.8
	No	49	51.6	54.4	92.2
	Never Checked	7	7.4	7.8	100.0
	Total	90	94.7	100.0	
Missing	System	5	5.3		
Total		95	100.0		

Participants (54.5%) indicated that main roads lack binfastructure while 7.8% have never checked the facility provision. This shows that road servitudes are more prone to high levels of litter due to lack of binfastructure or lack of noticing the binfastructure in place.

According to Respondent 1 (EMA); it is the responsibility and mandate of ZINARA through the Ministry of Roads and Transport to maintain roads under the agreed contracts of road infrastructure development currently in place. The maintenance includes provision of binfastructure, trimming of grass and any other road services on these main highways. Respondents also commented that inter-city roads had bins on most lay-by spots; however the distances within the next lay-by area may be further apart from each other that some litter will find itself in-between these designated points.

This shows that there may be need for more binfastructure along main roads to shorten the distances of one bin to the next to reduce litter along main highways, as the majority of Harare residents have indicated they have actually not seen bins along the main highways; due to the bins being placed only at rest lay-by areas that are very far from each other; leaving the main roads servitudes prone to litter accumulation.

Table 4.27 Provision of Binfastructure in Shopping Centers

		Frequency	Percent	Valid Percent	Cumulative Percent
	Yes	68	71.6	73.9	73.9
	No	19	20.0	20.7	94.6
Valid	Never Checked	4	4.2	4.3	98.9
	12	1	1.1	1.1	100.0
	Total	92	96.8	100.0	
Missing	System	3	3.2		
Total		95	100.0		

Findings indicated that 73.9% asserted presence of outdoor binfastructure at shopping centers, while 20.7% claimed there are no bins at the shopping centers; and 4.3% having never taken notice. This shows that some residents do not look out for bins when out and about, and some residents do not know if there are bins around.

Respondent 2 (CoH) indicated that there are bi-laws that require that all shopping centers and public areas have binfastructure in place; and the inspectors regularly monitor and inspect that binfastructure provision and refuse collection is in place.

“There are rubbish bins in every shopping center but there can always be more provided bins off course; because some areas especially high density areas have more population per number of bins in place for sure.”

This shows that there is a need for more bins around shopping centers as some residents may not notice them in place if there are a few bins provided; and some residents may actually claim there are no bins at their respective shopping centers if they do not spot one due to few numbers of bins provided.

Table 4.28 Provision of Binfastructure in Residential Streets

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	18.9	20.2	20.2
	No	63	66.3	70.8	91.0
	Never Checked	8	8.4	9.0	100.0
	Total	89	93.7	100.0	
Missing	System	6	6.3		
Total		95	100.0		

Out of 95 participants; 89 responded, and 70.8% of residential streets are reported as lacking binfastructure while 20.2% of certain residential streets in some communities had binfastructure. This shows a lack of adequate provision of binfastructure in the majority of Harare residential communities.

According to Respondent 2 (CoH); the city has not been able make provision for binfastructure in residential streets due to the financial demands it would entail for the city to adopt such provision; considering the state of the economy having not gained recovery in decades. CoH indicated that they have recently been able to engage private partners to mitigate the problem of littering; who have significantly helped to reduce litter in residential streets; as they bring machinery such as front-end loaders, tippers, and street pickers.

“The city has been inviting partners to assist or take over in terms of waste management which will also reduce the littering problem, because these partners; such as Clean City, in low density areas bring street pickers, and door-to-door waste removal on a daily basis on set schedules in these areas, and Juluka in the high density areas; recently engaged to do street picking, and door-to-door removals; starting with Kuwadzana, Highfields and Budiriro. This is showing great improvement in litter reduction in residential streets of these areas because less residents are not going to dump litter on street corners, and these partners pick the streets for recyclable materials.”

This shows that residential areas lack the bininfrastructure facilities due to the financial constraints the city would incur given the economic situation in the country; however considerable strides to partner with private organizations in provision of waste removal, recycling and littering equipment and manpower is now in progress and the city asserts its continuing to seek partners to reduce litter in the residential streets and environment, even though the residential streets will not gain bininfrastructure for now.

Table 4.29 Provision of Bininfrastructure in Gathering/Events Places

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	64	67.4	70.3	70.3
	No	14	14.7	15.4	85.7
	Never Checked	13	13.7	14.3	100.0
	Total	91	95.8	100.0	
Missing	System	4	4.2		
Total		95	100.0		

Gatherings and events indicated 70.3% participants noted provision of bininfrastructure; while 14.3% has never taken notice. This shows that some residents may still litter even with bininfrastructure present, due to lack of taking the time to notice availability of bins provided.

According to Respondent 3 (Ministry of Tourism and Industry); bininfrastructure is always provided at all events they participate in; however even with the bininfrastructure in place; there is still some litter left in the environment at the close of events; and some bins would be half empty; yet the litter is spotted everywhere. Respondent 1 (EMA) commented that the challenge they noticed was that citizens perform littering in hiding; as they have identified that citizens do not litter when an officer is present; however they litter when they think no-one is noticing even in close proximity with rubbish bins. This shows that some residents do not take notice of the bininfrastructure in the environment; hence may continue to litter out of habit; even with the bins in place.

4.3.3.1 Overall Analysis on Effectiveness of Current Efforts by Anti-Litter Stakeholders

Findings showed that the general population in Harare were not very familiar with all the responsibilities and operations of EMA; and residents showed that EMA is commonly known to the general public as an agency that prevents the burning of grass to mitigate wildfires and prevention of tree cutting; first and foremost. In an interview with EMA respondent; EMA showed to be making positive initiatives on anti-litter promotion; however the majority of the initiatives mentioned in the interview indicated that EMA was more heavily engaged with the business community and schools; with more emphasis on the recycling aspect of environmental management to mitigate littering. This indicated that EMA is placing more emphasis on many of its other environmental management tasks and responsibilities, and less focus on engaging the greater public on the specific issue of environmental littering. It also shows that EMA needs to devise more strategies in reaching the communities to gain more visibility; as the majority of residents are not employed or participants of the formal business community; and represent the greater majority of the Harare residents. The business community is making positive strides towards pro-environmental activities; mainly because of incentives that enable businesses to social-market themselves by provision of binfrastructure, litter-free and clean maintenance of certain areas around. The mandate to uphold and abide by the governing laws that govern environmental littering laws and bi-laws by businesses in-order to participate and continue to do business in Harare, Zimbabwe ensures the corporation of entities to maintain cleaner workspaces.

Residents are starting to show initiative in managing waste and becoming receptive to the idea of participating in a clean-up awareness campaign; and the majority of residents indicated the willingness to support the clean-up campaigns' to work toward cleaner environments. Findings from residents showed that there is not enough information dissemination to the public; indicating that there is lack of effective proactive social-marketing by pro-environmental management institutions and stakeholders to catch the attention of residents in bringing viral awareness to the general public on environmental littering laws and regulations. The awareness

campaigns from pro-environmental and anti-litter stakeholders are showing to be making considerable strides towards promotion of bininfrastructure provision. EMA's engagement in schools on environmental littering awareness is a positive initiative in a positive direction; and schools are responding positively to provision of bininfrastructure. Public spaces such as parks, shopping centers showed to have bininfrastructure in place; however findings also showed that some residents may not notice the bins provided and still litter. There is need for the public to be cognizant of the bininfrastructure provision in public places; to avoid unnecessary littering of the environment that occurs due to lack of noticing the designated disposal bins provided. This indicates that there is then a need for more bins in public spaces because if there are few bins; some residents may miss them.

