



RESEARCH TITLE:

“Street vendors of the CBD: vendors by day, food waste managers by night?”

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Street vendors of the CBD: traders by day, food waste mangers by night?

An investigation into food waste disposal practices within the informal sector and the impact these systems have on its consumer's perception of the brand.

28 August 2020

Manyaka Nkosi
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1. Abstract

The primary objective of this study was to investigate the relationship between the current food waste management systems utilised by the informal trade sector and the affect it has on the consumers perception of the meaningfulness of the brand and the industry it operates in. By its sheer size, the informal sector should play an important role in alleviating food waste and the increasing pollution within South Africa through efficient food waste management tools. Previous work has

neglected to look at the role the informal sector can play in reducing food waste through waste management projects and how improving such could have a positive effect on their consumers. Through this research it was found that low income consumers are indifferent towards street vendors waste practices. A brand meaningfulness theory specifically tailored for low-income consumers needs to be developed. This would aid business operating within the informal sector meet their consumer's needs.

2. Introduction

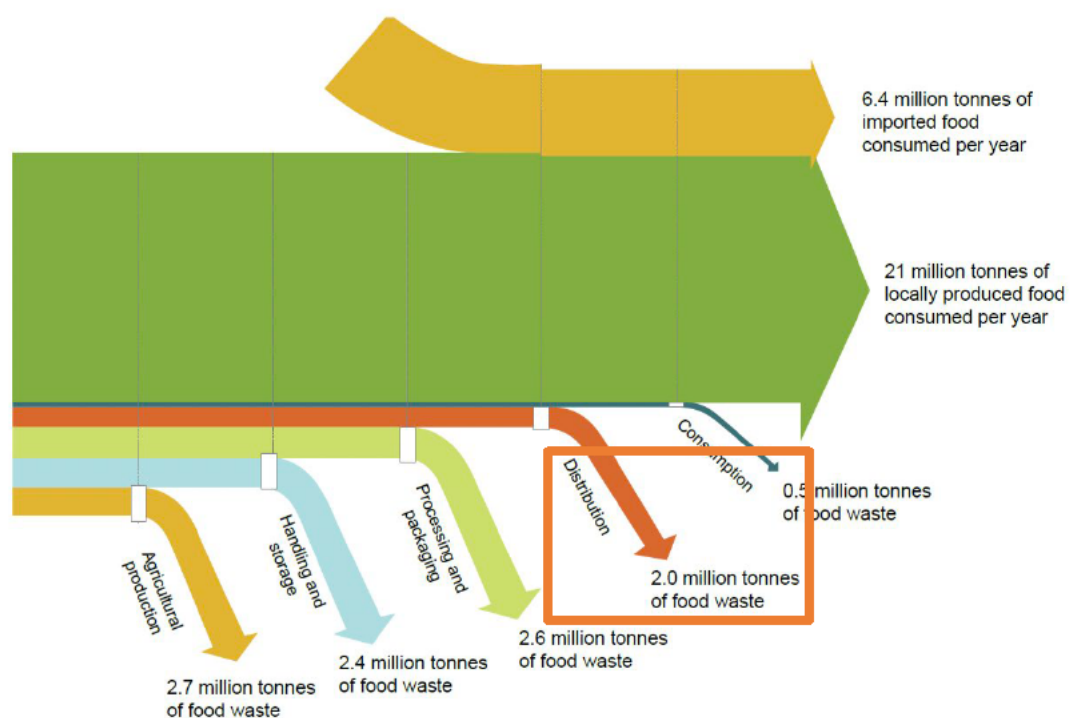
Johannesburg is synonymous with the rolling landscapes of the old mine dumps. The rate though at which landfills are piling up, this picturesque scenery will in the future be replaced. The importance of an efficient food waste management system has become apparent. This report will explore the current food waste management systems within the informal sector, with a specific focus on the street vendor market. The literature review provides evidence of the extent of the food waste issues we are currently faced with and the consequences thereof, and the role different sectors need to play to mitigate this trend.

The phenomenological research paradigm was used in this study, utilising questionnaires and interviews to collect the data from respondents in the Johannesburg CBD. Inductive reasoning was practised to conclude the investigation of food waste disposal practices of produce selling vendors and the impact a food waste management system implemented by a retailer has on its consumer and their perception of the brand. A brand's meaningfulness lies in the customer's trust in the institution; meaningfulness has become the new metric for measuring brand strength (Havas Group, 2017). The impact of a brand has moved beyond the bottom line onto the impact the brand has on people's everyday lives (Havas Group, 2017). What is more integral to people's everyday lives than the food that they and their families consume?

The findings from the study indicate that Low-Income consumers do indeed make trade-offs when personal care products fall outside their realm of affordability. The extent to which they do so varies, based on necessity.

2.1. Rational

The environmental and socio-economic repercussions of food waste and loss have become an increasingly important topic that warrants global concern (WWF, 2017). Food security is one of the basic needs of a human; it remains imperative as it is needed for human survival (WWF, 2017). Accessing readily available fresh produce is a continuous, significant challenge facing many countries in the African continent (Battersby, Marshak, & Mngqibisa, 2016). Research on food losses and waste in South Africa has primarily focussed on reducing harvest and post-harvest losses and waste (Oelofse, 2019). As seen in Figure 1, almost 2 million tons of food is wasted at the food distribution stage of the food chain, a significant enough number to warrant attention.



Source: Reproduced from data in Nahman and De Lange (2013)

Figure 1: Estimated avoidable food waste throughout the supply chain in SA – 10.2 million tonnes per annum (Oelofse, 2019).

Within the food distribution phase of the supply chain researches have focused mainly on the formal sector. Given the size of the informal sector in our continent,

it would be beneficial to address it. Previous research has been done in this field but does not examine the phenomena in the South African context, particularly pertaining to fresh produce street vendors within CBD's. Figure 2 illustrates the significant amount of fruit and vegetables, which is wasted in the distribution phase of the supply chain justifying the focus on fresh produce retailers (Oelofse, 2019). A fact that is bolstered by the sheer size of the informal sector in South Africa and the central role they play in feeding the working class of our country. Little research in the South African context, has been done to understand the existing food waste management systems within the informal trade sector and what environmental impact this industry has had.

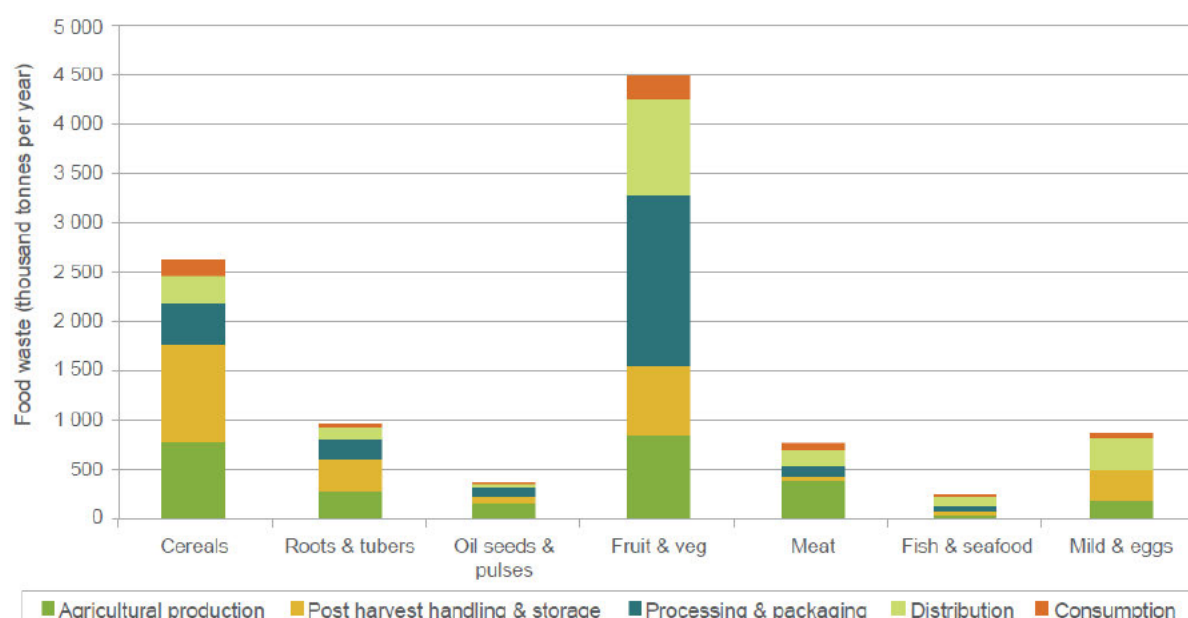


Figure 2: Estimated food wastage in SA by commodity group (Oelofse, 2019).

Fresh produce street vendors are an integral part of the food supply chain in South Africa and are one of those omnipresent parts of our country's central business district's (CBD) (Battersby et al., 2016). They are a popular retail choice among locals because they are accessible, convenient, and cost-effective (Battersby et al., 2016).

The environments street vendors operate in are often polluted and dirty (Battersby et al., 2016). Unless intervened, this trend will continue. Failing to do so could have grave consequences on the CBD real estate value, and the ongoing spread

of infectious disease will continue to burden the health care system (Ndlangamandla, 2017). This report aimed to explore the current food waste management system within the informal sector with a specific focus on produce selling street vendors within the Johannesburg CBD. A systematic investigation into the role the street vendor sector can play in alleviating food waste and pollution in the CBD through waste management systems. Furthermore, does the polluted state street vendors operate to affect the consumer's perception of the meaningfulness of the brand and its industry? The theory of a Meaningfully Different Framework was used as a theoretical framework to assist in understanding the impact street vendor's food waste management systems have on brand meaningfulness -in specific relation to the low-income consumer.

2.2. Problem statement

This research was guided by the following problem statement:

The informal sector should play an important role in alleviating food waste and the increasing pollution within South Africa through efficient food waste management tools. The implementation of such will have a net positive effect on their consumers' experience of the brand.

2.3. Research Goal

The study intended that the research conducted wouldl portray accurately the importance of informal trade by increasing the awareness on the pertinent role the sector can play in alleviating the increasing pollution levels through the change of food waste management systems in South Africa. It is those from low-income households that often purchase from these vendors, by improving the environment in which they operate we are improving the lives of their consumers.

