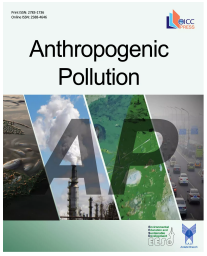

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Evaluating waste management practices of street vendors in the informal settlement of Cape Town: a case study of Khayelitsha

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Abstract:
Despite being classified as informal, street vendors play a crucial role in urban economies. Street selling and rubbish picking are the primary occupations engaged in by those affected by unregulated urbanization. These activities also subject them to other waste-related challenges within the outdoor setting. This waste is not properly disposed of, which in turn poses threats to the environment and public health. The objective of the current study was to evaluate the waste management practices of street vendors in Cape Town's informal settlements. Subsequently, to achieve this objective the current study collected qualitative and quantitative data using a structured questionnaire research tool featuring a series of questions used to collect useful information from street vendors. Moreover, the purposive sampling technique was used in this regard to collect data given that this method is time and cost-effective. The quantitative data was analysed using Statistical Product for Social Sciences (SPSS) version 26 whilst qualitative data used thematic analysis. The result of the current study indicates that the majority of the street vendors (40%) dump waste illegally behind the stalls and in an open space. This is not startling given that the vending business venture is predominantly characterized by individuals with secondary education or no formal education at all. Therefore, it was not surprising that only a small percentage of street vendors (12.3%) systematically manage their waste. The current discovery shows that street vendors in the informal settlements of Cape Town need environmental education to understand the importance of systematically managing waste and the risks associated with the indiscriminate dumping of refuse.

Keywords: Environmental law; Environmental management; Public health; Waste disposal; Waste management

1. Introduction

Waste management is a growing concern in many regions of the world because human activities inevitably generate waste (Hoornweg and Bhada-Tata 2012; Nyampundu et al. 2020; Grangxabe et al. 2023a). Because of this, individuals must comprehend the potential negative effects improper waste management can have on the natural environment. There are numerous types of waste, including municipal waste, hazardous waste, liquid waste, organic waste, and solid waste (Arjaqy and Fataei 2015; Fataei et al. 2004)(Medina, 2010; Guerrero et al., 2013). The majority of the waste generated by street vendors consists of solid waste, including plastics, paper, and meat, among other materials. Because different types of waste have different impacts on the natural environment, it is necessary to manage waste in a way that is adaptable to the different types of garbage that are generated (Fataei and Safavian 2017; Hemmati et al. 2019)(Zhang et al., 2010; Aladejana and Agbede, 2013; Hamilton et al., 2013). Population growth, urbanization, and rising consumption, according to the United Nations Environment Program, will likely lead to a doubling of waste production in cities in low-income countries in Africa and Asia over the next few decades (White et al. 2017; Hardoy et al. 2021). Among the factors that contribute to illegal dumping are insufficient knowledge of waste management, a lack of adequate facilities to manage waste generated, and a lack of authority enforcement regarding illegal dumping issues. Several factors contribute

to illegal dumping, including those listed above (White et al. 2017; Cremiato et al. 2018; Fataei et al. 2011).

Illegal waste disposal is a problem that affects not only the environment and public health but also the economy and other facets of society (Nahman and Godfrey 2010; Vaverková et al. 2019; Grangxabe et al. 2023b; Ojaghi et al., n.d.; Fataei and Hashemimajd 2012). In developing nations, the illegal dumping of waste is caused by a lack of adequate infrastructure to manage produced waste (Rugoho 2017). A lack of knowledge may also contribute to the high rate of illegal dumping, as people are unaware that they can report illegal dumping to the appropriate authorities (Rugoho 2017; Niyobuhungiro and Schenck 2022; Khadem et al. 2020; Seiiedsafavian et al. 2014). Developing nations have a higher illegal waste disposal rate than developed nations (Miandad et al. 2017; Amirfazli et al. 2019; Fataei and Alesheikh 2009). The generation of solid waste (Amegah and Jaakkola 2016) and liquid waste is rapidly increasing in developing nations such as Nigeria, Uganda, and South Africa, where street vendors generate waste (Amegah and Jaakkola 2016; Couth and Trois 2010; Safavian et al. 2015; Fataei et al. 2006). In most cases, developed countries such as Germany, the United States of America, and Canada generate a large amount of waste in contrast to developing countries. However, these developed countries do not have a problem with illegally disposed waste in comparison to the developing countries. These may be largely, due to good infrastructure and technological advancements in strategic ways to deal with waste which the developed countries have at their disposal. On the other hand, the absence of infrastructure and technological advances in developing countries encourages the illegal disposal of waste (Bing et al. 2016).