A few residents claim to litter due to lack of bininfrastructure which poses a challenge; as these residents will tend to litter with that as an excuse. Residential streets lack bininfrastructure in almost all residential areas in Zimbabwe due to financial constraints and the economic hardships insensately plaguing the city of Harare, according to the CoH Respondent; however findings showed that considerable strides to partner with private organizations in provision and promotion of waste removal to mitigate littering through recycling initiatives and partnering with private entities for equipment and street pickers manpower is now in progress and the city asserts its continuing to seek partners to collaborate with on anti-litter awareness and strategies. When it comes to the provision of bininfrastructure by anti-litter pro-environmental institutions such as in highway servitudes; finding have shown there may be need for more bininfrastructure along main roads to shorten the distances of one bin to the next to reduce litter along main highways, as the majority of Harare residents have indicated they have actually claimed not seeing bins along the main highways. This shows that the bins are placed very far from each other; leaving the main roads servitudes prone to litter accumulation.

4.3.4 ASSESSMENT OF STRATEGIES TO ENSURE POSITIVE ATTITUDES AND BEHAVIOURS TOWARDS LITTERING

RESEARCH QUESTION: What strategies can be put in place to ensure positive attitudes and behaviours towards littering among residents in Harare?

Table 4.30 Opinions on Arresting or Fines for Environmental Littering Violations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	66	69.5	77.6	77.6
	No	19	20.0	22.4	100.0
	Total	85	89.5	100.0	
Missing	System	10	10.5		
Total		95	100.0		

The researcher wanted to know what strategies can be put in place to ensure positive attitudes and behaviours towards littering among residents in Harare. Participants were asked about their opinion on whether there should be fines or arrests imposed on littering violators. 10 participants did not answer the question; leaving 85 responses and 77.6% supported arrests and fine stipulations; while 22.4% did not think the public should be fined for environmental littering.

A follow-up question was asked as to why citizens should be arrested for environmental littering violations; and below are the themes that were identified in response by 77.6% of the participants.

1. 28 responses – indicating fines will keep the environment clean; with 10 of the 28 responses also adding that littering causes diseases. 2 responses added that fines will send a message to refrain from littering; while the other 2 responses added that; “it’s irresponsible and bad”.
2. 24 responses – indicating fines will stop littering habits; while 8 responses indicated fines are necessary as littering causes pollution, and 4 mentioning fines are necessary because it’s the law, while 2 responses only indicating fines should be stipulated; with no further comments.

This indicates that close to three quarters of the population agree there is need to control littering behaviours through enforcement of lawful fines and arrests, which goes to show that citizens do actually want cleaner environments.

Another follow-up question asked why citizens should **NOT** be arrested or fined for environmental littering to the 22.4% of the participants that were in disagreement to imposition of fines or arrests on littering violators, and 3 themes in response were identified to be;

1. 10 responses – Educate people instead of fines; however 3 out of the 10 responses further indicated the need to educate the public before imposing fines. These 3 responses also had indicated lack of awareness of current littering laws.
2. 5 responses- indicated no fines because there are no bins along roadsides and many other places. 3 out of the 5 responses further mentioning the lack of cleaning vehicles and binfrastructure.
3. 2 responses indicated the government needed to employ people to clean litter; while the other respondent further asserted that littering was not a big deal, as everyone litters everywhere.

The findings indicated the necessity of fines enforcement to deter littering violators by the residents of Harare, and a few of the residents were in opposition of fines; however; even though some indicated a disagreement with imposition of fines; over 50% of these residents against fines, feel there is need to reduce the problem of littering by educating the public on the subject of environmental littering. A small percentage, however, felt their littering activities should be the responsibility of the government in hiring more people to clean litter and provide more binfrastructure and cleaning vehicles; warding off individual responsibility, accountability and social responsibility of their attitudes and behaviours.

The researcher wanted to know what strategies can be put in place by pro-environmental stakeholders; to ensure positive attitudes and behaviours towards littering among residents in Harare. In interviews with pro-environmental stakeholders, institutions and organizations; some stakeholders indicated some of the strategies they were working on, as well as what they plan to implement or improve on.

According to Respondent 1 (EMA); the agency plans on increasing binfrastructure in town and to improve on the current strategies in place; such as the enforcement of fines and arrests. They have plans to lobby for more partnerships to assist in the provision of new technologies in equipment, handling of plastics, and other waste materials that eventually cause litter in the communities, and working towards usage of degradable products. EMA is currently engaged in research of single use plastics in Zimbabwe to reduce pollution, litter and degradation. On awareness education on environmental littering; Respondent 1 indicated that they were recently engaging with publicity campaigns with prominent people such as Jah Prayzer for publicity infomercials, and Dereck Mpofu has been their Environment Management Ambassador; while Tally Bee has also helped in publicity infomercials in 2018 to bring awareness to the general public. Other strategies they hoped to use were going to be rooted in evidence-based research to improve the current strategies, and devise better strategies on anti-litter awareness campaigns. Respondents mentioned they have an Environment Education & Publicity Unit that supports research grants to local universities, as well as recruitment of students on attachment who are groomed and urged to go back to their universities and implement solid waste management strategies to curb the problem of litter. The "Teach them Young" initiative in schools will continue to be an on program to bring environmental awareness to schools to drive the message home from young. EMA also indicated that they are open to invitation from communities and interested parties for awareness education and training on environmental littering awareness. The respondent also indicated they are also engaged in training of local authority committees and council police in enforcement, and monitoring of the environment; however the challenge in effective enforcement was due to few staff versus the population; where they had 6 officers that oversee the Harare area.

According to the CoH Respondent; the strategies they had in place were tailored at partnering with more waste management and recycling partners to provide equipment; human capital and financial resources to manage waste collection so that the overflow of waste that causes blown litter from dumping sites and cause the residents to start practicing littering on the already littered spaces can be mitigated. They also indicated the need for heavy mass awareness campaigns within communities; and that currently they were working in the most affected areas in the high density areas of Dzivarasekwa, Highfields, Budiriro and Warren Park. The Respondent added that the major challenge faced was sourcing the finances to run massive awareness education campaigns in communities on environmental littering and proper disposal of waste, as well as understaffing constraints as currently there are only 7 officers that have the mandate to hold inspections and monitoring. The other challenge alluded to the CoH having limited powers in implementation of the bi-laws; stating that there has been lots of illegal vendors sprouting and causing littering, as well as illegal residential communities that refuse to abide by lawful operation of business under the influence of the political arm; where they are reinstated into illegal workspaces when municipal police try to do their job to enforce laws. Respondent 2 also indicated that they have enlisted the help of partners such as Clean City, Juluka, who are now involved with litter picking in highly littered areas and to do door-to-door pickup of waste in an effort to reduce waste that finds itself in the environment. They hope to partner with more stakeholders, as well as source partners to construct recycling plants that will be community-based, and increase collection points for recycled materials; in order to motivate residents to see the value in generating income on some of the materials they throw away in the environment that end up littering the environment. Their strategy with recycling community residents has been gaining ground as the partners are the ones who pay the litter pickers who leave materials at collection points.