The need for exploring food waste management systems within this sector is evident and could result in the recognition of good practices that other vendors can utilise. Opportunities for waste reduction can be ascertained. The challenges on the current system need to be uncovered, so they are adequately addressed. If the whole system is made more efficient and sustainable, even when the volume of waste increases, proper waste management will be possible. The study of the

Johannesburg CBD can serve as a model for other CBD's in the rest of the country and a model for research studies for the metro's around the African continent.

The recommendation proposed should be of interest to many stakeholders, including local municipal managers, consultants involved in waste management and provincial government. This issue must be addressed in a multi-disciplinary manner by both the private and public sectors to develop and implement effective food waste management strategies to ensure change (Giroto et al., 2015). A reduction in food losses through an effective food waste management system could have an immediate and significant impact on the livelihoods of those that are most susceptible to the financial impact food losses have on the cost of food (WWF, 2017). By having all facets of society, working together a sustainable plan for the future can be realised. The ongoing migration of people to economic hubs in the country means that the population in these areas will just continue to grow.

2.4. Research Questions

Developing a well-rounded research question is an essential step in the research process. (Johnson & Christensen, 2014). Formulated with the research objectives in mind, these questions hone in on the factors the researcher wants to address through their study (Johnson & Christensen, 2014). Research questions need to be specific to ensure that your research encompasses all of the variables you are investigating. A well-developed research question will aid in the design and conduct of your research study (Johnson & Christensen, 2014). In formulating the research questions, it is necessary to establish the type of research as well as the type of questions first. This study took on the mixed methods approach of research, meaning it included both qualitative and quantitative research approaches. Forming research questions for mixed methods studies is significantly more difficult than in monomethod investigations because it involves the formation of both quantitative and qualitative research questions within the same research (Onwuegbuzie & Leech, 2006).

Below are the research questions that guided this study.

1. What food waste management practices do fresh produce selling street vendors located in the Johannesburg CBD use?
2. Are the current food waste management systems utilised by fresh produce selling street vendors located in the Johannesburg CBD effective in counteracting food waste?
3. Do the current food waste management systems used by produce selling street vendors influence the customers' perception of the brand?

3. Literature Review

A sound research report has its groundwork in popular, robust literature that will guide the outcomes of the study. To follow is a blueprint on which the report's foundation was built. A good starting point for unpacking the literature is understanding what food waste management is, both globally and in the South African context.

3.1. Food waste management

According to a study conducted by the Food and Agriculture Organization of the United Nations (FAO) in 2011, of the food produced for human consumption, roughly a third (1.3 billion tons per year) is either lost or wasted. Waste can be described in a relative or subjective term; relative because it is viewed in different ways by different people and subjective because what is waste to some may not necessarily be to others, tinting the lens through which one explores the concept of food waste management (Ajiboye, 2017). For this report, the definition of food waste is taken from the FAO study, which defines food waste as food that is disposed of even though it is still suitable for humans to ingest (FAO, 2011). If the current food waste patterns continue, "it is estimated that food production may have to increase by as much as 70% to feed 9 billion people in the world by 2050" (WWF, 2017). Given that arable land is on the decline due to environmental factors and the increasing scarcity of water, it is near impossible that the world would be able to produce the amount of food needed to feed all its inhabitants in a mere 30 years (WWF, 2017). The environmental and socio-economic

repercussions of food waste and loss have become an increasingly important topic that warrants global concern (WWF, 2017).

The food supply chain is made up of several stages from agricultural production, harvesting, post-harvest storage and handling, processing, packaging or distribution, retail, and ultimate consumption (WWF, 2017). As illustrated in Figure 1, from the initial harvest through to household consumption, there is food loss or wastage of consumable food.

Throughout the food processing and packaging stage, the rate of food loss and food waste is high due to factors such as damage during transportation, inadequate storage facilities, losses during processing, and contamination (Parfitt, Barthel, & Macnaughton, 2010). Food waste generated during the retail stage is primarily due to problems in food handling, and a lack of proper storage (Parfitt et al., 2010). The generation of food waste by the consumer is caused by among many over purchasing, lousy storage conditions, over-preparation, portioning and cooking as well as confusion between the terms "best before" or "use by" dates (Papargyropoulou, Lozano, Steinberger, Wright & Ujang, 2014) This extensive loss of food is a worrying trend given the levels of food insecurity globally (FAO, 2011).

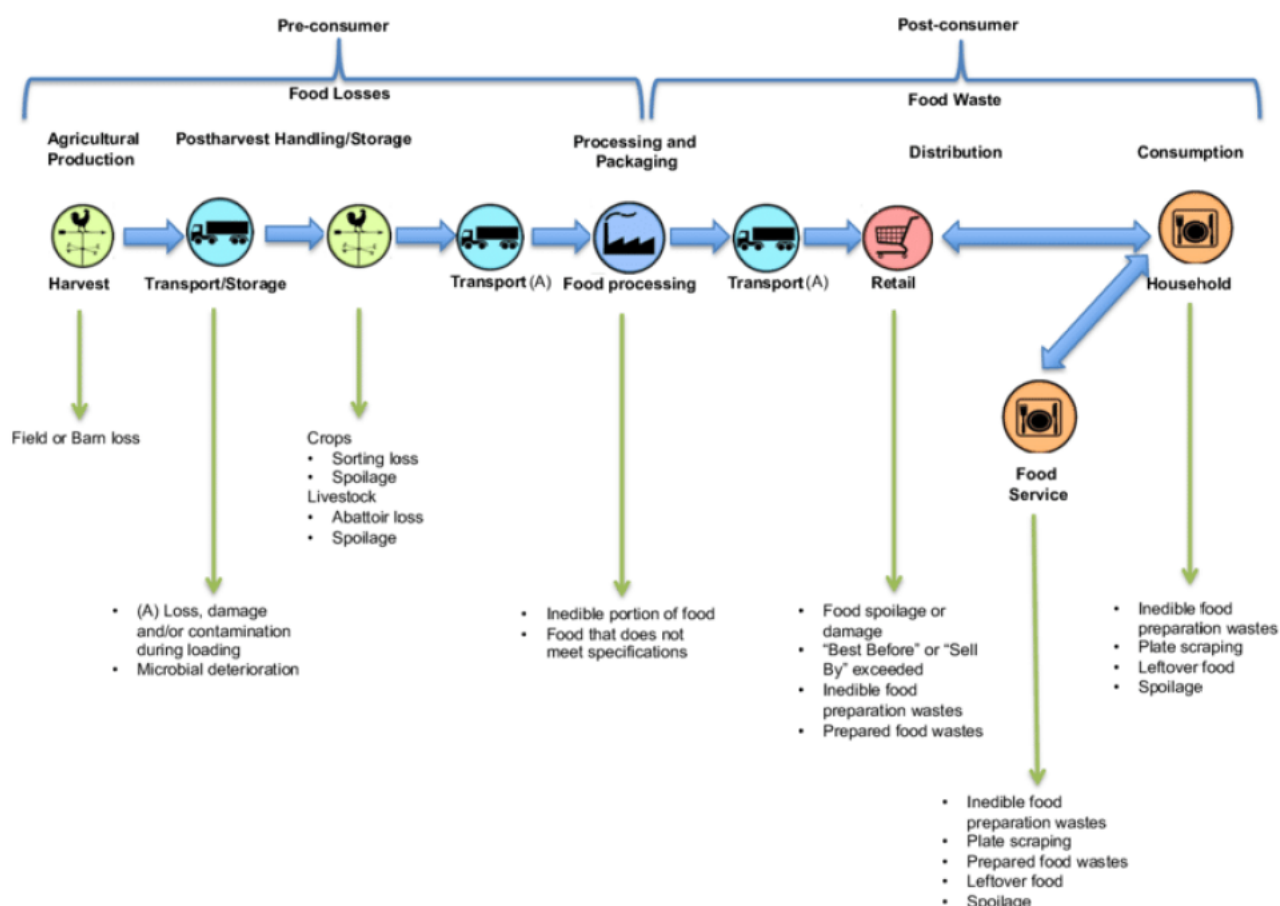


Figure 3: Food supply chain (FAO, 2011).

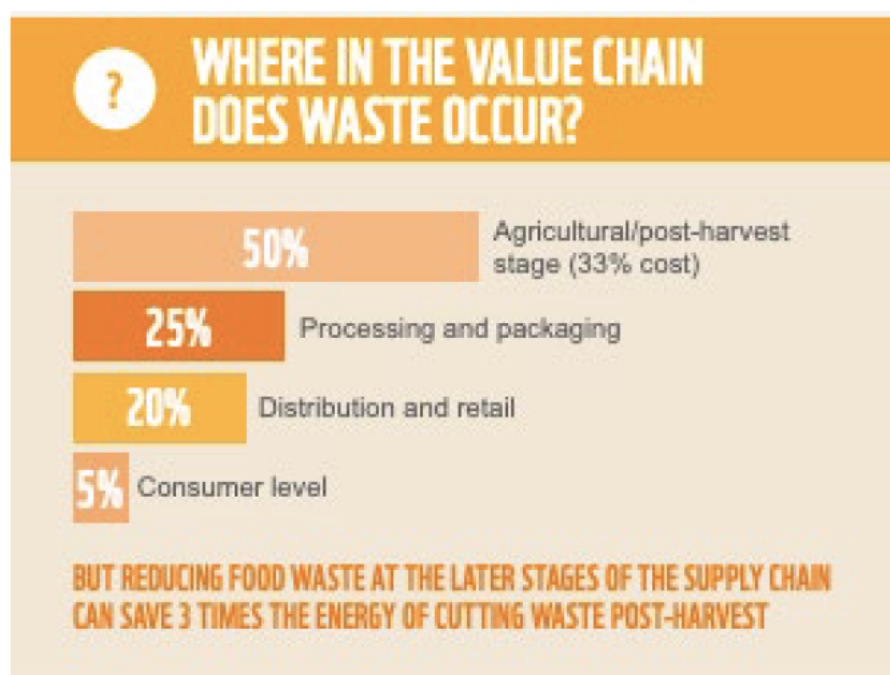
Figure 3 shows the difference between 'food loss' and 'food waste.' These processes occur at different stages in the food supply chain. Food lost at the post-harvest stage is generally referred to as 'food losses' and 'spoilage'. In contrast, in the later stages of the food supply chain, it is termed 'food waste' and generally applies to food lost due to behavioural issues (Papargyropoulou, et al., 2014). The latter stage is where this report's attention was focused.

There is a distinct difference between food loss and wastage in developed countries and developing countries. In higher-income countries, food is predominately wasted at the consumption stage (FAO, 2011). In contrast, food in low-income countries is lost mostly during the early and middle stages of the food supply chain; much less food is wasted at the consumer level (FAO, 2011).