Street vendors refer to the practice of selling goods to the public without a permanently erected structure (Asiedu and Agyei-Mensah 2008; Schenck et al. 2022). It is also one of the most visible occupations in the informal economy (Roever 2016). Vending occurs on the streets (Bhowmik 2012; Roever 2016), as a major source of employment and income for urban residents, particularly in developing countries, street vending is viewed in different ways by different people, some of which are positive and others of which are negative (Chitotombe 2014)(Chen, 2004; Donovan, 2008). Street vending is one way for people to make a living and provide for their families, and it is gaining popularity in developing nations with high unemployment rates (Rugoho 2017; Adama 2020; Seiiedsafavian and Fataei 2012; Ojaghi et al. 2021). Street vending is one of the most prevalent phenomena associated with urbanization in developing nations, where urbanization is increasing at a faster rate than in developed nations (Abrahale et al. 2019; Sekhani et al. 2019). Street vendors operate in open and highly contested public places and spaces, and waste management concerns as they are frequently blamed for the littered and filthy streets (Chitotombe 2014; Gamieldien and Niekerk 2017). Some literature on street vendors and littered streets assigns blame to street vendors and connects filthy streets to their food preparation and sales (Chileshe 2020), 70% of street vendors are estimated to sell food in South Africa (Arias 2019; Gamieldien and Niekerk 2017; Govender and Reddy 2020; Muyanja et al. 2011; Rugoho 2017).

Street vendors are frequently portrayed as offensive and illegitimate invaders who impede the ability of cities to modernize and attain a global status, although this may not be the case because street vendors bring their services to the people at a more affordable price (Bhowmik 2012). For a variety of reasons, the practice of street vending is plagued by the problem of improper waste disposal, and the waste that is produced by vendors has a variety of environmental impacts (Anetor 2015). The illegal dumping of waste causes several problems, including the attraction of rats, an increase in air pollution caused by smoke emitted during meat preparation, a decrease in the area's appeal, and blockages in the drainage system (Rogerson 2016; Srivastava 2020). Due to the improper disposal of plastics and paper that can be washed away to the nearest drain and cause blockages, rats find this to be a source of food. This is largely because the street vendors sell food products and illegally dispose of any leftovers or by-products associated with the sold foodstuff. Subsequently, this leads to the obstruction of drains as well as the source of food for rats (Nahman and Godfrey 2010).

Together with the rapid economic growth in developing countries, the ever-increasing population also influences the availability of more vendors, increasing waste production (Ichinose and Yamamoto 2011). Waste generation is an unavoidable and significant problem in South Africa, particularly in the Western Cape province, and this problem must be effectively addressed through waste management (Schenck et al. 2022; Khayatnezhad et al. 2011; Khoshraftar et al. 2020). The practice of dumping waste without regard for environmental impacts is a global issue that has been studied in many countries from a variety of vantage points, with an emphasis on environmental concerns (Chang 2016). According to research, the misconception that "litter creates jobs" exists in many communities; as a result, illegal dumping is exacerbated by this misconception (Bing et al. 2016). The majority of street vendors reside in developing nations, which are characterized by rapid urbanization and high unemployment rates. Because they (street vendors) illegally dispose of their waste, the rapid increase of street vendors in developing nations poses a significant environmental threat. This issue is due to the rapid expansion of street vendors. The pollution caused by street vendors is most noticeable in the central business districts of cities in developing nations, due to the absence of adequate infrastructure to accommodate street vendors. South Africa, as a developing nation, is not an exception to this problem, despite having stringent laws governing street vendors, such as the polluter-pays principle and the producer-pays principle. The problem is evident in metropolitan areas and townships. It is unclear what could be causing this issue of illegal dumping by street vendors, especially in the township. Since this issue affects a large number of people in the township, one must question whether it is a matter of government compliance enforcement or street vendor ignorance. This study aims to evaluate the waste management practices of street vendors in the informal settlement of Cape Town. This research focuses on the waste management techniques of