In an Interview with RCAC; there are plans on continuing to monitor their community as they make rotations to keep Rugare community clean. The RCAC plans to motivate residents of the community through benefits of recycling the materials they normally throw on streets to make

creative projects such as handbag making from chips, and sweets packages to reduce litter by teaching children in schools, and non-employed residents and start realizing earnings from these materials which are the leading materials normally found in littered spaces. That intend to educate and promote resident to adhere to waste disposal at the waste pits designated to residents instead of randomly dumping or throwing litter, which these are sites that the RCAC have created with the help of EMA; which are located at areas that pose less pollution to the residents when it's time to incinerate; as they are managed properly by RCAC; a community-based anti-litter committee.

According to Respondent 4 (Ministry of Tourism and Environment); they use the help of EMA to secure binfastructure at events that attract huge crowds; in order to keep litter at a minimum. They also partner with stakeholders in the tourism industry to ensure all tourist destinations provide binfastructure and monitor littering in these destinations. They have been proactive in signage of zero-litter tolerance at many of the tourist destinations to curb the problem of littering in an initiative to keep tourist destinations clean. They intend to hold massive awareness campaigns on zero-litter tolerance campaigns in collaboration with other institutions, EMA and pro-environmental stakeholders.

According to Respondent 5 (Ministry of Health and Child welfare); they indicated that in local clinics; healthcare workers periodically engage the community in teachings about keeping cleaner environments to prevent diseases; and that environmental littering subject gets touched on frequently; however; the message gets out to very few residents; as these teachings are not regularly, and not all residents visit the clinic regularly. They indicated the financial constraints in introducing regular awareness education on impacts of environmental littering to the residents in communities. Respondents indicated that the clean-ups are now a mandatory exercise; that it now keeps the subject on the forefront and there has been notable participation from the feedback they got from community clinics; which has improved the aesthetics of most community clinics.

4.3.4.1 Overall Analysis on Strategies to Ensure Positive Attitudes and Behaviours towards Littering

The findings indicated the residents feel there is necessity of fines and arrests enforcement to deter littering violators by the residents of Harare, while about 7% of residents realized the need to educate the general public on the subject of environmental littering, and provision of more bininfrastructure to meet the demands of population in public spaces such as roadsides, shopping centers and recreational parks. Anti-litter pro-environmental institutions are making strides to come up with strategies to mitigate littering through awareness education campaigns; however they realize the need to run heavy mass anti-litter awareness campaigns; which are currently challenged by lack of finances and budgetary constraints owing to the economic challenges the country faces. Both EMA and City of Harare plan on increasing bininfrastructure and to improve on the current strategies in place; such as the enforcement of fines and arrests, lobbying for more partnerships to assist in the provision of new technologies in equipment, promotion of anti-litter information through publicity campaigns, and embarking on evidence-based research to improve the current strategies, and collaboration in legislative and bi-laws formulation. The Environment Education & Publicity Unit at EMA will continue to support with grants to local universities, to groom and urge implementation of solid waste management strategies geared at litter reduction. The other initiative to be improved is the "Teach them Young" initiative in schools. Training and awareness education of communities, business communities, and local authority are other strategies that EMA employs, and the staffing issue is hoped to improve as the economic situation stabilizes. Findings show more visibility is needed with EMA in the residential communities and social marketing to the general public.

City of Harare hopes to gain partners and stakeholders to construct community-based recycling plants and increase collection points for recycled materials; in order to motivate residents to see the value in generating income on some of the materials they throw away in the environment that end up littering the environment. Their strategy with recycling community residents has been gaining ground as the partners are the ones who pay the litter pickers who leave materials at collection points. Other anti-litter stakeholders are working within their communities to mitigate

littering and promote and monitor their communities as they make rotations to keep cleaner community through motivation of residents and awareness education on benefits of recycling the materials they normally throw on streets to introduce creative projects such as handbag making from chips, and sweets packages to reduce litter, and realizing earnings from littered waste. Certain communities through their community leaderships are devising strategies of waste handling through creation and maintenance waste dug holes that are used as composts with collective residents for their use as manure. Other institutions such as the Ministry of Tourism and are also increasing signage in the tourist destination areas to curb the problem of littering in an initiative to keep tourist destinations clean. They intent to hold massive awareness campaigns on zero-litter tolerance campaigns in collaboration with other institutions, such as EMA and other pro-environmental stakeholders, while Ministry of Health and Child welfare periodically engage the community in teachings about keeping cleaner environments to prevent diseases, even though they turn-out of such strategies attract a few residents a time. All the interviewed respondents' alluded to the financial constraints as the major challenges in conducting effective and regular awareness education campaigns on environmental littering, and the awareness it needed.

4.4 DISCUSSION

4.4.1 Discussion on the Underlying Attitudes and Behaviours among Residents in Harare

Even though majority of the Harare population finds litter as irritating, and having some knowledge on the health implications of littering and realizing the need for awareness education on the subject of littering; findings showed that residents still practice the littering habit giving off an indication that the residents' attitudes and behaviours are negligent, and lack individual policing, accountability and social responsibility. Research findings have shown that 98% of Harare residents generally agree with the importance of a clean environment, however; their attitudes and behaviours towards the habit are very much inconsistent with behaviours that promote the maintenance of clean and litter-free environments, as 83% of residents admitted to practicing littering to some degree. Similarly; Tanyanyiwa (2015) made the same findings; "It is

astounding that Zimbabweans identify litter as a major environmental problem and yet still litter.” These findings point to the thinking patterns of the residents of Harare in controlling their attitudes and behaviours in littering. Makwara and Maude (2013) also argued that litter is a state of mind so it is the mindset that is the root of the problem. Some residents owed their excuses of littering behaviours to the lack of binfrastructure in roadsides, while some admitted they litter, however; with the expectation that it is the responsibility of the local authority to hire more workers to clean after them; indicating negligent individual attitudes and behaviours, lack of accountability of their own behaviours. In another study Chitotombe (2014) states; “it emerged that the city council has been castigated especially in urban environments due to unavailability of bins and poor service delivery but this should not be used as a scape-goat for wanton littering. Residents also showed to respect their private spaces or immediate habitants, such as; when travelling on vehicles, where the majority claimed to keep rubbish with them until they get off; however residents showed to litter more in the public environment spaces, especially if environments are already littered. According to Tanyanyiwa (2015); observed that generally Zimbabweans are very house –proud; they don’t dump garbage in their own yard and would be very disappointed if they saw someone throwing litter into the street outside their gate; so it is difficult to understand why so many throw litter outside someone’s shop or into streets of the city Centre. In another study; Alice Ferguson Foundation, (2011) they discovered that people litter less in a cleaner environment but will litter more at a dirty place. Findings indicated that the underlying causes of littering habits of the Harare residents is related to a lack of individuals responsibility and accountability to social responsibility and accountability to their environment as residents showed negligent attitudes and behaviours. Similarly, Waghorn-Lee, (2013); argues that all litter in the environment is as a result of a person’s negligence or careless attitude and behaviour.