South Africa, as a developing country, has shown similar trends. Figure 5, taken from the report compiled by the WWF in 2017, illustrates this same pattern in South Africa.

Figure 4: Chart illustrating food wastage in the South African supply chain (WWF, 2017).

The causes of food loss and waste in developing countries are connected to a myriad of reasons from “limitations in harvesting techniques, storage, and cooling facilities, infrastructure, packaging, and marketing systems” (FAO, 2011). The impact of food loss and food waste permeates the environmental, social, and



economic spheres of life (Giroto, Luca & Raffaello, 2015).

The brand chosen for this report forms part of the retail link of the supply chain, a part of the system that, if changed, can impact both the way food is managed in the retail environment and the attitudes consumers have toward food purchases and consumption. Beyond the day to day impact on people’s food security, the increase of food waste in developing countries poses a significant threat for sustainable development and jeopardies the maintainability of the food management systems that are currently in place (WWF, 2017). Due to

incompetent food waste management systems, many developing countries are facing environmental and sanitary challenges (WWF, 2017). Preventing food wastage goes a long way in saving households money, a significant benefit given the economic stagnation and high unemployment South Africa is currently experiencing. (Oelofse et al., 2018).

3.2. The informal trade sector

In recent decades, developing countries across the globe have been experiencing an increasing prevalence of non-communicable diseases related explicitly to over-polluted environments. This trend is mainly attributed to rapid urbanisation resulting in a large number of people moving within economic hubs where job opportunities often lie.

The pursuit of economic emancipation is not unique to South Africa, but its political history influences its narrative. Townships were developed during the apartheid era, areas reserved for non-white population groups- Africans, Coloureds, and Asians (Group Areas Act, 1950). These served as residential areas for those who worked in white-only areas. These townships still house many of the individuals that work in and around CBD's, making them central to their daily commute.

For this report, a focus on the Johannesburg CBD is made. The Johannesburg CBD has evolved into an economic bionetwork where large corporates and informal traders are intertwined and operate side by side. One such group of informal traders are street vendors that sell fresh produce. The sale of this produce is made in public spaces such as sidewalks, street corners, or in regulated areas such as trading stalls demarcated by the municipal authorities (Tshandu, 2016).

There are common sounds that tell you that you are in Johannesburg's CBD. The sound of the city is characterised by an unrelenting orchestra of hooting taxis, the blaring mixture of kwaito, gospel and North African music from small foreign-owned shops and charismatic churches and the symphony of hawkers all vying for the attention of passers-by.

Looking at major cities of the African continent, it is evident that the informal sector, often ignored by government statisticians, is thriving (City of

Johannesburg, 2007). In South African cities, street vendors have a strong presence at taxi ranks and railway stations, embedding them as a part of many commuter's daily routines (City of Johannesburg, 2007). The Johannesburg CBD has four major taxi ranks: Noord Street Taxi Rank, Bree Street Taxi Rank, Wanderers Taxi Rank and Faraday Taxi Rank. These are the lifeline for commuters moving in and out of the city. Noord Street is by far the largest and busiest rank in the middle of the city (Tshandu, 2016). Noord street and the nearby Noord Street Market in the Johannesburg CBD was selected as the research site for this study.

Research done by Davies and Thurlow (2010) indicates that the street vending sector accounts for 7% of the national gross domestic product (GDP) in South Africa and has created 22% of the total employment in the country, demonstrating the sector's importance as a source of employment. Here again, the historical context is essential in understanding the street vendor culture. Street hawking was illegal during the Apartheid era, and the government tried by all means to stop it. As the winds of change blew, so too changed the government's stance on street vendors (City of Johannesburg, 2007).

The Business Act of 1991 allowed hawkers to trade freely, without licenses, which resulted in a significant and prompt increase in the number of street vendors. This change in policy coincided with the retrenchment of many workers in the formal economy. This led to massive growth in street trade activity. Many of the previously formally employed resorted to trading out of desperation rather than choice (City of Johannesburg, 2007). Johannesburg has been a site of informal trade for decades, but both municipal policies and public attitudes have varied widely in their responses to them.

By the year 2007, there were an estimated one million street traders in all of South Africa, over 70% of whom sold food, this number has continued to grow since (Arias, 2019). A study conducted by Women in Informal Employment: Globalizing and Organizing (WIEGO) in 2009 into the informal economy estimated that almost two-thirds of street vendors are identified as selling foodstuffs specifically, however, their earnings on average are lower while average hours worked per week are greater compared with street vendors of non-foodstuffs

(Willis, 2009). It is interesting to note that though produce selling is not the most profitable form of vending it is the preferred method. Why would vendors opt for selling produce rather than higher profit yielding and less time-consuming form of sales?

An essential change in the demographics of the street vendors is the shift from the trade being dominated by South African's who resided in nearby townships to traders who come from SADC countries, including Zimbabwe, Mozambique, Malawi, and Lesotho. Many other street traders are migrants from rural areas in South Africa, including Limpopo, Mpumalanga, and KwaZulu-Natal (Arias, 2019), where the traders originate from plays a role in their socio-cultural background and their level of education, factors to observe when conducting the research. Findings from the WIEGO study echo this sentiment.

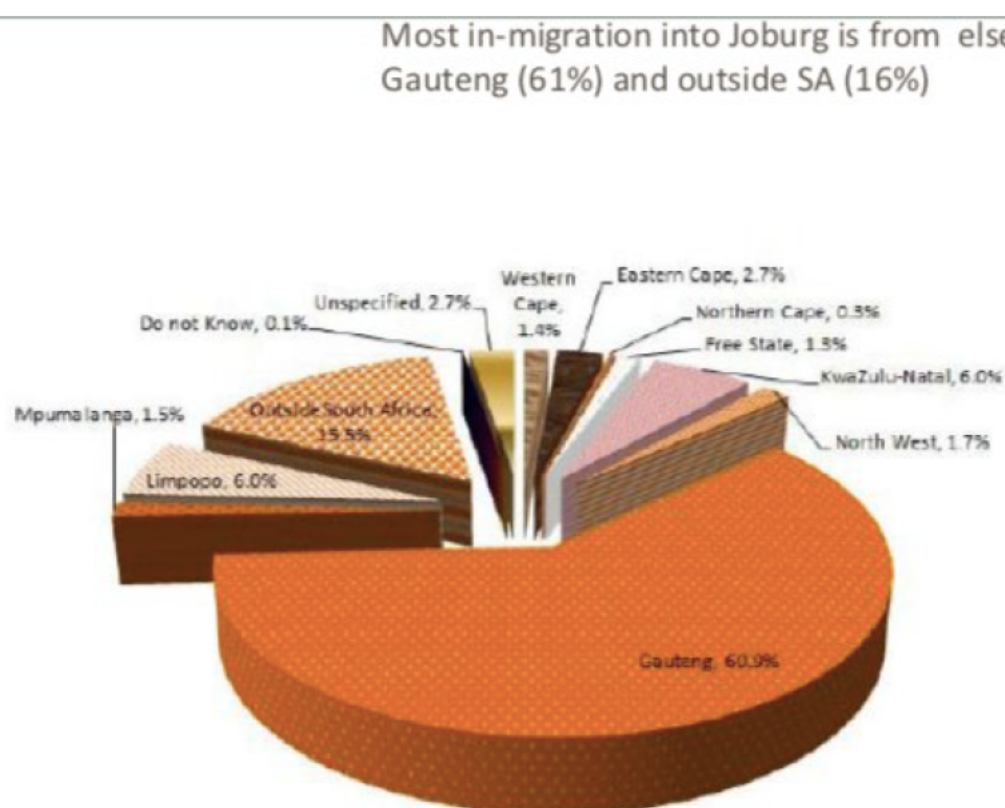


Figure 5: Demographics of immigrant street vendors in Johannesburg CBD (Willis, 2009).

A study performed in Lagos, Nigeria in 2017 “Effect of training on market women’s level of awareness and their disposition towards solid waste management in Lagos metropolis” provides a sound benchmark for a study conducted in a developing African country much like South Africa. One cannot merely assume theories developed in one place are not applicable in another. But in a bid to add to the body of knowledge on the subject and create a South African focussed solution using Ajiboye’s study as a blueprint for further research is the appropriate use of her work.

In studies cited by Ajiboye (2017) on waste management in Nigeria using Lagos and the Enugu States as case studies respectively, it was noted that factors responsible for the increase of solid waste were “improper waste disposal habit, poor attitudinal behaviour or perception of people towards solid waste, non-availability of waste bins in strategic areas, lack of provision of waste infrastructures, government policies, lack of education (illiteracy)” (Ajiboye, 2017:121). These factors are similar to those identified in a study conducted by Battersby, Marshak, and Mngqibisa (2016) of the South African street vendor market in Cape Town. The key to note is that this study found that the primary cause of food waste among these South African vendors was food spoilage due to lack of adequate produce transportation and cold storage- a trend noted earlier under the food supply chain (Battersby, 2016). How they dispose of this waste is illustrated in Figure 6. Many opt to rather than throw spoiled food away but willingly give it others. This method of food waste management is a factor to keep in mind when researching this report, as this contributes significantly to the well-being of the communities that street vendors operate and live.

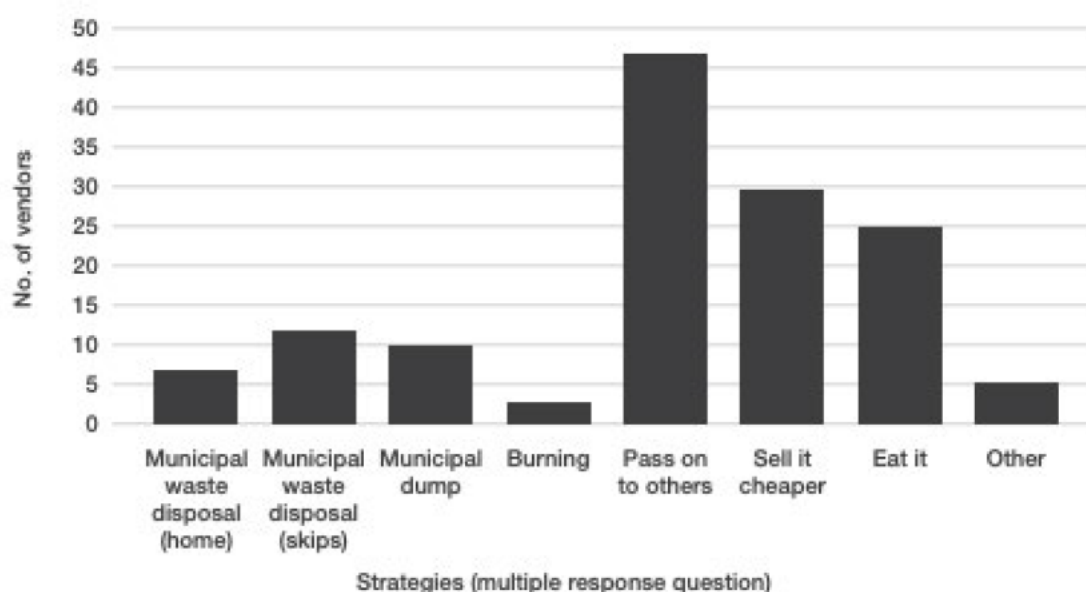


Figure 6: Strategies implemented by vendors to deal with spoiled or expired foods (Battersby, 2016).