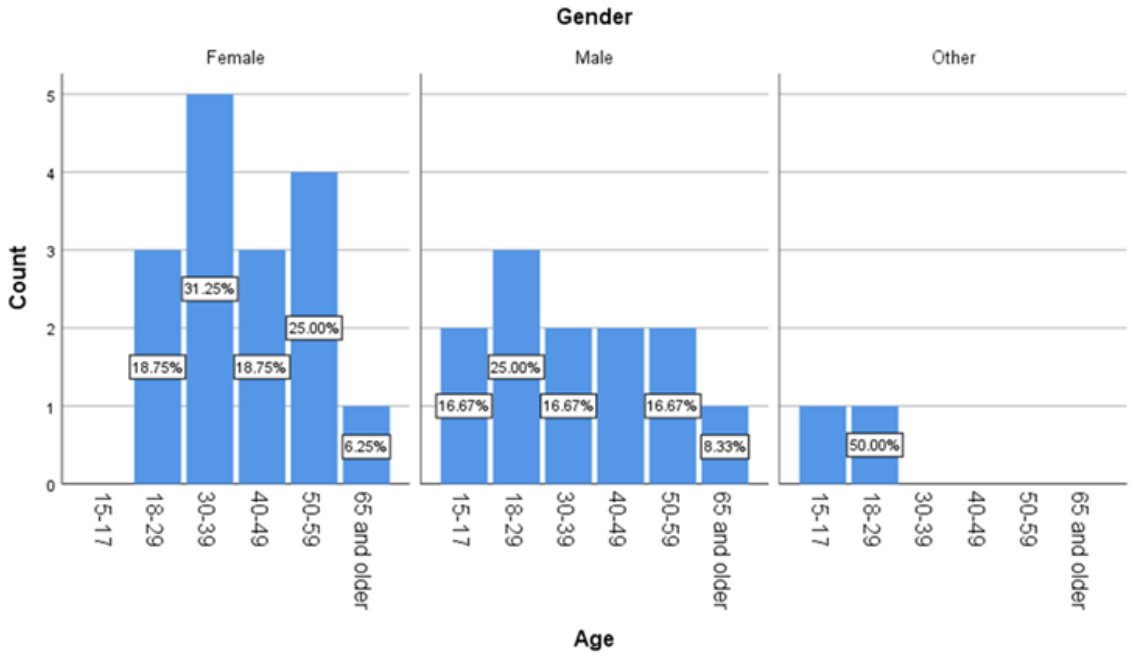

Figure 1. The age and gender demographics of street vendors that participated in the study.

street vendors, which is a topic that has received less attention compared to studies on municipal or household waste in South Africa. This sector of the informal economy is essential for the sustenance of numerous residents, and its methods of waste management may vary considerably from those of households.

2. Methodology

2.1 Study area

Khayelitsha is one of the five largest slums in the world, and it is also one of the biggest townships in South Africa situated at 34.0145°S, 18.6497°E. Khayelitsha is subdivided into sections including Makhaza, Kuyasa, Harare, Makhaya, Town Two, Ilitha Park, Site B (consisting of the more recent K-Z sections), and Site C. Site C is one of these sections and consists primarily of a squatter settlement. The township of Khayelitsha is dominated by a population of black people who live in poverty (Nleya and Thompson 2009). The study focused on the Site C section of Khayelitsha which is in the Cape Flats under the City of Cape Town. Site C is a legalized squatting area where basic services such as the bucket system, sanitation, communal taps, and water drainage are provided. The original size of land parcels was 150 square meters. According to Ngxiza, the survivalist informal sector is still Khayelitsha's primary economic sector (Ngxiza 2011). This indicates that the vast majority of businesses are unregistered and engage in unregulated economic activities that do not contribute to GDP (Broembsen 2010). Garcia-Bolivar argues that estimating the size of the informal sector is a challenging and problematic endeavour (Garcia-Bolivar 2006). In Khayelitsha, informal businesses include seamstresses and tailors, street vendors of fruit and vegetables, catering businesses, Spaza shops, shebeens and taverns, hairdressers, and barbers (Chiloane-Tsoka 2013). Site C is also home to Spaza shops, minibus taxis, the sale of building materials such as zinc, windows, and wooden planks, and second-hand furniture stores. Other small business owners provide shoe repair, panel beating, and flat tire repair. This study is focused on illegal dumping in Khayelitsha particularly Site C Taxi rank where most of the waste is generated due to a high number of street vendors in the area. Around the taxi rank, there are a lot of business activities taking place from spaza shops to street vendors selling meat, clothes, sweets, fruit, vegetables, etc. All these activities generate waste every day.

2.2 Waste management policies and regulatory frameworks

du Plessis (2019) stated that the City of Cape Town policies when it comes to waste collection are often slow in areas that are manifested with violence, and this forms a delay and accumulation concept whereby the waste accumulates due to delay in service delivery in which in return results in attrition. It is important, however, to look at the system for waste collection in Site C informal settlement it has to make use of a door-to-door black bag collection system since the same infrastructure especially roads is in bad condition. In informal settlements, solid waste problems are exacerbated by the lack of basic facilities and services, particularly the absence of adequate roads and housing. Informal settlements are densely populated neighbourhoods comprised of communities residing in self-built shacks under traditional or informal land tenure and houses constructed without proper planning (Campos and Zapata 2013). Waste management practices in informal settlements are diverse, rigorous, and unique. The strategy for waste disposal in such communities is a complex aspect of waste disposal management. Street vendors in South Africa are a rising business, in most townships around the country ven-