4.4.2 Discussion on Residents’ Awareness of the Impacts of Environmental Littering

Researcher assessed the awareness of the general population in Harare on the impacts of environmental littering. Finding showed that the majority of residents in Harare have some form of awareness on the impacts of environmental littering; although their admitting to high

prevalence of litter in their communities in over half of Harare communities show that residents lack holistic awareness on proper waste disposal etiquette; indicating a lack of awareness on the implications and impacts of environmental littering. Similarly; Chitotombe (2014) states; it also emerged that, though people are aware in most instances, some still believe that these are not really pressing problems since they are not aware of the imprints. ENCAMS (2001) also discovered that lack of education on littering influences littering behaviour; while Grob (1995) similarly discovered that the recognition of consequences of environmental problems is directly linked to environmental attitudes. Although a high prevalence of litter in communities can be an indication of lack of awareness on the impacts it has on the environment, humans and animals; the researcher gathered from some interviewed institutions' respondents that the prevalence of litter in highly populated areas in Harare was partly contributed by ineffective and inadequate collection of waste due to overpopulation and financial constraints; and that the city council is unable to meet the demand to collect waste. This results in communities practicing dumping that creates litter generation that gets blown onto the streets and everywhere in communities; increasing the numbers of people who will then continue to litter on the already littered spaces. While it is one of the reasons of litter generation in Harare; the problem remains with the lack of holistic awareness of the serious impacts of littering, and that continuing to litter on already littered environments creates instead of devising better ways to dispose of waste in communities when city council cannot meet the demands. Cottrel (2002) found that environmental knowledge and awareness of consequences are two predictors of responsible environmental behaviour. Majority of residents in Harare claim to have some environmental littering awareness information, however; further assessment in an open-ended question asking what residents had learnt on environmental littering impacts showed that 45% of the 63% who claimed to have gained some awareness information were simply relating it to the teaching; "Not to throw rubbish everywhere to keep the environment clean", without the rationale behind the necessity of clean- litter-free environments. This showed less than 20% of residents actually demonstrated a holistic awareness of the many impacts of environmental littering, indicating the need for holistic awareness campaigns that point out littering impacts environmentally, socially and economically. Other researchers also agree with the need for massive public awareness education in attitude

and behaviour transformation; see (Makwara & Chigudu, 2013; Chitotombe, 2014; Tanyanyiwa, 2015; Cottrel, 2002; Gusmerotti, Corsini, Testa, Borghini and Iraldo, 2016). Findings did show that the majority of residents who claimed to have awareness gained information through schools, radio infomercials and anti-litter campaigns, however; residents indicated their respective communities lacked anti-litter advocacy; while a few mentioned fellow residents and community leaders advocate for anti-litter behaviours. Overall, the majority of residents in Harare have some general awareness on the impacts and implications of littering with few residents having holistic understanding and awareness on the impacts of environmental littering. Findings also show that EMA initiatives in bringing awareness on environmental littering is yet to effectively reach the public as the residents of Harare claim there is not much of any anti-litter advocacy in their communities; and researcher interview with EMA Respondent confirmed that EMA information publicity is channeled mainly through schools, radio and anti-litter campaigns in partnership with the business community, and sometimes; local communities by invitation from local leadership and other pro-environmental stakeholders.

4.4.3 Discussion on Effectiveness of Current Efforts by Anti-Litter Stakeholders

Visibility of anti-litter pro-environmental institutes and organizations was not very overt to the general population of Harare as findings showed that 52.1% were not familiar with the responsibilities or what Environmental Management Agency (EMA) stands for. Only 37.9% of Harare residents had a general idea about EMA; indicating that the majority public were not connected with EMA's initiatives and campaigns against environmental littering. When awareness as to the responsibilities of EMA were sought on the residents that had a general idea, results showed 36.8% mentioned; EMA keeps the environment clean; 32.6% knew EMA prevents cutting of trees and burning of grass to prevent fires as EMA's sole responsibility, while 28.4% didn't attempt to respond. Findings also showed that only 8.8% residents of Harare indicated advocacy of anti-litter campaign in communities came from EMA; while 5.9% indicating anti-litter campaign advocacy came from city councilors in their respective communities.

Over 50% of residents indicated that anti-litter advocacy in their communities was initiated more by community residents/leaders/landlords; followed by councilors 20.6% and voluntary anti-litter campaigns 14.7%. Research also found that certain communities are starting to engage in community-based anti-litter watchdogs; for example, with the Rugare Residents; (Rugare Community Anti-litter Committee). There showed to be more initiatives with residents in anti-litter advocacy, while there was an indication of reluctance with anti-litter institutions in advocating for anti-litter campaigns in residential communities; however more notable initiatives was shown with their efforts in the business community and an increase in lobbying private partnerships to assist with waste management, in efforts to curb littering and mitigate accumulation of dumping sites.

Research findings also showed that various anti-litter clean-up campaigns have been able to mobilize about 50% of residents towards clean-ups campaigns in Harare communities in the past year; owing to the national monthly clean-up day which is currently keeping the issue of clean environments on the fore-front of the citizens' minds; however other researchers; Makwara & Chigudu (2013) argue that; these noble initiatives only have short-term effects to communities, and there is need for longstanding solutions. And another researcher, Chitotombe, (2014) also states in agreement that; in as much as clean-up campaigns call for community engagement on the part of church organizations, business and local communities; these do not provide a lasting solution to the problem of littering.

Research findings on enforcement of laws stipulated by EMA on environmental littering show tremendous reluctance in implementation and enforcement as study findings showed 100% of study participants claimed never having been fined for their littering habits; ever. It was also evident that many residents of Harare were not aware it was a crime to litter with 56.8% residents lacking awareness of the existence of the law to fine or arrest for littering. Similar findings with Makwara & Chigudu (2013) state; "While a legislative framework for managing waste is in place in Zimbabwe (EMA), there is no enforcement. The implementation of EMA has been quite lethargic as indicated by a small number of offenders who have been fined or tried for

contravening the law. Similarly, Chitotombe (2014); also commented that; whilst environmental law makes reference to prohibition against littering; implementation has been very difficult due to local community resistance, ignorance and apathy. Residents when consulted on whether the public should be fined or arrested for littering; 77.6% of the residents supported the imposition of fines stating the fines would stop littering as well as send a message to violators to stop the littering habit and keep the environment clean. This was evident that the residents do see litter as irritating and a problem that needs to be controlled and addressed, even though they practice the habit of littering to some degree. Empirical evidence has shown that the habit to litter is amplified in places where there is already litter as people tend to normalize littering in those already littered spaces.

An assessment on the effectiveness of current efforts by legislative-mandated anti-litter institutions indicated that the lack of effective emphasis on delivery of robust public awareness education, enforcement of environmental littering laws and inefficient public service delivery was linked to budgetary financial constraints exacerbated with the incessant economic challenges that the nation has been facing for decades now. Chitotombe (2014) also gathered that councils were heavily indebted following cancellation of outstanding bills for ratepayers which further burdened the councils who claimed to be already in a comatose state to deliver proper services. These mandated institutions also alluded to ineffective enforcement of laws partially challenged by understaffing where EMA claimed only 6 officers oversee the City of Harare, while City of Harare claimed to have 7 inspectors in all Harare districts; and partially linked ineffective enforcement of laws to promotion of some illegal dwelling by Land Barons and some illegal vendors operating under the influence of the political arm; and some of these institutions assert that it leaves the city powerless to implement laws and bi-laws to clamp down illegal activities, and that since the sprouting of these illegal activities are not lawfully established; they lack local authority's service delivery coverage on waste collection and management; thereby creating more environmental litter. Tanyanyiwa (2015) also quotes: "Some of the problems associated with littering include poor governance and corruption as well as shortages of equipment and power at the city of Harare (CoH)." Similarly; Chigwenya in 2010 discovered that the

government continues to interfere with day-to-day running of the local authorities and making the current situation even worse as local authorities lack autonomy in independent decision-making on policies towards effective waste management. Another researcher argues; besides their statutory obligations, local authorities are motivated by political concerns to provide solid waste services.