Ajiboye (2017) chose to focus on the female demographic. The reasoning behind this is because females dominate the food market trade in Nigeria. They are often the harvesters of the farmland from which they get their produce, and they are the primary caregivers in their homes (Ajiboye, 2017). The rationale for focussing on this demographic was that educating females on adequate and proper food waste management would have the most significant impact on society, given the roles they play within their households, communities, and food trade market (Ajiboye, 2017). A similar trend was identified in the research done by WEIGO. Workers in the informal trade in South Africa are more likely to be women and to have never been married (WEIGO, 2009). They are also more likely to live in larger households with children, and particularly children under the age of seven. Significantly lower levels of educational attainment are also reported among informal workers when compared with formal workers (WEIGO, 2009).

3.3. The Consumer

Two-thirds of South Africans living in over 10 million households collectively earn less than R6 000 per month, but together they have the spending power of R300 Billion per annum (Bizcommunity, 2015). This demographic forms the lifeline of

the informal sector (Bizcommunity, 2015). More specifically, Ask Afrika's Kasi Star Brands survey 2019, notes that the driving force behind increasing brand loyalty in the township market is single women, who are speakers of Nguni languages and Sesotho and who are their families' breadwinners (Ask Afrika, 2019). This finding speaks to the point raised in the Lagos street market research, and the influence females hold. The cost of transport is significant to the low-income market; as a result, many households do one monthly bulk shop at a formal retailer and then do their top-up shopping at informal retailers that are close to their homes or en route to their work (Bizcommunity, 2015). A study into the state of food security in Johannesburg (Rudolph, Kroll, Ruysenaar & Dlamini, 2014) found that almost nine in every 10 Johannesburg households purchase their food from street traders, speaking to the important role this industry plays in food retail. A total of 996 households in Johannesburg were interviewed for this study and the result were telling.

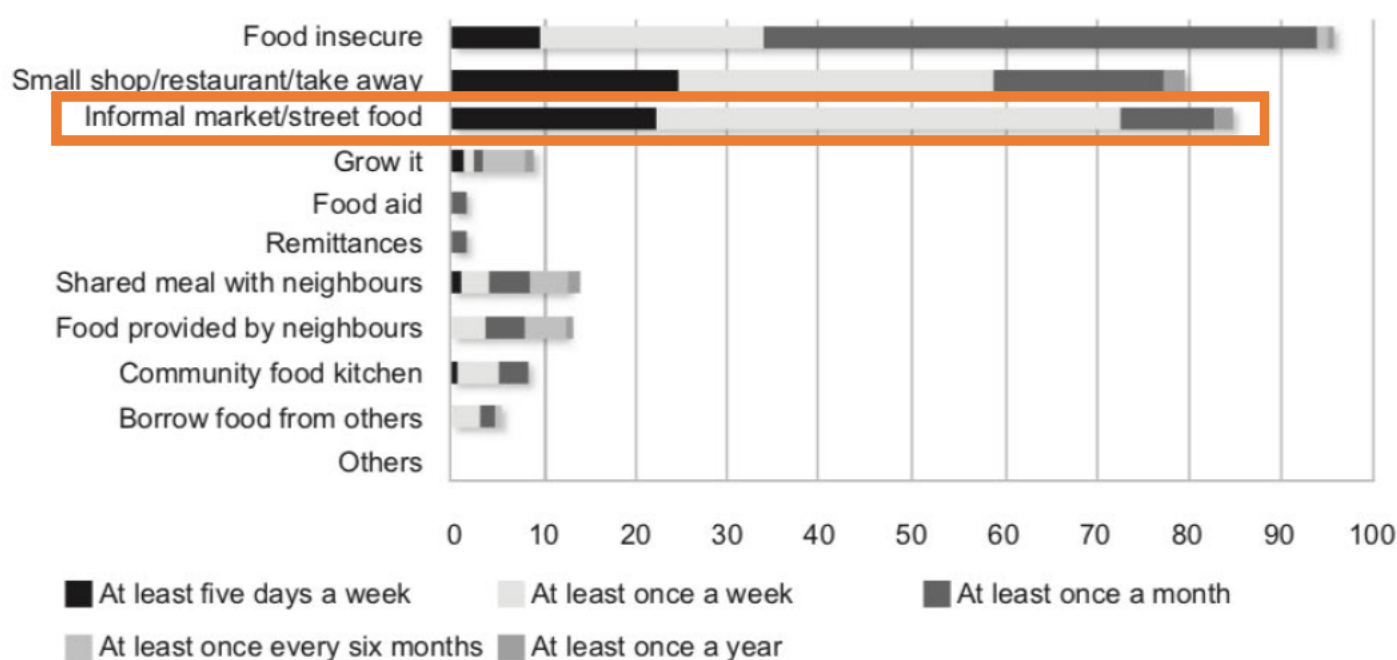


Figure 7: Frequency and Types of food Source (Rudolph et al., 2014).

Of the households interviewed just over 20% frequent informal traders on an almost daily basis (Rudolph et al., 2014). The preference for foods sourced from informal vendors may be linked to the difficulty and cost of transporting large volumes of food from supermarkets, and to inadequate cold storage in households

which may not have fridges or electricity (Rudolph et al., 2014). Informal food was more frequently sourced for day-to-day and weekly provisioning (Rudolph et al., 2014).

Baker et al. (2009) found a direct correlation between household food waste generation, household income, and the number of people residing in a household. Food waste decreases when there are more occupants, yet increases with household income level (Baker et al., 2009). Given the profile of the consumer that purchase from street vendors, it would be fair to deduce that food wastage in the household would be lower than the median South African home.

3.4. Summary

Below is a summary of the key findings from the literature review, themes that will guide the research design.

3.4.1. Food waste and its consequences

The FAO report showed a clear pattern in food waste at a global level. While middle and higher-income regions showed greater food loss and waste the consumption level, developing countries were more likely to lose or waste food at the production level due to lack of proper harvest techniques and infrastructure (FAO, 2011). But as illustrated in Figure 1, the amount of food lost in the consumption phase in South Africa is not negligible. It is a key phase at which a significant change is needed. The environmental and economic impact of food waste evident and needs to be addressed so that societies most vulnerable are protected and our planet survives for generations to come.

3.4.2. Importance of the informal sector

The informal sector but street vending, in particular, contributes considerably towards the country's economy. Informal trading has always played a role in South Africa's economy (Arias, 2019). It creates livelihood opportunities and contributes to alleviating poverty. The informal sector an often overlooked section of the economy needs to be considered for its contribution towards viable waste management solutions.

3.4.3. Key demographics of produce selling street vendors

Street vending provides opportunities for marginalised and historically disadvantaged groups, such as women. Street trade gives women - with lower levels of education, insufficient skills and a lack of business literacy- the chance to support their household income. Fresh produce vending is dominated by females.

Another key demographic is the places of origin for most street vendors in Johannesburg. Many of them come from outside the province to seek economic emancipation, the sector has evolved from one dominated by locals to those who originate from outside of the city's borders.

3.4.4. Street vendors as a retail choice

Street vendors are the preferred retail choice for many individuals particularly in the lower-income bracket (Rudolph et al., 2014). Their convenient location, affordable prices and quantities per package make it easy for their consumers to purchase from them (Rudolph et al., 2014). There is no evidence in the research conducted so far that the environment street vendors work in are a deterrent to those who buy from them, but could their business do better if they were able to tidy up their surroundings and manage their waste?

4. Research Paradigm

Understanding the chosen paradigm and the elements it comprises of is imperative as the research report will be guided by the assumptions, beliefs, norms and values of the chosen paradigm (Patel, 2015). In educational research, the term paradigm describes a researcher's way of looking at the world, the set of beliefs that guides and informs the meaning or interpretation of research data (Kivunja and Kuyini, 2017). Another apt description for a paradigm is "It is the conceptual lens through which the researcher examines the methodological aspects of their research project to determine the research methods that will be used and how the data will be analysed" (Kivunja and Kuyini, 2017).

Paradigms are based on epistemological, ontological, axiological and methodological assumptions (Patel, 2015). Paradigms as positions about these philosophical positions, exert significant influences on the methodology selected for a research project (Morgan, 2007). Different paradigms inherently contain differing views; therefore, they have different assumptions of reality and knowledge, which underpin their particular research approach (Scotland, 2012).

4.1. Philosophical positions

Epistemology is used to depict how we know the truth or reality. It focuses on the nature of human knowledge and comprehension that researchers can acquire, in order to have the option to expand and deepen understanding in a field of research (Kivunja and Kuyini, 2017). To understand the epistemological element of a chosen paradigm, a researcher must ask 'how we know what we know?' Does epistemology facilitate posing factual questions, such as how do we know the truth? In trying to articulate the answers to the questions on knowledge and truth, researchers can draw from four sources of knowledge namely; intuitive knowledge, authoritative knowledge, logical knowledge, and empirical knowledge (Slavin, 1984 cited in Kivunja and Kuyini, 2017). Epistemology establishes the reliance one places in the research data. It affects how a researcher will go about uncovering knowledge, given the historical and social context of the data sources (Kivunja and Kuyini, 2017).

Ontology is a branch of philosophy concerned with the assumptions we make to establish our belief like existence or reality (Scotland, 2012). Researchers need to take a position regarding their perceptions of how things are and how things work (Scotland, 2012). It examines a researcher's underlying belief system and philosophical assumptions, about the nature of being, existence and reality (Kivunja & Kuyini, 2017). Philosophical assumptions about the nature of reality are crucial to understanding how one makes meaning of the data gathered. These assumptions "orientate your thinking about the research problem, its significance, and how you might approach it so as to contribute to its solution" (Kivunja & Kuyini, 2017). Shaping ones thinking about the research problem and its significance; how a researcher might approach it to answer the research question;

and understand the problem investigated and what a solution could be (Kivunja & Kuyini, 2017).