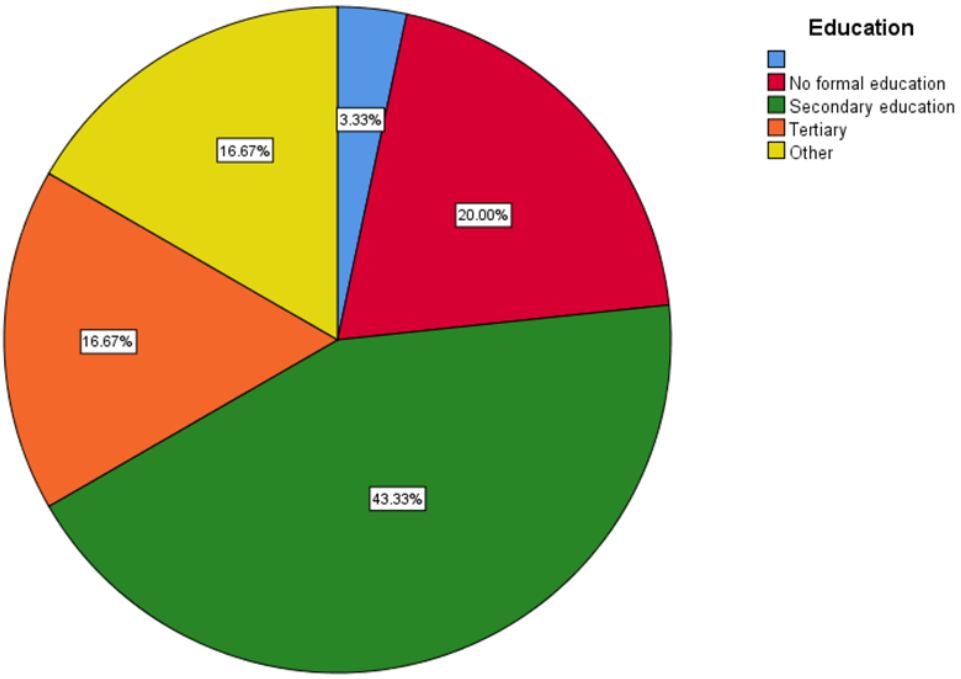

Figure 2. Education level of the participants.

dors are predominant and this is caused by socio-economic issues (Rogerson 2016). Nonetheless, the rise in the number of vendors also increases the rate at which waste is illegally dumped and this has negative impacts on the environment (Schenck et al. 2022).

3. Data collection

3.1 Research design

The methods of research must permit a scientific and well-founded investigation of the specified issue (Welman and Kruger 2001). Case studies enable researchers to comprehend, interpret, observe, and study complex phenomena in their natural contexts. To this end, the current study adopted a research design previously executed by Nyampundu et al. (Nyampundu et al. 2020). As such the study employed an exploratory descriptive case study with mixed research approaches. "Case study research design is recommended when a researcher intends to get detailed qualitative accounts to explore or describe the data in a real-life environment and explain the complexities of real-life situations which may not be captured through experimental or survey research" as suggested by Nyampundu et al. (Nyampundu et al. 2020). Subsequently, as observed by Nyampundu et al. this study design helped the researcher to evaluate the waste management practices of street vendors in the informal settlements of Khayelitsha Cape Town (Nyampundu et al. 2020). Whilst on the other hand the quantitative research approach was used to guide a researcher to collect information from the study respondents at a single point in time and involve all the street vendors as respondents, to have room to explain results in logic, numbers, detail, and generalized reasons in the informal settlement. Moreover, the study employed a qualitative research approach that enabled the researcher to gain a greater and more in-depth understanding of a studied phenomenon, and the experiences of the study respondents on the topic under study as prescribed by Nyampundu et al. (Nyampundu et al. 2020).

3.2 Study population

Most of the primary group of interest comprised Xhosa-speaking South African street vendors operating within the vicinity of the Khayelitsha neighbourhood. The residents of Khayelitsha formed a significant part of the population. This group encompasses vendors selling food products that range from meat, fresh produce and prepared food as well as sweets and chips. However, these vendors are not registered in the municipal database as they operate in remote informal settlements within the outskirts of the city. These street vendors represent the focal point of the study, as their practices directly impact waste generation and disposal associated with them.

3.3 Sampling methods

In this research data was collected using qualitative and quantitative data through the use of a questionnaire. A sample was drawn from the population of small informal business owners (street vendors) in Site C, Khayelitsha. Purposive sampling was the sampling method that was used to collect data because it is extremely time and cost-effective. This type of sampling was used because it is specific to the kind of data that was obtained and addresses the objectives of the research. In a specific situation, Maree defines purposive sampling as the technique to employ when a specific purpose has been identified (Maree 2011); in this study, the specific purpose was to evaluate the waste management practices of street vendor businesses in Site C, Khayelitsha. This study is not representative of all street vendors in Site C, Khayelitsha; however, it provides a valuable baseline against which future research on the obstacles street ven-