Findings also showed that even though majority of the general population in Harare were not very familiar with all the responsibilities and operations of EMA; and claimed to gain awareness information through schools, radio and anti-litter campaigns by councilors; it also showed EMA to be behind the dissemination of environmental awareness information in schools through the “Catch them Young” initiative, publicity infomercials on radio programs, and enlisting of public figures to bring awareness information, as well as working with the councilors on training of proper environmental waste disposal management to curb littering. This showed that EMA needs to devise more strategies in reaching the greater majority of residents to gain more visibility to the majority population of Harare; as majority of residents are not employed or participants of the formal business community to gain access to awareness information where EMA showed to be mostly targeting its efforts. The business community, however, with EMA’s efforts showed to be making positive considerable strides towards pro-environmental activities; mainly because of incentives that enable businesses to social-market themselves by provision of bininfrastructure, litter-free and clean maintenance of certain areas around the city; as conveyed by EMA and City of Harare respondents. The partnerships are geared towards provision and promotion of waste removal to mitigate littering through recycling initiatives, outsourcing new technologies in waste removal equipment, and street picker manpower under payroll of private partners such as Clean-City who are now in progress and operation; and the both EMA and CoH assert that they will continue to seek partners to collaborate with, on anti-litter awareness and waste management to curb environmental littering.

A few residents claimed to litter due to lack of bininfrastructure which poses a challenge; as these residents will tend to litter with that excuse in mind. Research findings have shown that some

residents do not take notice or take the time to identify bininfrastructure in public places even though available. The Bin-it Survey Project in Harare by Proudly Zimbabwean around 2012 revealed that bins were not being used though available. Chitotombe (2014) also found that the council has been castigated due to unavailability of bins and poor service delivery. This shows the need for more bininfrastructure along roads, however; pro-environmental anti-litter stakeholders are showing to be making considerable strides towards provision of bininfrastructure around certain areas in and around the CBD of Harare; owing to social-marketing incentives strategy by City of Harare. When it comes to the provision of bininfrastructure along highway servitudes; empirical evidence has shown there is need for more bininfrastructure along main roads and to shorten the distances from one bin to the next to reduce litter along main highways, as research findings showed that the majority of Harare residents actually claim they do not see bins along the main highways. According to the Bin-it Survey Project in Harare; the reveal that bins were not being used though available; was linked to the spatial distribution of bins not necessarily availability.

4.4.4 Discussion on Strategies to Ensure Positive Attitudes and Behaviours

Based on the finding that over 83% of the population residents of Harare practice littering with 53.7% of the 83% admitting to engaging in the behaviours regularly; while 37.9% of the 53.7% admitted to littering daily; indicating the biggest problem is the normalization of these negative attitudes and behaviours that individuals engage in; warranting strategies geared towards holistic awareness education to social transformation of individuals. Similarly, Tanyanyiwa (2015) identified; there is a need for a cultural revolution so that littering becomes everyone's concern. In a similar study Makwara & Chigudu, (2013) they also argue; in –order to address the litter issue, there must be a change in public's perception of litter. In a study predicting littering behaviours in Italy; Gusmerotti & Corsin, (2016); quote; “a positive correlation between social norms and pro-environmental behaviours has been reported for correct waste-handling (heberlein, 1972)”.

Findings indicated there is need for a massive change in individuals' attitudes and behaviours through holistic education awareness to transform the mindset of residents as research identified that 90% of Harare residents lack holistic awareness education on implications of environmental littering and their littering habits demonstrated that residents lack individual and social accountability and responsibility. Makwara & Chigudu (2013) also supports that litter is a state of mindset, a moral issue that emphasizing the importance of public social responsibility is critical. That asserts the researcher's findings that the underlying social and environmental influences of littering behaviours are rooted in the mindset of individuals, as some residents still litter even with bininfrastructure provided. Research findings showed less than 20% of residents knew about the holistic impacts of littering; hence the reluctance for the majority of residents to transform littering behaviours.

Clean-up campaigns while they help sensitize the public about the subject of littering; require huge financial resources; making it difficult for anti-litter stakeholders and institutions to effectively roll-out robust campaigns due to economic challenges, and budgetary constraints; as indicated by legislative-mandated institutions on environmental littering. Chitotombe, (2014) also states in agreement that; in as much as clean-up campaigns call for community engagement on the part of church organizations, business and local communities; these do not provide a lasting solution to the problem of littering. Empirical evidence has shown that clean-up are short-term fixes and difficult to continue long-term and are time and money consuming.

Research found that currently; community anti-litter campaigns are geared towards the call for cleaner environments through clean-up initiatives; however it has also shown that the campaigns lack the rationale behind the necessity to maintain cleaner environments such as; pointing out the implications litter has on health, city budgetary costs of clean-ups that rob tax-payer money that could be used to improve other public services to citizens, as well as the aesthetics of the city in attracting revenue from tourists and other environmental littering concerns that cause social decay.

Enforcement of Laws on stipulated legislation showed that over 77.6% of Harare residents support the need for fines and arrests to stop littering behaviour. Biel and Thogersen (2007); agree that social norms imply that people adopt a certain behaviour or not to manifest a prescribed one; the violation of these norms is met by sanctions. Empirical evidence shows that enforcement of fines is a strong deterrent of the behaviours; however the challenge in Harare has shown that enforcement is challenged by inadequate officers and some influence from the political arm, as well as the lack of knowledge and information to the public of the existence of such laws on environmental littering as shown with the findings that all participants claimed to never have been fined ever; even though they admit to littering habits regularly. The strategy to partner with private entities employed by EMA, and the local council showed to be gaining positive results in bringing a helping hand and take-over of some of the waste management activities and provision of binrastructure, equipment, newer technologies and manpower to better manage waste and to help curb environmental littering.

4.5 CONCLUSION

The findings showed social influences underlying the littering behaviours are residents normalization of littering habits due to negligent attitudes and behaviours, mindset of some residents with expectancy that others will need to clean after their litter; showing lack of individual and social accountability and responsibility. Environmental factors showed the lack of enforcement of laws; alluded to inadequate officers per population requirements in Harare, budgetary financial constraints exacerbated with incessant economic challenges, as well as the assertion by the mandated institutions that the influence of the political arm interferes with implementation of bi-laws. Despite the challenges of the economic difficulties and non-enforcement of laws; the major underlying problem remains with the need for individuals to exercise accountability and responsibility of their environment to mitigate the environmental littering; so as to minimize the need for more resources needed to clean up carelessly generated litter; which is supposed to have already been properly disposed off in designated places for collection. Research has shown that transformation of littering attitudes and behaviours with

residents require robust awareness education on proper disposal of waste and awareness of the costly implications and impacts of environmental littering.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1.0 INTRODUCTION

This chapter will cover a summary of each chapter, conclusions based on research findings and finally recommendations based on conclusion findings. The research study was on the topic; Social and Environmental Influences toward Littering Behaviours in Zimbabwe: A case of Harare Province to understand the social and environmental factors that influence the attitudes and behaviours of littering.