The term methodology encompasses the research design, methods, approaches and procedures used in an investigation (Kivunja & Kuyini, 2017:28). The methodology conveys the rationale, and flow of the methodical procedures followed in doing a research project, in gaining knowledge about a research problem (Kivunja & Kuyini, 2017). Postulations made by the researcher, limitations encountered and how they were mitigated or minimised also form part of the methodology (Kivunja & Kuyini, 2017).

Axiology refers to the ethical issues that need to be considered when planning a research proposal. It considers the philosophical approach to making decisions the right decisions. It involves defining, evaluating and understanding concepts of right and wrong behaviour relating to the research. What values will you live by or be guided by as you conduct your research?

Ethical conduct is guided by four criteria, namely, teleology, deontology, morality and fairness (Mill, 1969 as cited in Kivunja & Kuyini, 2017).

4.2. Paradigms

"Positivism is largely concerned with the testing, confirmation and falsification, and predictive ability of generalizable theories about an objective readily apprehended reality (Chua 1986; Orlikowski & Baroudi 1991). Interpretivism instead focuses on understanding the subjective meanings that participants assign to a given phenomenon within a specific, unique context (Klein and Myers 1999; Orlikowski & Baroudi 1991; Walsham 1993)." (Wynn and Williams, 2012).

As formulated by Bhaskar (1998, cited in Wynn & Williams, 2012) and continuously developed by others, critical realism in the modern age, is set as the alternative to the positivist and interpretivist paradigm. Critical realism extracts elements of both to provide a new lens through which research can be conducted (Wynn & Williams, 2012). This is the worldview that will influence this report and will be fully explored below.

4.3. Chosen lens

Critical realism situates its research in social justice issues and seeks to address the political, social and economic issues, which lead to social oppression, conflict, struggle, and power structures at whatever levels these might occur (Kivunja & Kuyini, 2017). Critical realism acknowledges the role of subjective knowledge of individuals in a given situation as well as the existence of political and socio-economic structures that influence the way individuals conduct themselves in a particular setting (Wynn and Williams, 2012). This paradigm seeks to make a difference and to confront social oppression and improve social justice in the situation (Kivunja & Kuyini, 2017). This paradigm assumes a transactional epistemology, an ontology of historical realism, a dialogic methodology, and axiology that respects cultural norms. Researchers applying the Critical Realist lens are seeking to provide detailed causal explanations of occurrences or events in terms of both the participants 'reality' and the structures that interact that resulted in the outcomes in question (Wynn & Williams, 2012).

This report's epistemological approach leaned toward transactional epistemology guided by empirical knowledge. The research approach assumes that we cannot separate ourselves from what we know (Kivunja & Kuyini, 2017). The researcher and the objective of the research are linked such that who we are and how we understand the world is a central part of how we perceive the world. Empirical knowledge places emphasis on the understanding that knowledge is best drawn from sense experiences, and demonstrable, objective facts (Kivunja & Kuyini, 2017). Ontology of historical realism takes on the view that reality has been shaped by social, political, cultural, economic, ethnic, and gender values (Scotland, 2012). Realities are socially constructed entities that are under constant internal influence. Unpacking the experiences of those operating within the informal sector and the socio-economic context they operate in is a key component of this research paper. This will, however, be prejudiced by the researcher's interpretation of the vendor's reality.

The deontological approach guided this report. Deontology is the understanding that every action that will be undertaken during the research will have its consequence, intended to benefit participants, the researcher, the academic

community or the public at large (Scheffler, 1982). It also allows for flexibility to deal with individual participants or observations. By researching the effect current food waste management systems are having on the informal sector and the CBD, this report aims to add to the body of knowledge that will help improve the lives and environments that vendors work in.

Dialogic methodology requires that participants and researchers are both contributors in the “dialectical task of unveiling reality, critically analyzing it, and recreating that knowledge” (Scotland, 2012:14). Researchers are not making a difference for participants but with them. The dialogue is meant to be one of equals but often power differentials between researchers and participants exist (Scotland, 2012:14).

4.4. Theoretical Framework

Theories are developed by researchers to explain phenomena, draw connections, and make predictions. They are based on existing knowledge, observations, and ideas, the purpose of which is to explain or predict the phenomenon (Jourdan, 2009). A street vendor qualifies as a brand due to the definition of a brand as “the set of associations –ideas, memories, and feelings– in the mind of an individual” (Alagon & Samuel, 2013).

Brand equity has been viewed from a variety of perspectives (Aaker 1991; Farquhar 1989; Srivastava & Shocker 1991; Tauber 1988). Among the different theories tested in measuring a brand’s equity, those that relate to a customer-based definition of brand equality dominate (Jourdan, 2009).

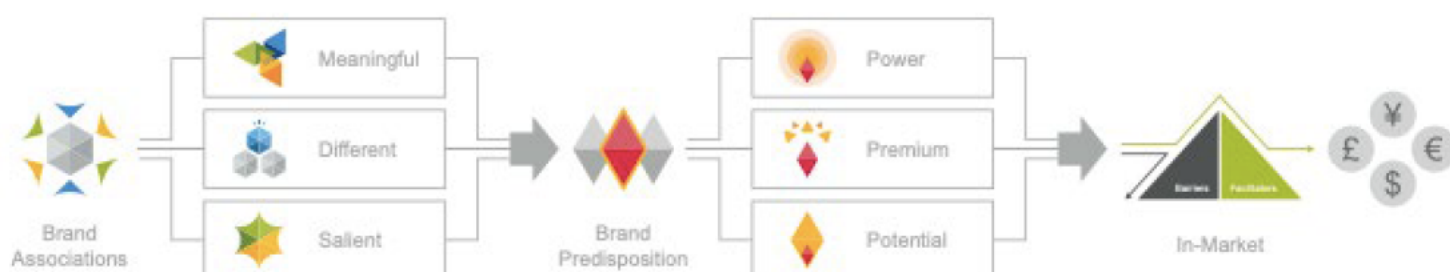


Figure 8: The Meaningfully Different Framework (Alagon & Samuel, 2013).

Alagon & Samuel (2013) have developed a conceptual model that takes into account three qualities that have been identified. Brands that sell the most products/services, command the highest price premium and come out top of mind for consumers, to develop the Meaningfully Different Framework theory. To meet the criteria set out by the theory, a brand needs to be meaningful, different, and salient (Alagon & Samuel, 2013).

A brand is considered meaningful if consumers declare an emotional affinity for it and believe that it meets their needs (Alagon & Samuel, 2013). Different relates to how a brand can differentiate itself from its competitors, by offering something others do not –intangible or tangible– and by being category leaders (Alagon & Samuel, 2013). Salient is the element dominated by top of mind awareness, showing how quickly and easily the brand comes to the consumer's mind (Alagon & Samuel, 2013).

The theory of meaningful brand, as defined by the Meaningfully Different Framework, can be applied to products and services across a spectrum of industries making it very inclusive. However, the theory does not take into consideration the socio-economic challenges that might impact the meaningfulness of a brand for its consumers. Through this study the researcher will aim to understand if brand meaningfulness matters to a low-income customer and if so how do produce selling vendors in the CBD meet the criteria of the Meaningfully Different Framework.

5. Research Methodology

"Research is a dynamic process that changes with every choice you make" (Davis, 2014:73). Researchers applying the Critical Realist lens seek to provide detailed causal explanations of occurrences or events in terms of both the participants 'reality' and the structures which interact that resulted in the outcomes in question (Wynn and Williams, 2012:788). The study is empirical in nature because it seeks to attain primary data through a directly observable pattern of behaviour which can be explained in a study setting by investigating if there is a causal relationship

between the current food waste management systems utilised by produce selling street vendors and their customer's perception of the business.

5.1. Research Design

A case study is an in-depth study of a particular research problem, that proposes practical courses of action to resolve it (Sacred Heart University, 2020). It is often used to narrow down a very broad field of research into one or a few easily researchable examples. The case study research design is also useful for testing whether a specific theory and model applies to phenomena in the real world. It is a useful design when not much is known about a phenomenon (Sacred Heart University, 2020). A case study does not require a random or representative sample. Case studies often deliberately focus on unusual, neglected, or outlying cases which may shed new light on the research problem as is the case with this research report (Sacred Heart University, 2020). Given the lack of structure around the informal sector, it is an understudied field making it conducive to a case study.

5.2. Sampling plan

Sampling is a method that allows researchers to gather information about a population based on results from a subset of the population. This carefully identified group is representative of the greater population (Lingard, Albert, and Levinson, 2008: 459). Reducing the number of individuals in a study minimises the cost and workload. It may make it easier to obtain high-quality information, but this has to be balanced against having a large enough sample size with enough power to detect a real association. A population needs to be countable, finite and well-defined (Lingard et al., 2008: 459). The chosen sampling method was non-probability sampling.

Non-probability sampling focuses on sampling techniques where the units that are investigated are based on the judgement of the researcher. Usually, the sample being examined is quite small, especially when compared with probability sampling techniques (Lingard et al., 2008: 459). The main goal of non-probability

purposive sampling is to focus on particular characteristics of a population that are of interest, which will best enable you to answer your research questions. This method of sampling was advantageous, since the sample was easy to obtain however, it was limited by having no statistical advantage.

The type of purposive sampling technique selected for this study was homogenous sampling. This purposive sampling method is useful when only limited numbers of people can serve as primary data sources due to the nature of research design and aims and objectives. This study focussed on the fresh produce selling street vendor specifically located in the Johannesburg CBD. This is a specific section of the population that requires that the researcher's judgement be used in selecting the research participants because of the limited number of primary data sources which can contribute to the study. The unit of analysis for this research was individuals who are street vendors. Though they sell in clusters each individual is responsible for their retail stall. The sample being studied was not representative of the population. Still, for researchers pursuing qualitative or mixed methods research designs, this is not considered to be a weakness; instead, it is a choice to narrow down the population and deal directly with the section of the population of whom the research is focussed. Produce selling vendors are a niche sample, and only they can speak to their day to day operations.