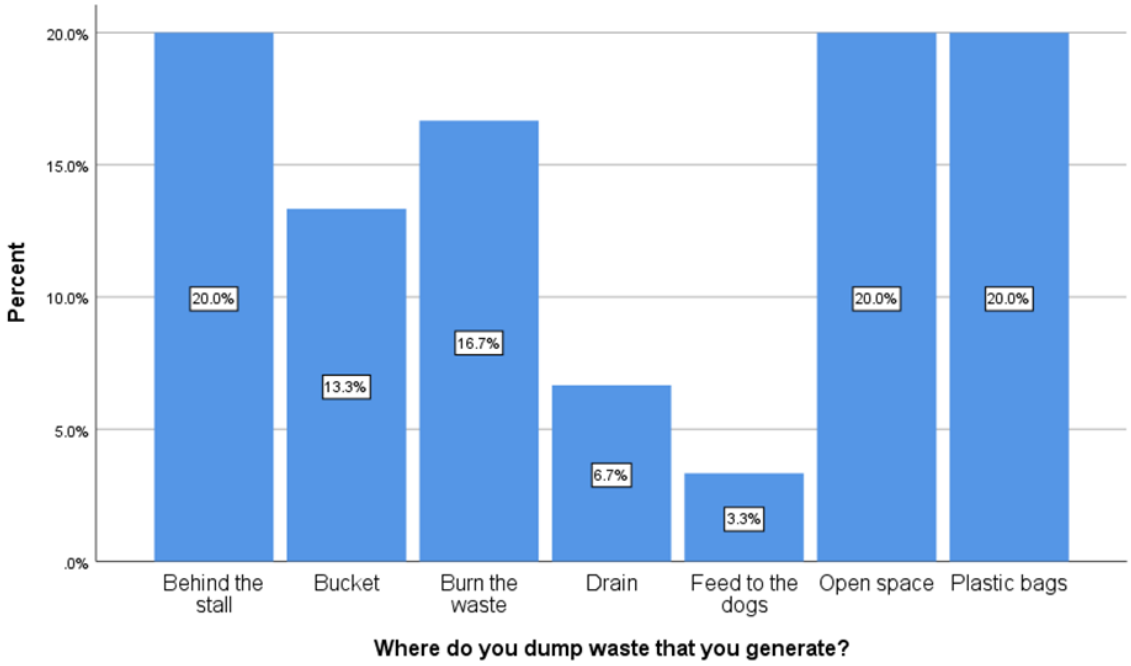

Figure 3. Respondents of where street vendors dispose of their waste.

dors face in the same area can be compared. According to Welman et al., the case study research method limits the number of units of analysis to facilitate a more in-depth examination (Welman et al. 2005). The research was therefore limited to 150 participants to enable the identification of commonalities between cases and an in-depth examination of the uniqueness of each case, given that the participants operate in different industries and have been in business for varying lengths of time. The purpose of this study's use of purposive sampling was to identify street vendors as key informants, as they possessed knowledge and experience regarding the issues being investigated. Purposeful sampling was chosen because it is a practical technique, especially when using a small sample size.

Fox and Bayat assert that to obtain a satisfactory response to an inquiry regarding the units of analysis at hand, the researcher must rely on his or her knowledge and originality of the subject matter, as well as previous research practices and accomplishments (Fox and Bayat 2007). Due to the lack of a relevant database of street vendors operating in the area of interest, this method was chosen. The questionnaire was composed of mostly closed questions because it is much easier and quicker for respondents to answer, this also makes it easy to compare, code and analyse the data. Open-ended questions were asked to determine the understanding of the participants about waste management and the environmental impacts of illegal dumping and whether people are aware of regulations regarding illegal dumping. Questionnaires were used to get information from street vendors and the following issues were taken into consideration. The confidentiality, privacy, and anonymity of participants were ensured. Consent was obtained in writing from all participants, and it was voluntary to participate.

3.4 Validity and reliability

During data collection, the questionnaire administered to the participants was guided by the objective of the current study. The administered questions were reviewed and approved by the experts in the field of solid waste management before going to the field. Furthermore, before heading to the field (pre-tests) the questionnaire was administered to a few individuals to assess how participants will approach the discussion. In this instance, the feedback from the few individuals assisted the researchers in adjusting the questionnaire accordingly. The questionnaire was administered to the participants on several occasions (twice) within three-week intervals to determine validity. The intervals between testing and retesting were prolonged to prevent individuals from memorising the questionnaire. The results were compared with the previous findings to establish validity.