5.2.0 SUMMARY

5.2.1 Chapter 1

Environmental littering in Zimbabwe seems to have become culturally and socially accepted. Although many studies had been conducted on the subject of littering; many of them were focusing on the attitudes and behaviours of Harare residents towards littering; however the researcher wanted to further assess the social and environmental influences of these attitudes and behaviours. The significance of the study would allow the researcher to be able to identify the various factors that influence littering attitudes and behaviours socially and environmentally, as well as contribute to scholarly studies, and provide insight to governing institutions, policy makers, laws enforcement institutions, and environmental management stakeholders, and other researchers, as well as researcher's ability to learn new information. The delimitations of the study pointed to the possibility of the sample population not fully disclosing behaviours because of embarrassment at admitting to littering habits; and there were no limitations identified with

the study. The research objectives that were to guide the study are:

1. To analyze the underlying littering attitudes and behaviours among the residents in Harare.
2. To assess the awareness of the general population in the Harare Province on impacts of environmental littering.
3. To assess the effectiveness of current efforts on awareness campaigns by Anti-litter environmental stakeholders in the Harare Province
4. To come up with strategies to ensure positive attitudes and behaviours towards littering among residents in Harare.

5.2.2 Chapter 2

The literature review chapter consisted of the Conceptual Framework and Theoretical Framework of the study, and this chapter was guided by the objectives of the study and research questions in chapter one to do the literature review. The conceptual framework pointed out the relationship and how the personal variables interplay with the social and environmental factors in the formation of positive or negative behaviours of environmental littering. To understand the underlying causes of littering behaviour; it is critical to understand how individuals view and interpret littering behaviours, their level of awareness and knowledge on the subject of environmental littering. The knowledge gap identified; showed that many studies have been done on waste management in Zimbabwe; and the littering studies done thus far were focusing on the attitudes and behaviours towards littering, however; this study wanted to explore the social and environmental factors that influence these attitudes and behaviours of environmental littering; therefore the study sought to understand these ABCs of the attitudes that drive the littering behaviours of the general population in Harare Province; socially and environmentally in order to explain why environmental littering attitudes and behaviours continue to be of consistence.

5.2.3 Chapter 3

Based on the objectives of the study, conceptual and theoretical framework, the study needed to look into the methodology of the study. Research in general is underpinned by certain

philosophical assumptions about the world; what can be defined as the research paradigm. These paradigms (Kuhn 1962) or worldviews (Creswell 2003) determine the conduct and outcomes of research. In social scientific knowledge; two worldviews have usually dominated: post-positivism and constructivism; however with the ever-changing world in technology, social and cultural complexities; more and more ways of approaching research have been adopted, creating other paradigms (worldviews). These newer paradigms are: the advocacy approach and participatory approach, which are associated with action research; and the pragmatism approach, which is associated with mixed methods research. The research design employed the descriptive research design. The design enabled in-depth eliciting of information as it allowed the researcher to use both qualitative and quantitative research methods. It also enabled employment of various measurement tools, for data collection and data analysis tools improving the reliability and validity of the study. The descriptive design allowed for description of variables as independent categories. The measurement tools used a survey questionnaire with a sample population of 95, and 5 structured interviews to enable in-depth gathering of information and to gain more insight and understanding. The simple random sampling method was the sampling technique of choice, and taking into account the reliability and validity of data collection discussed in detail. The measurement tools of structured questionnaires with both open-ended and closed-ended questions were used, providing consistency in information gathering as the questionnaire was a standard data collection tool used for all from all 95 participants; allowing reliability of the measurement tool used. The Interviews were structured interviews and reliability gained the employment of purposive sampling technique to accurate data from specific representatives of the institutions targeted for validity and reliability of data. Finally the chapter laid out how the data collected would be presented, described, interpreted and analyzed, and as well as the ethical issues were addressed on how study would be authorized and taken into account.

5.2.4 Chapter 4

This chapter presented, interpreted and analyzed the findings of the study which followed the methodology of study as laid out in chapter 3. The participants' bio-data was discussed first and separately. A discussion according to each objective was how the data was organized. All 95

participants participated in the study. Data presentation, interpretation and analysis used the SPSS E21 for the quantitative portion of the data, and the thematic analysis for the qualitative portion of the data for the interviews conducted with anti-litter institutions and anti-litter stakeholders. The findings showed that social influences underlying the littering behaviours are residents normalization of littering habits due to negligent attitudes and behaviours, mindset of some residents with expectancy that others will need to clean after their litter; showing lack of individual and social accountability and responsibility. Environmental factors showed the lack of enforcement of laws; alluded to inadequate officers per population requirements in Harare, budgetary financial constraints exacerbated with incessant economic challenges, as well as the assertion by the mandated institutions that the influence of the political arm interferes with implementation of laws and bi-laws. Despite the challenges of the economic difficulties and non-enforcement of laws; the major underlying problems showed the need for individuals to exercise individual and social responsibility and accountability of their environment to mitigate environmental littering attitudes and behaviours. Research findings also showed that transformation of littering attitudes and behaviours with residents require robust zero-litter tolerance for transformation.

5.3.0 CONCLUSION

5.3.1 Conclusion on the Underlying Attitudes and Behaviours towards Littering

It was evident that the majority of Harare residents find litter in the environment irritating and admitted to the importance of clean environments, yet they also admitted to practice littering habits often. It was interesting that residents showed attitudes and behaviours contradicting their desire for cleaner environments. Based on the findings; researcher concluded that the two theories in chapter 2; Social Cognitive Theory and The modified Theory of Planned Behaviour both resonate with both theories in that; Harare residents' attitudes towards littering behaviours is that of normalization of the habit and witnessing litter in the environment as the norm; and their perceived behavioral controls such as; individual policing, accountability and responsibility,

environmental awareness of the impacts of littering and punishment for negative behaviours such as fines or arrests are controls that can deter the behaviours rooted in normative rituals of littering in the residents; and the lack thereof of the consequences of mentioned perceived behavioural controls explain the prevalence of negligent attitudes and behaviours towards littering. Based on the research findings the researcher concludes that the underlying social and environmental influences of the attitudes and behaviours towards littering in Harare are related to individuals' negligence, and normalization of littered environments; resulting in behaviours that show lack of individual policing, accountability and social responsibility. The findings were also in agreement with empirical evidence in that; socially speaking; attitudes and behaviours can be learnt from others which then influence certain behaviour to be highly prevalent. This can be the case with environmental littering especially if the behaviour is occurring in large populations with a high density of population where it becomes the norm to be litterbugs. Many studies have shown that littering is mostly human descendant, as high levels of litter are usually synonymous with high levels of human traffic (KAB, 2009; Schultz *et al.*2011).