Purposive samples can be highly prone to researcher bias. The idea that a purposive sample has been created based on the judgement of the researcher is not a good defence when it comes to alleviating possible researcher biases, especially when compared with probability sampling techniques that are designed to reduce such biases. However, given the nature of the research, it is a necessary evil, using an alternate method would hinder the investigation rather than helping it progress. This study had a human element to it. Although the researcher's bias will influence the study, the ends of creating a healthier working environment for street vendors justified the means.

5.3. Data collection methods

Sequential mixed methods data collection strategies involve collecting data in an

reiterative process whereby the data obtained in one phase contribute to the data collected in the next (Lingard et al., 2008: 459). This study sought to collect data through interviews to examine the quality of the produce vendor's current food waste systems. The approach was, therefore, both quantitative and qualitative, the mixed methods approach (Lingard et al., 2008: 459). The sequence of methods was quantitative first in the form of a questionnaire comprised of closed-ended questions. Two surveys were developed for the street vendor and its customers. From the answers received from the questionnaires made, interviewees were selected based on the degree to which they represented the diversity of background among questionnaire participants (Lingard et al., 2008: 460).

The questionnaires mainly comprised of close-ended questions. The close-ended questions provided the study with valuable quantitative data, assisting in obtaining concrete results as they have a specific set of responses, that restricts the respondents (Kotler & Keller, 2019: 129). The open-ended questions allowed the respondents to give their opinions, providing the study with valuable qualitative data that could be analyse for key customer insights and to measure the brand's brand meaningfulness (Kotler & Keller, 2019: 129).

A cross-sectional questionnaire was put together to determine the food waste management practices of produce selling street vendors. A cross-sectional questionnaire provides the researcher with an overall picture of the vendor's food waste management approach (du Plooy-Cilliers and Cronje, 2014). The researcher presented question in the form of a questionnaire to 10 street vendors located within Noord street and the nearby Noord Street Market in the Johannesburg CBD. The questionnaire was prepared in English and Zulu. During the interview, the participants were notified of the option to select which language they would prefer; the interview was administered by bilingual individuals.

A similar approach was used for consumers. The customers were randomly selected from those purchasing goods from the street vendors. Questions were posed to them in the form of a cross-sectional questionnaire. The questionnaire was in both English and Zulu; they had the choice as to which they would prefer.

Making use of sequential mixed method data collection, the answers from the questionnaire needed to be analysed. Questions used by other researchers to determine brand meaningfulness for customers were considered when compiling the questionnaire for inclusion.

The results of the questionnaire would form the basis for the selection of the customer asked to participate in an in-depth interview. The researcher would inform the questionnaire respondents of the in-depth interview. Interested respondents would give the researcher permission to contact them if they were selected to partake in the subsequent interview. Participants would therefore be recruited from the pool of respondents who completed the questionnaire.

The two-phased approach provides the researcher with the opportunity to review and analyse the survey results and tailor the subsequent in-depth interview instrument to follow-up on significant responses and emerging themes (The Open University, [s.a.]). Qualitative research often focuses on a limited number of respondents who have been purposefully selected to participate because of their assumed in-depth knowledge of the issue being explored (The Open University, [s.a.]). This approach to the research would have resulted in the most rounded result for the findings but due to time constraints this part of the research will have to be conducted upon further study.

5.4. Data analysis methods

Data analysis is a very important part of the research process as researchers rely heavily on data in order to tell a story or resolve a problem (Question Pro, [s.a.]). The process of analysing data is split into three steps namely, data organisation, data reduction and data analysis. The 37 completed customer questionnaires were scrutinised and it was found that only 35 survey questionnaires were considered usable as the remainder were not properly completed. The 9 questionnaires completed by the street vendors were all included in the data analysis.

Data Organisation

Quantitative analysis of the two questionnaires took place through identifying ordinal variables (The Open University, [s.a.]). Categorical data, groups all units

into distinct categories which can be summarised by determining how many times a category occurs and how many participants fall into each category, the ordinal variables within each category can be ordered and significant information can be gathered from this data (The Open University, [s.a.]).

The qualitative data was organised through a more manual process (Question Pro, [s.a.]). The researcher read through the available data and found repetitive or commonly used words or phrases to identify common themes (Question Pro, [s.a.]). The compare and contrast method was used in analysing the information from the customer questionnaire to differentiate how a specific text was similar or different from each other (Question Pro, [s.a.]). The collected data was divided into people who require that the vendors brand be meaningful and different and those do not. Identifying themes in this regard helped in the exploration of the importance of brand meaningfulness in the lower-income bracket.

Data Reduction

The qualitative data reduction approach for this report is the thematic network analysis. It takes on an exploratory perspective, the researcher will consider and code all the data collected, allowing for new impressions to shape their interpretation of the research problem in different and unexpected directions (The Open University, [s.a.]). Making use of a coding framework, key code words were developed for identified variables, these codes were grouped to represent common, salient and significant themes (The Open University, [s.a.]).

Data Analysis

Once the data was reduced it can be analysed and categorised. The quantitative approach to data analysis implemented in this study was descriptive statistics (Question Pro, [s.a.]). This method is used to describe the basic features of versatile types of data in research. It presents the data in a way that the pattern identified in the data starts making sense. This assisted in answering the research questions.

Discourse analysis was used to analyse the interactions with people. This method considers the social context under which or within which the communication between the researcher and respondent takes place. In addition to that, discourse analysis also focuses on the lifestyle and day-to-day environment so that

impressions that shed light on a research question can emerge (Question Pro, [s.a.]).

5.5. The feasibility of the study

One of the most important questions in feasibility is whether or not the researcher has access to the people they want to study (DeCarlo, 2018). The Johannesburg CBD is located close enough that the researcher had easy access to it. Street vendors are located all over the CBD, the researcher identified the Noord Street Market, it is densely populated with street vendors and its proximity to the taxi rank increased the odds of high foot traffic. There was a possibility that vendors are apprehensive with speaking to a stranger with a clipboard, but the researcher communicated with them in a language they were familiar with to build rapport. It is important to explain to the participants what the research is for and how the data collected will be used (du Plooy-Cilliers and Cronje, 2014).

A researcher's identity might sometimes limit (or enhance) their ability to study a topic (DeCarlo, 2018). The researcher being from a privileged background will bias their perceptions of the street vendor and the environment they operate in. It is up to the researcher to put aside his/her preconceived ideas and open themselves to unexpected revelations and discoveries.

There were also very practical matters of time and money that can impact the feasibility of a study (DeCarlo, 2018). Conducting the study was not costly. The researcher had access to the required interviewing and analysis instruments. Time, however, was a factor. The study had to be compressed into a much shorter period than initially anticipated but was still doable. Less time will was spent with the subjects but a reasonable amount of data was gathered. The study took place over 7 days. Day 1 and 2 were spent on the field gathering data from both the street vendors and customers through the questionnaires. Days 3 and 4 were spent sifting through the data collected from the questionnaires to identify common themes, collate and filter all response through a spread sheet and create visual aids to assist in illustrating the findings. The data was analysed and reported on over Days 5, 6 and 7.

Answering the research question should be important enough to put in the effort, time, and often money required to complete a research project (DeCarlo, 2018). The researcher wants to make a difference in the lives of others. Exploring a problem that affects a sector seldom looked into is the best way this research time could be used.

5.6. Research reliability and validity

Reliability describes the consistency of the measuring instruments so that the same results would be obtained should the study be repeated (du Plooy-Cilliers and Cronje, 2014). To ensure reliability, theories upon which this study was based were identified and clearly defined. Data collection methods were adapted from similar studies to enhance reliability.

Construct validity was achieved through an extensive literature review. This information was used to design the methodology, support findings and assist with the interpretation of the findings.

Content validity is required to ensure that measuring instruments measure what they were intended to measure (du Plooy-Cilliers and Cronje, 2014). Content validity was achieved by having the questionnaire checked by the supervising lecturer to ensure that the questions were correctly formulated and met ethical guidelines. This study would have benefitted from a piloting the questionnaire to enhance its validity and user friendliness but due to time constraints and the ensuing Covid 19 pandemic this was not possible.

6. Analysis of data and findings

The main focus areas for the analysis of the questionnaire results are explored under 3 main headings, namely responses to street vendor questionnaire, responses to customer questionnaire and in-depth interview with customer. Each of these will provide key insights into the food waste management practices of produce selling street vendors and the customer's perception of the brand.

6.1. Responses to street vendor questionnaire

Below are the key findings from the questionnaire posed to street vendors located both on Noord Street and the nearby Noord Street Market. The demographic profile of the vendors was used as the point of departure to contextualise the study.

6.1.1. Vendor demographics

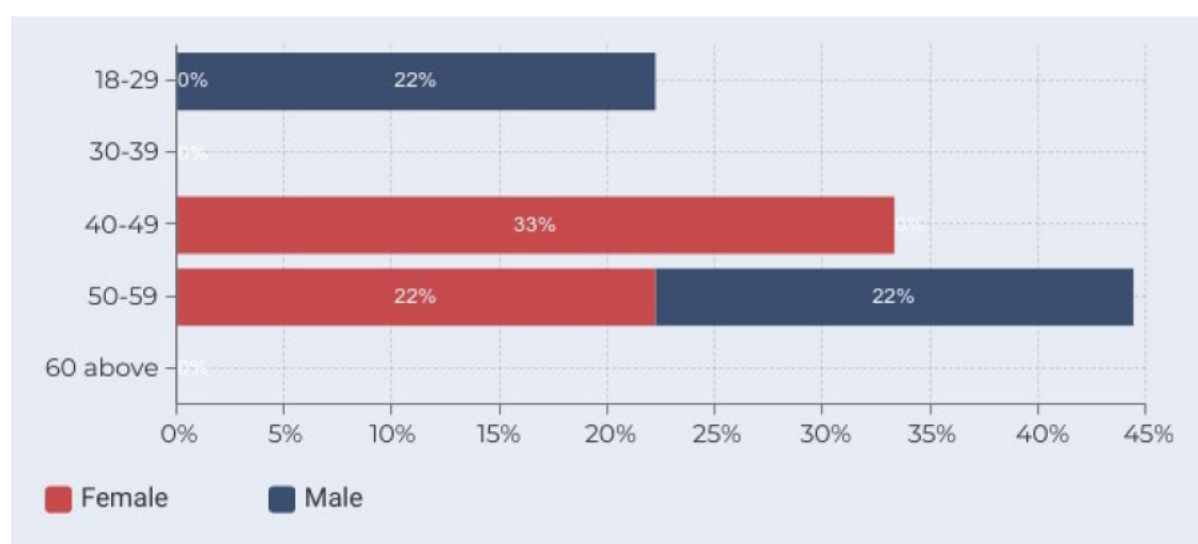


Figure 9: Vendor Age + Gender

The survey results show that most of the vendors questioned fell into the 50 - 59 age group as shown in Figure 9. This is older an older group of respondents, with an average of 23 years working as produce selling street vendors. The results of the questionnaire show that more females than males were operating produce selling stalls. This correlates with the earlier observations made WEIGO that women make up a larger percentage of the informal trade market than men. A key observation made by this study is that multi-stall, relatively permanent fruit and vegetable stands located in the Noord Street Market are generally operated

by men, while women dominated the informal stalls located on Noord Street, selling a produce on upturned boxes or non-permanent structures.