Table 1. Respondents on knowing the environmental impacts caused by illegal dumping.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	50	33.3	33.3	33.3
	No	100	66.7	66.7	100.0
	Total	150	100.0	100.0	

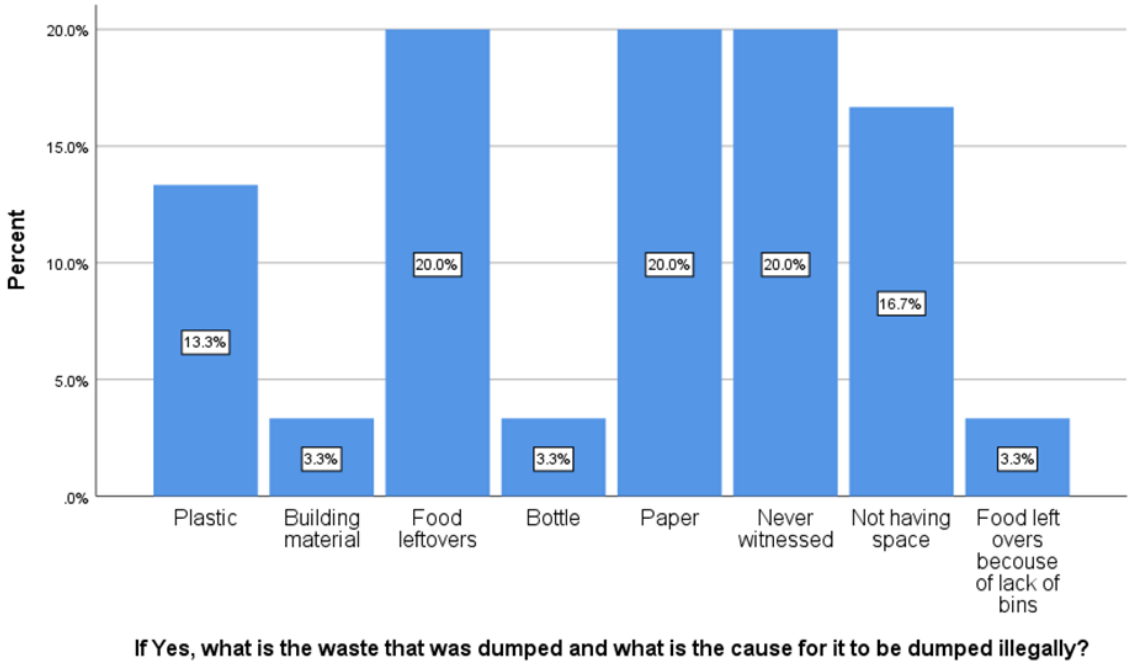

Figure 4. The type of waste that is likely to be disposed of illegally and the percentage of people who never witnessed illegal dumping.

However, to ascertain the reliability of the questionnaire outcome Cronbach's Alpha was calculated. An acceptable satisfactory Cronbach's Alpha of 0.76 was obtained from the pilot study.

3.5 Data analysis

A theme is an attribute, descriptor, component, or idea (Ayres et al. 2003). It is an implicit topic that organizes a collection of recurring ideas and enables researchers to respond to the research questions. It contains codes with a common reference point and a high degree of generality that unify ideas regarding the subject of investigation (Ryan and Bernard 2003). To identify themes, the researcher looked for word repetitions (the most frequently used words by respondents) to determine which themes participants deemed most important. Using IBM Statistical Package for the Social Sciences (SPSS) version 26, a program for editing and analyzing data (Verma, 2012) that ensures the meaningful and symbolic content of qualitative data, we analyzed questionnaire data such as demographic information (Creswell, 2007). The significance of the significant statements and phrases regarding the studied phenomenon was then formulated into significant statements.

4. Results and discussion

4.1 Gender and Age difference of the respondents

Figure 1 depicts the relationship between age and gender to determine which age and gender groups dominate the street vending industry. This industry is dominated by women, as 100 of the 150 participants were female, making up 60% of the vendors, while 33.33% were male and 6.67% were other. This observation differs from the one recorded in Majengo market in Dodoma City, Tanzania in which males dominated street vending (Nyampundu et al. 2020). The predominant age group among women is $30-39$, which accounts for 31.25 percent, followed by $50-59$, which accounts for 25.00 percent. This observation differs from the age group recorded in the Urban Settings of Tanzania (Kirumirah and Munishi 2021). The majority of males are between the ages of 18 and 29, comprising up to 25 percent of the male population; this can be attributed to the high unemployment rate in the country. According to Sekhani et al., 68% of street vendors in South Africa are females, demonstrating that women dominate the vending industry (Sekhani et al. 2019). A similar trend has been observed in Tanzania (Kirumirah and Munishi 2021). There are few females between the ages of 65 and older, making up only 6.25 percent of the population, which can be attributed to the age factor (elderly), whereas there are no females between the ages of 15 and 17 because it is assumed that these children are still at school. In order to make a living and support their families, young people are turning to street vending as a means of generating income. There were only two participants who identified as other, making up 6.67 percent of the population of street vendors; both are under the age of 30 years old.