5.3.2 Conclusion on Residents' Awareness on the Impacts of Environmental Littering

Based on research findings; the researcher concludes that majority of residents in Harare have limited awareness and limited information reaching their communities on the impacts of environmental littering; due to reluctance of mandated institutions in engaging the public more on zero-tolerance messages, and in part; due to budgetary financial constraints to carry out effective education of the public. Researcher concludes that there is need for massive social-marketing of zero-tolerance to litter, and holistic awareness information dissemination into communities on proper waste disposal etiquette and holistic awareness of the implications and impacts of environmental littering, as well as the need for anti-litter mandated institutions and stakeholders to actively engage with the public regularly on the issue of environmental littering. The objective was to assess the awareness of the general population in the Harare Province on impacts of environmental littering; and researcher met the objective through the adoption of a mixed methods methodology, to elicit more information from residents of Harare;

where the structured open-ended and closed-ended questionnaire was used along with interviews

5.3.3 Conclusion on Effectiveness of Current Efforts by Anti-Litter Stakeholders

Research findings on the effectiveness of current efforts by legislative-mandated anti-litter institutions pointed out there is lack of effective emphasis on delivery of robust public awareness education, enforcement of environmental littering laws and inefficient public service delivery; due to budgetary financial constraints exacerbated with the incessant economic challenges that the nation has been facing for decades now. It was also evident that institutions charged the reluctance and ineffective enforcement of laws to some extent as partially challenged by understaffing of officers and inspectors for effective monitoring and enforcement of law; and partially linked to the promotion of illegal dwelling by land barons and some illegal vendors operating under the influence of the political arm. Based on these findings the researcher concluded that the challenge in enforcement of laws to mitigate environmental littering cannot be achieved with our institutions and that it is more critical to educate the general public on proper ways to handle litter and horn in on zero-litter campaigns to transform individuals' habits and mindsets. While the challenges faced by institutions raised concerns; there is still need for the institutions to drop reluctance to act and take more initiative in restoring order to the through cost-effective strategies that can easily reach the masses and educate residents of anti-litter campaign and littering laws. The objective to assess the effectiveness of current efforts on awareness campaigns by anti-litter environmental stakeholders in the Harare province was met through interviews with purposive sampling of institutions to interview and anti-litter stakeholder, as well as survey of the general population to gain viewpoints and current strategies as well as challenges in efforts toward curbing of environmental littering.

5.3.4 Conclusion on Strategies to Ensure Positive Attitudes and Behaviours

Based on research findings indicating that residents feel there is need for stipulation and enforcement of fines to deter littering violators; and some of the residents in agreement with the need for awareness education of the general population on the subject of environmental littering,

and the need for provision of more binrastructure to meet the demands of population in public spaces the researcher concluded that the residents of Harare are aware there is a problem of environmental littering in Harare, even though residents engage in the habits of littering as well. The researched also concluded that there is need for the residents to engage in behaviours and attitudes that resonate with keeping cleaner litter-free environments; as well as the need for mindset transformation of residents in changing their perspectives in how they view personal versus public spheres of their city by instilling in residents; attitudes and behaviours that manifest accountability and responsibility towards the environment. The researcher also concludes that there is need to move away from clean-ups into zero-liter campaigns which are more geared at eradicating the problem than short-term clean-ups that tend to lose steam as they continue; due to their demand for more financial resources and how time-consuming and energy draining they tend to be on residents. Clean-ups are huge on sensitizing the residents; however a quick shift into zero-litter (anti-litter) campaigns that have a zero-tolerance message on the masses would be more effective, as the current campaigns tend to be driven by anti-litter institutions and the business community. The objective to assess strategies to ensure positive attitudes and behaviours towards littering among residents of Harare was met by interviewing the institutions and other anti-litter stakeholders and residents to see how effective the current strategies were on ensuring positive attitudes and behaviours towards environmental littering.

5.4.0 RECOMMENDATIONS

The researcher recommendations are based on the researcher conclusions of the study; derived from 4 objectives of the study to come up with cost effective strategies that will assist in the move towards zero-litter tolerance; organized by Individuals, Anti-Litter (institutions and organizations), and Law Enforcement. Littering habits will need to start with mindset transformation of individuals for positive attitudes and behaviours, then institutions need to encourage positive behaviours through pro-friendly policies, and engagement and regular communication with the public, and finally law enforcement needs implementation and enforcement of laws to deter violations. Below is an illustration of the strategy proposed.

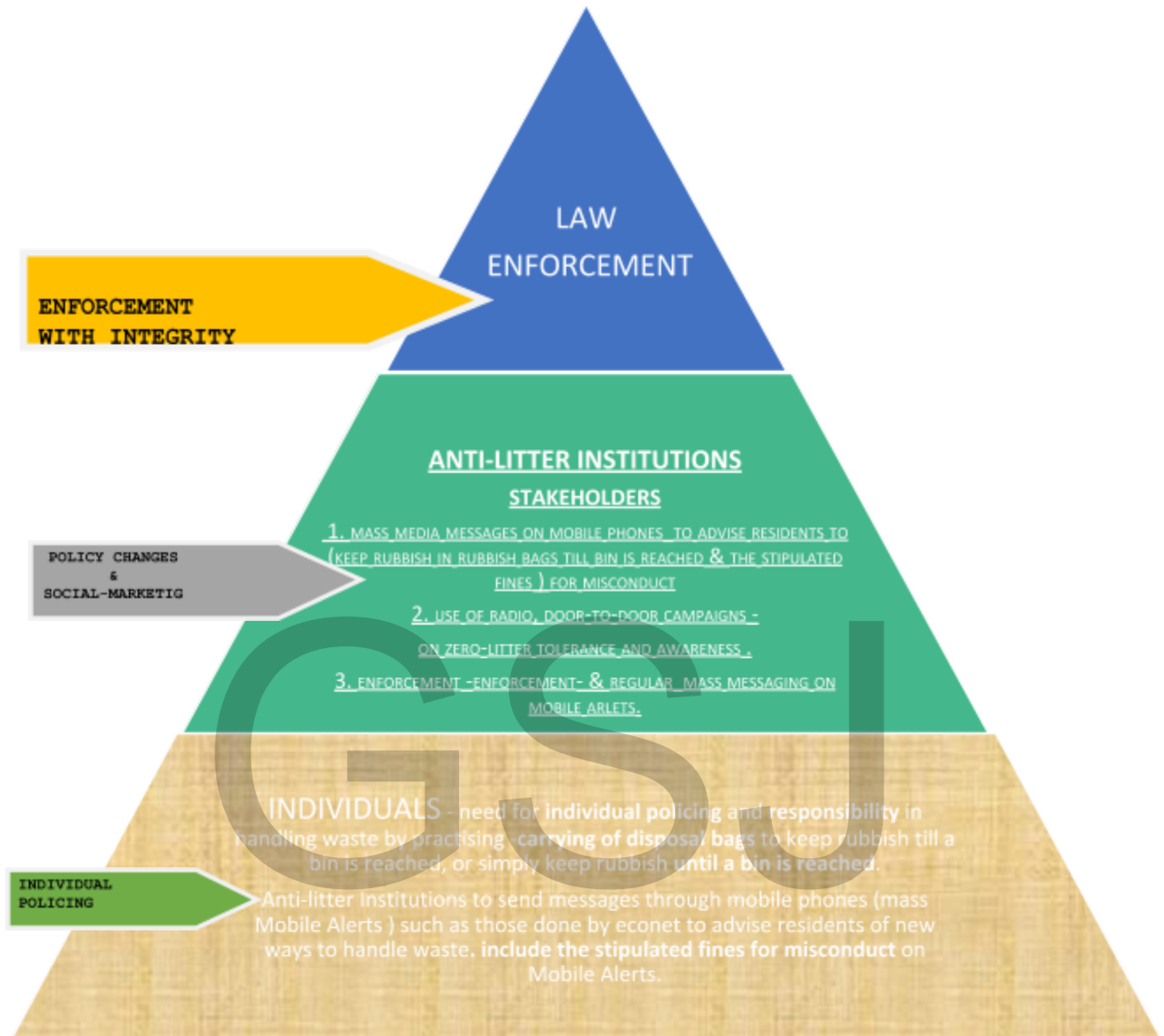


DIAGRAM: Cost-Effective Strategic Action Plan on Environmental Littering: Caroline Mudziviri (2019)

5.4.1 Individuals

1. To carry rubbish bags with them, and dispose when a bin is reached. School children can be encouraged to keep rubbish in their lunch-boxes or paper bags and dispose of it in a bin only; or when they get home. Information on proposed strategies delivered via mobile alerts, TV, and Radio stations on a daily-basis until transformation is noted; from EMA.