6.1.2. Vendor produce

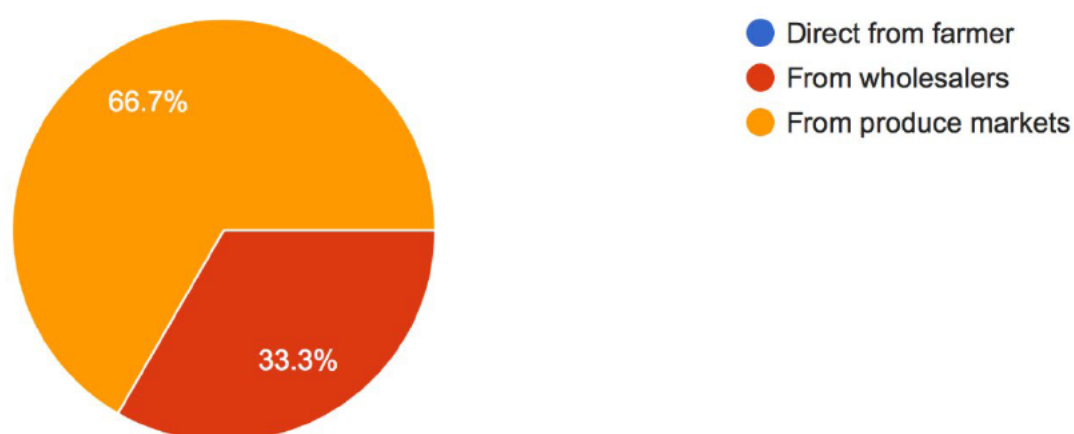


Figure 10: Where vendors purchase their produce

As seen in Figure 10, none of the vendors purchase direct from the farmer. They opt to make their purchases either from a wholesaler or a produce market. The produce market identified the City Deep Market. They have to use private transport to get their goods from the market to their stalls. The cost of these trips influences how often they go and restock.

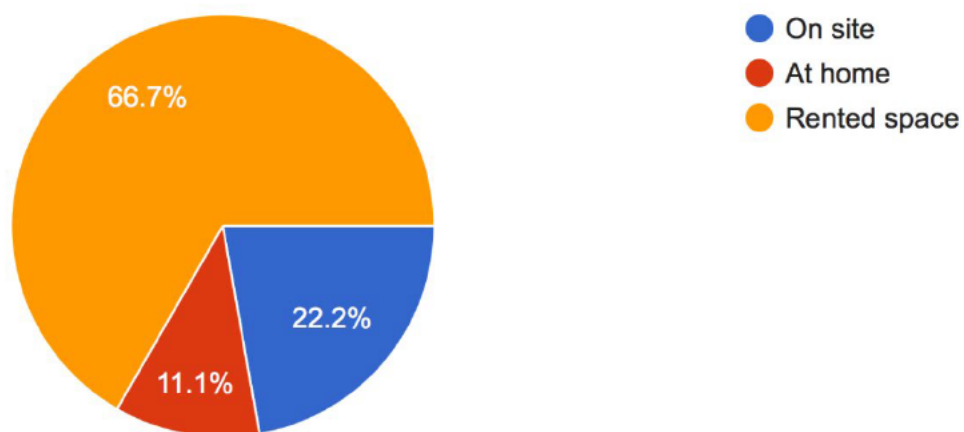


Figure 11: Where vendors store their produce

66% of the vendors surveyed store their produce in a rented space. This is in contrast to finding made in the study conducted by Battersby et al. (2016). The study was conducted in Mannenburg and Phillipi both of which are residential areas. In that study over 70% of the vendors stored their produce at home due to the proximity of their stall to their homes. In this case given that the study location is mainly a business district, many of the vendors have to store their produce at a rented location or on site.

6.1.3. Food waste management

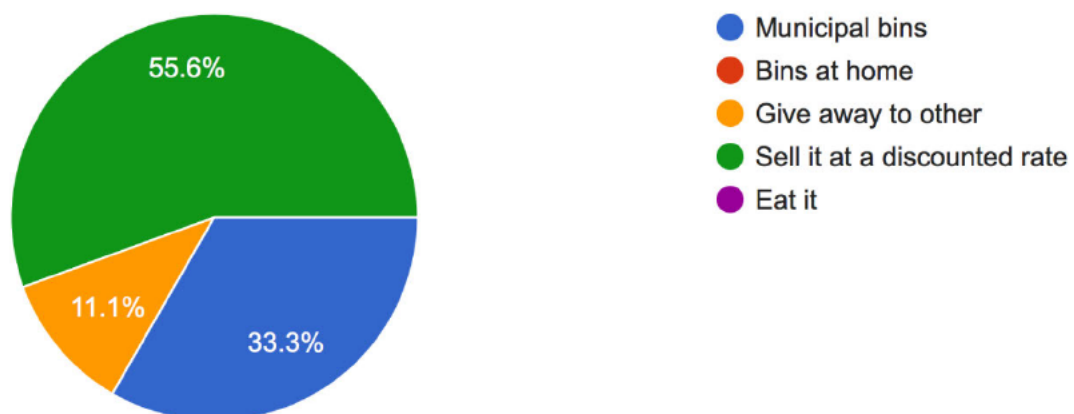


Figure 12: How vendors dispose of their food waste

As Figure 12 indicates, much of the spoiled or expired food is still consumed, being sold at a discounted rate (56%) or given away others as a charitable act (11%). The vendors that made use of municipal bins were those located in the more formal setting of the Noord Street Market.

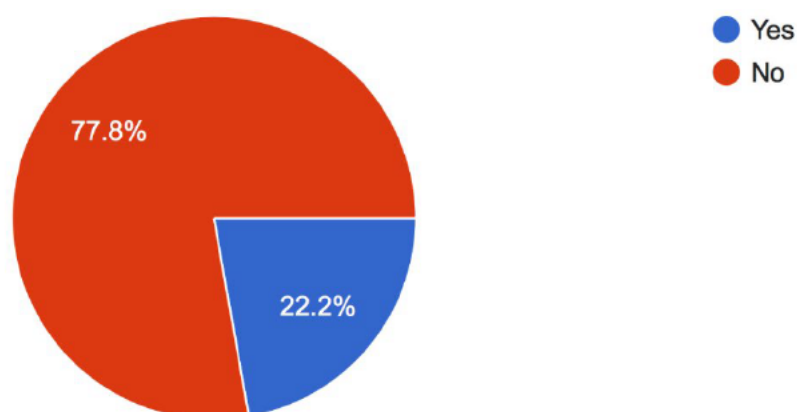


Figure 13: Vendors perception of customer's satisfaction with cleanliness of retail area

Only 2 of the 9 vendors questioned said that consumers complained about the cleanliness of the stall and its surrounds. Figures 14 through 16 illustrate that the vendors keep their immediate surroundings relatively clean. Figures 17 and 18 however reflect that there are vendors who opt to litter as a solution.

**Figure 14: Vendor
Street**



stall in Noord

Figure 15: Vendor stall in Noord Street





Figure 16: Vendor stall in Noord Street

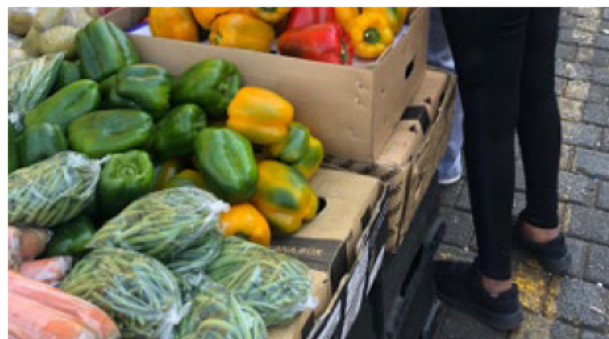
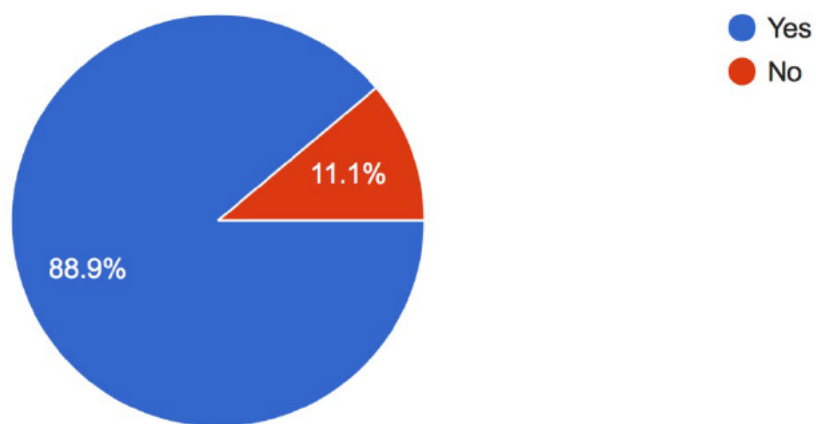


Figure 17: Discarded food waste

Figure 18: Litter and food waste

Figure 19: Vendors views on the success of their food waste management methods

When asked if vendors thought their choice of food waste management was successful the vendors replied with an overwhelming yes.

6.2. Responses to customer questionnaire

Below are the key findings from the questionnaire posed to customers who purchased goods from street vendors located both on Noord Street and the nearby Noord Street Market.