4.2 The education level of the street vendors

Education is a key factor in people as it is important to understand things that are happening around them. Street vendors in Khayelitsha Site C make up 43% have secondary education as the highest educational level shown in Figure 2. The low rate of education in the street vending sector is not startling as previously corroborated by Gamieldien and van Niekerk (Gamieldien and Niekerk 2017). Vendors with no formal education make up 20% of the street vendors population and this is due to a lack of qualifications for them

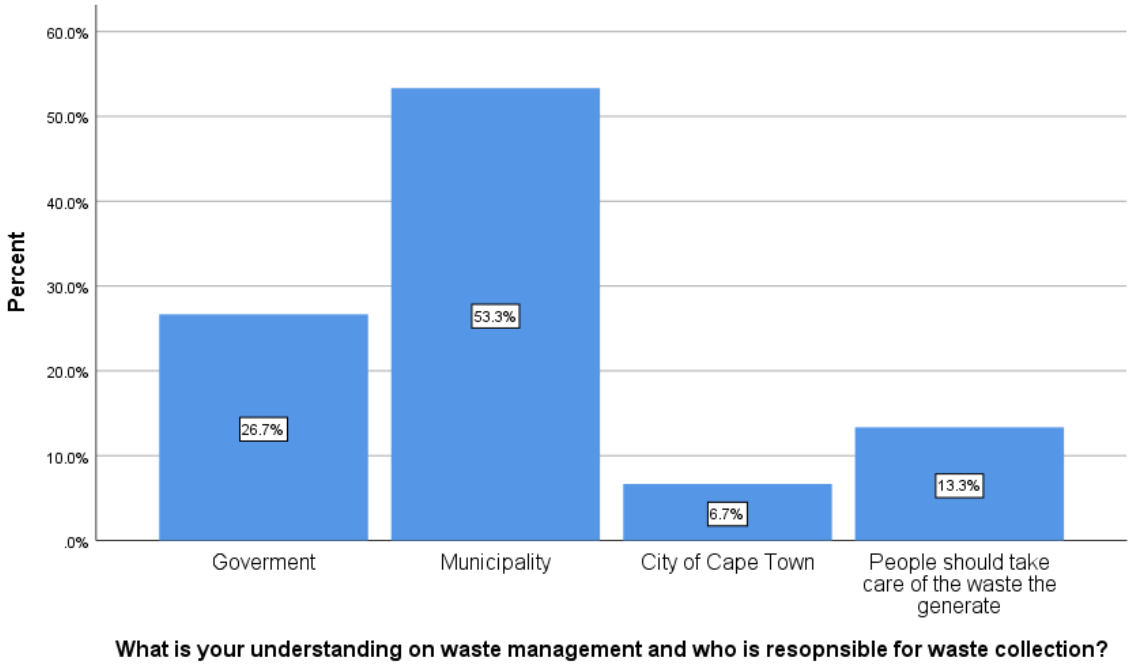

Figure 5. The perception of street vendors on entities responsible for waste management.

to obtain better jobs, then they depend mainly on vending to make income to support their families. Only 16.67% of the participants have tertiary education but did not complete their studies. Street vendors that selected others on their educational level made up 16.67% some had high school as their highest education level with only 3.33% of the participants did not give of their educational level.

4.3 Waste disposal methods practised by street vendors in Khayelitsha

Street vendors dispose of the waste they generate in different ways with 20% of the vendors disposing of their waste behind the stalls, in open spaces and in plastic bags which adds up to the majority of 60% of waste that street vendors generate being disposed of illegally (Figure 3). A similar practice has been recorded in the streets of Texas (Cabaltica et al. 2016). The use of plastic bags to manage waste can be effective, but there is a drawback; when the bags are full before garbage collection day, dogs can scatter the trash everywhere. Disposing of waste behind the stall and in open space has impacts on soil contamination and air quality because when waste is decomposing it emits gases such as methane which is harmful to the environment and contaminates the soil through the release of fluids when the meat is decomposing. As a traditional method of waste disposal, 16.7% of vendors burn their rubbish (rural strategy). Other scholars, such as Roberts, criticize this method of waste management because it negatively affects air quality due to the emission of greenhouse gases, such as sulfur dioxide, carbon monoxide, and particulate matter, which contributes to global warming (Roberts 2018). A large population of street vendors who make up to 40% of the vendors dump illegally (behind the stall and open space) this comes as no surprise because the majority of them have secondary or no formal education as shown in (Figure 3). However, this practice is incongruent with the street vendors of Johannesburg that recycle and reuse their waste (Kalitanyi 2021). People may dump waste illegally in open spaces and drains due to a lack of environmental awareness, not realizing that doing so can cause health problems such as respiratory diseases in living organisms, according to Singh et al. (Singh et al. 2016). Some street vendors use buckets and bins to collect their waste, they add up to 13.3%. The bins are collected once a week by the municipality; however, this can pose a problem when the bins become full before waste collection day, resulting in vendors illegally dumping the trash. This may be one reason why 6.7% of vendors dispose of both liquid and solid waste down the drain. Only 3.3% of street vendors who sell meat feed their leftovers and waste to dogs. This is a very effective indigenous method of waste management, but the number of vendors who practice it is inconsistent with the number of street vendors who sell meat. Most illegal meat vendors dispose of their waste in open areas, behind their stands, and in plastic bags (Figure 3). The problem of not having proper waste facilities to manage waste is a problem for most developing countries, in the study that was done by Rugoho (Rugoho 2017) in Zimbabwe also shows that the lack of bigger bins and infrastructure is one of the causes that lead people to dispose of waste illegally.