5.4.2 Anti-Litter Agencies and Stakeholders

1. Start with mobile alerts daily or once a week, and create partnering with the mobile networks to get coverage of daily messages that state clearly the anti-litter laws and the move towards zero-litter tolerance. Make messages short and sweet to target all mobile users. Devise the incentive for mobile networks used.
2. Improve on the schools initiatives by adding the same messages, and asking schools in primary and secondary to address the message of zero-litter and fines at every school assembly and work on ZBC infomercials especially during the 8PM news time; daily until message is drilled in the public.
3. A call to all governmental institutions to make a short spill of message at beginning and end of public events and addresses; so that the public sees the same message everywhere they turn. This will make residents realize the change and bring awareness to shift in behaviours. It also helps to keep the issue of environmental littering on the forefront, without the need for institutions to source funds for clean-up campaigns.
4. Vendors should be encouraged to keep their workspaces spotless clean, as well as fined if there is litter within their workspaces; regardless of who threw litter in their workspaces. This will ensure there is citizen's policing of each other. (Policy improvements)
5. Residential and Business premises should be fined if there is litter within their vicinity (within an agreed stipulated parameter); again promoting individual citizens' policing of each other. This will keep the littering issue on the forefront, and drastically mitigate the habit. It will be cost-effective if every citizen becomes a watchdog and the cry for money to hold campaigns and clean-ups will not be an issue, and it can now be redirected to buying waste collection and management equipment. (Policy improvements)

5.4.3 Law Enforcement

Enforcement and Enforcement and Enforcement.

5.4.4 Area of Further Study

Research studies discovered that residents felt that clean environments are very important to them as was indicated by 98% of residents, and 77% of residents were pro-fines and arrests for littering behaviours; however, 83% of the residents admitted to littering habits ranging from daily and often littering. Further research studies could want to assess why there is contradicting behaviours of residents.

REFERENCES

Itai V.T. (2015). Motivational Factors Influencing Littering in Harare's Central Business District (CBD), Zimbabwe. IOSR Journal of Humanities and Social Science (IOSR-JHSS). 20 (2) Version. IV, Feb. 2015, 58-65 pp. e-ISSN: 2279-0837, p-ISSN: 2279-0845. www.iosrjournals.org. DOI: 10.9790/0837-20245865 www.iosrjournals.org.

Chitotombe, J.W (2014), "Interrogating factors associated with littering along road servitudes on Zimbabwean highways", Journal of Environmental Management and Sustainable Development, Vol. 3No. 1, pp. 181-193

H. A. Arafat. "Influence of socio-economic factors on street litter generation in the Middle East: effects of education level, age, and type of residence", Waste Management & Research, 08/01/2007. Published by: <http://www.sagepublications.com>. On behalf of the International Solid Waste Association.

Muchadenyika, D. (2012) "Improved local governance answer to service delivery" *Daily News on Sunday*, Zimbabwe: 12 August 2012

Enock C. Makwara and Snodia Maude (2013). Confronting the Reckless Gambling with People's Health and Lives: Urban Solid Waste Management in Zimbabwe European Journal of Sustainable Development (2013), 2, 1, 67-98 ISSN: 2239-5938

Alice Ferguson Foundation (2011). Getting to the Source: Understanding District Citizens and Business Community Attitudes towards Litter and Responses to Anti-litter Messaging and Strategies. Non-Engineering Solutions for Trash Reduction in the Anacostia Watershed.

Stuart N.R (1975). Social and Environmental Influences on Littering Behaviour. A Dissertation presented to the Faculty of Graduate Studies and Research.

Rugoho, T. (The Case Study Of Vendors And Beggars With Disabilities In Harare, Publisher: African Journal of Social Work, African Journal of Social Work, 7(2), December 2017 9, AJSW, Volume 7 Number 2 2017 Rugoho, T. ISSN Print 1563-3934, ISSN Online 2409-5605

EMA , (2019). (online) Available: www.ema.co.zw
Environmental Management Act (Chapter 20:27) GOZ, Harare, Zimbabwe

Kaiser F.G., Wolfing S. and Fuhrer U. (1999). Environmental attitude and ecological behaviour, *Journal of Environmental Psychology*, 19, 1-19.

Keep America Beautiful (KAB) (2009). Littering Behaviour in America. Results of a national study. Prepared by Action Research. 62

Ajzen, I. and Fishbein, M. (1987) *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, NJ: Prentice-Hall

Abarca-Guerrero L., Maas G. and Hogland W. (2012). Solid Waste Management in Developing Countries. *Waste Management*, 33 (1)

Ajzen, I. (1991). The theory of planned behaviour. *Organizational behaviour and human decision processes*, 50 (2), 179-211.

Lyndhurst B. (n.d). *Rapid Evidence Review of Littering Behaviour and Anti-Litter Policies*. A report done by Zero Waste Scotland.

Njeru J. (2006). The Urban Political Ecology of Plastic Bag Waste Problem In Nairobi, Kenya. *Geoforum* 37, 1046-1058.

Ojedokun A. O. and Balogun S.K. (2011). Psycho-socio-cultural Analysis of Attitude towards Littering in a Nigerian Urban City. *Ethiopian Journal of Environmental Studies and Management*, 4:1

Ojedokun O. (2011). Attitude towards littering as a mediator of the relationship between personalities attributes and responsible environmental behaviour. *Waste Management* 31 (12): 2601-2611

Ojedokun A. O. and Balogun, S. K. (2013) Self-monitoring and responsible environmental behaviour: the mediating role of attitude towards littering. *Review of Psychology Frontier*, 2 (1): 31-38. <http://www.ajol.info/index.php/ejesm/article/viewFile/67204/55305> 65

http://www.unep.org/geo/pdfs/NCEO_Report_FF_New_Text.pdf

Cooley R. R. (2005). The effectiveness of signage in the reduction of litter in backcountry and front country campsites. Master Thesis University of Manitoba (Canada), 111.

Environmental Campaigns Ltd (ENCAMS) (2001). *Segmentation Research: Public Behavioural Survey into Littering*.

Furusa R. (2015). Literature review on Littering. A study exploring littering behavior and identifying strategies to curb littering.

Ministry of Tourism and Industry, Kaguvi Building, Harare, Zimbabwe

Ministry of Health and Child Welfare, Kaguvi Building, Harare, Zimbabwe

RCAC, Rugare Community, Harare, Zimbabwe

City of Harare, Kelvin Depot, Mbare, Harare, Zimbabwe

EMA, Environmental Management Agency, Westgate, Harare, Zimbabwe

GSJ