4.4 Waste items that are frequently disposed of illegally

The majority of illegally dumped items are depicted in Figure 4, with only 20% of vendors claiming to have never witnessed illegal dumping. Food scraps and paper make up the majority of illegally discarded items, with 20 percent and 16.7 percent of street vendors citing a lack of storage space as the cause. Plastic constitutes 13.3% of illegally dumped waste, which takes years to degrade in the envi-

ronment. This is a low number, which may be because the recycling industry is expanding and many people sell bottles, and 3.3% of the vendors believe that the lack of sufficient and larger bins is the result of people disposing of waste illegally. Brandt argues that the issue of insufficient bins does contribute to illegal dumping (Brandt 2017), but individuals dump waste out of carelessness due to a lack of environmental education. Therefore, environmental education is essential for making people aware of the potential environmental and health consequences of illegal waste disposal.

4.5 Assessing the knowledge about the environmental impacts of illegal dumping

When asked if they knew how illegal dumping might affect the environment, 66.7% of the street vendors said they didn't know, but they do know that the trash makes the area dirty. This finding may also be related to respondents' educational attainment, as 33.3% of respondents indicated that they do possess the knowledge. This is not startling given that Nyampundu et al. (Nyampundu et al. 2020) discovered that vendors' education levels and the duration of doing business at the market were related to their levels of awareness of SWM. This is because respondents with knowledge of the potential environmental impacts were those with a high school diploma or a college degree. This shouldn't be a surprise, since it's clear from the level of education (Figure 2) that most vendors have at least a secondary education, and the fact that most vendors throw away their trash in the open and behind their stalls (Table 1) shows that they don't know much about how illegal dumping can hurt the environment. The Nani study supports the notion that a lack of environmental knowledge contributes to the high rate of illegal dumping by humans (Nani 2016).

4.6 The role and perceptions of street vendors in the management of generated waste

The majority of street vendors, 86.7%, believe that it is not their responsibility to dispose of the trash they produce because the government is responsible for keeping the country clean. It is the responsibility of the government, the municipality, and the City of Cape Town, according to 26.7%, 53.3%, and 6.7%, respectively (Figure 5). These are all facets of the government. Because the government only collects garbage once a week, relying on them to do it results in filthy streets if everyone is responsible for their waste. The thoughts and opinions of the street vendors are consistent with the 2008 Waste Management Act, which assigns clear responsibilities for waste management activities to each branch of government. Schedule 58 of the Constitution mandates that local governments provide waste management services, such as waste collection, storage, and disposal. Even though the Act states this, it is the responsibility of the country's citizens to manage the waste they generate in order to protect and maintain a healthy environment, as the country's Constitution states that everyone has the right to a healthy, non-hazardous environment.

5. Conclusion

This study evaluated the waste management practices of street vendors in Khayelitsha Site C, as well as their experiences with littering. Due to the dumping of waste in open spaces (20%), drains (6.7%), plastic bags (20%), and buckets (13%), the illegal dumping practices of street vendors have negative environmental consequences. The study has discovered that the majority of street vendors, 86.7%, believe that it is not their responsibility to dispose of produced waste because the government is responsible for keeping the country clean. Furthermore, street vendors dump waste illegally due to ignorance of the repercussions and lack of infrastructure for waste disposal. To address this issue, it is necessary to enforce the government's Waste Management Act. The government has a Waste Management Act which needs collaboration from different stakeholders, and the steady increase in population rate and unemployment around the country are other issues that must be considered when addressing the issue of street vendors. The findings of the current study can be developed, and goals can be established through processes involving local government, informal street vendors, and researchers. Moreover, environmental education is equally important for street vendors to be aware of the significance of caring for the environment. That is, the is a need for regular awareness-raising activities about waste management among vendors. This highlighted the limitations of the current study, the absence of incorporating environmental education to the informal street vendors. Thus, future studies should adopt the participatory action research design to effect behavioural change in street vendors.

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