6.2.1. Customer demographics

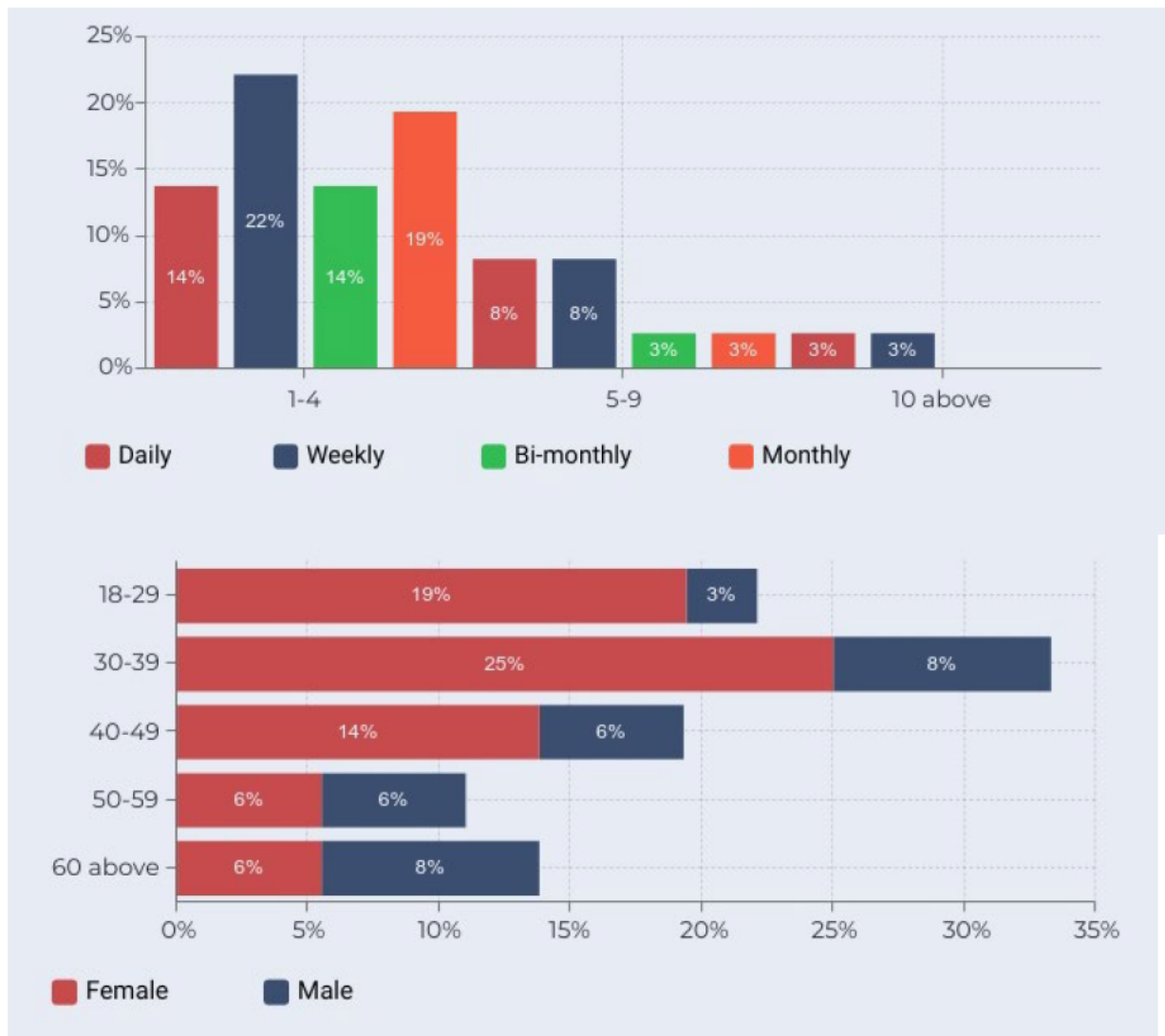


Figure 20: Respondents Age + Gender

The survey results show that majority of the customers questioned fell into the 30 - 39 age group as shown in Figure 20. This age group forms part of the millennial generation.

Figure 21: Respondents shopping frequency by house hold size

The survey results illustrate that the vast majority of the respondents frequented the street vendor stall's on a weekly basis. By far the most common reason given for choosing their location to trade was proximity to passing customers and transport hub . This correspondences with the observation made in a similar study

that a lot of the purchases are made by customers buying food on the way to or from work (Battersby, 2016). As a result, vendors cluster on roads with a lot of foot traffic to capture passing trade (Battersby, 2016).

6.2.2. Customer behaviour

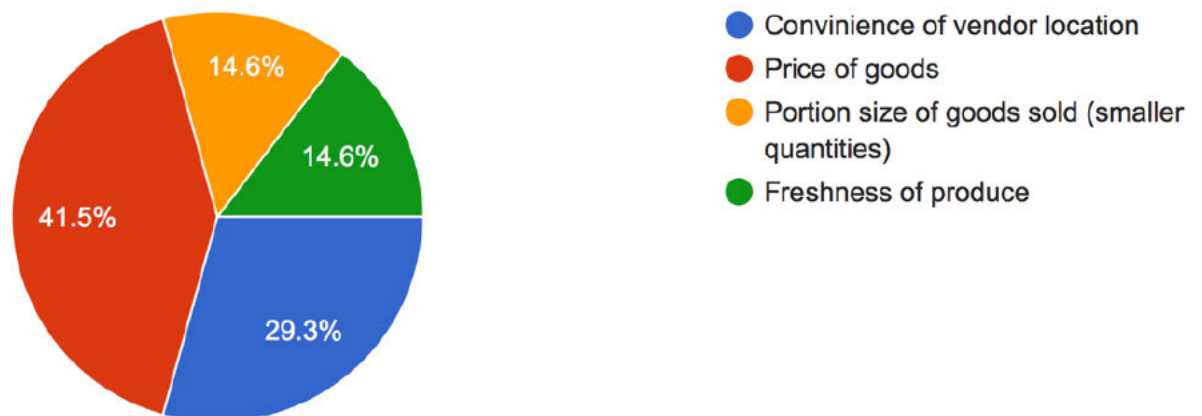


Figure 22: Customer reasons for choosing to purchase from street vendors

Millennials prize the perception of value for money, focusing on price and feature rather than the brand name. Brand legacy has little influence on their decision making (Ordun, 2015). They are conscious of their spending power and often seek competitive prices. This speaks to the finding from the survey that majority of this group put price of goods as their number one reason for buying from a street vendor.

6.2.3. Customer experiences of vendor stalls

Figure 23: Difficulties faced by customers purchasing from street vendors

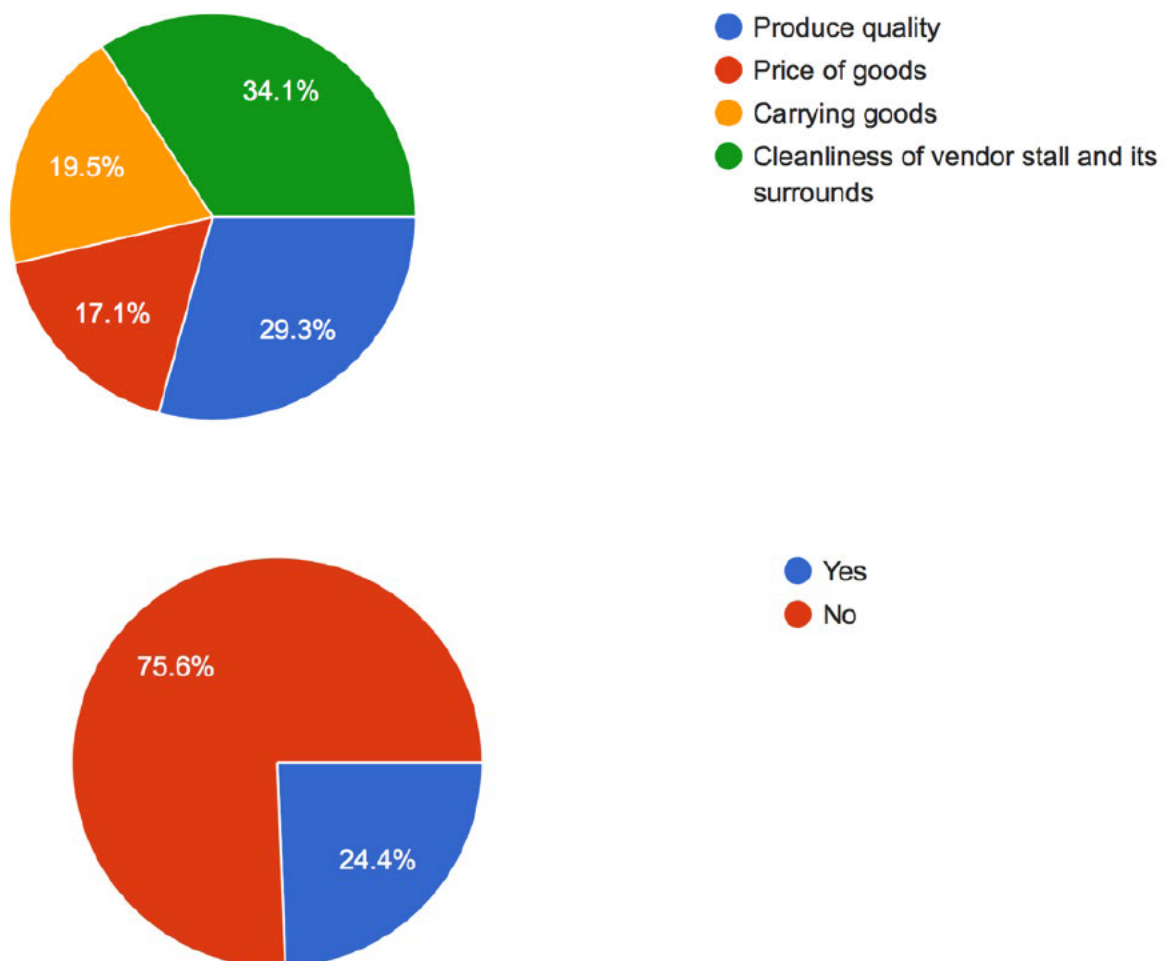


Figure 24: Customers response to cleanliness of vendor stall being a deterrent

6.2.4. Brand Meaningfulness

Construct	Frequency
Empowering unemployed	6
Neutral	5
Good	3
Nutritional value add	2
Offended	2
Nice	2
Uncomfortable	1

Table 1: Customer's feelings in relation to street vendors.

Of the 36 respondents 6 opted to skip this question. Table 1 reveals the themes picked up from question 8 of the questionnaire. The results showed that majority of the respondents felt like purchasing from the vendors was an act of good will rather than just a purchase.

"They are trying to earn an honest living. What they make goes straight into supporting their families." Participant 23.

"Every effort to try and support them, they need the money. Their produce is not bad either." Participant 17.

The next largest group were those that expressed neutral feelings towards the brand.

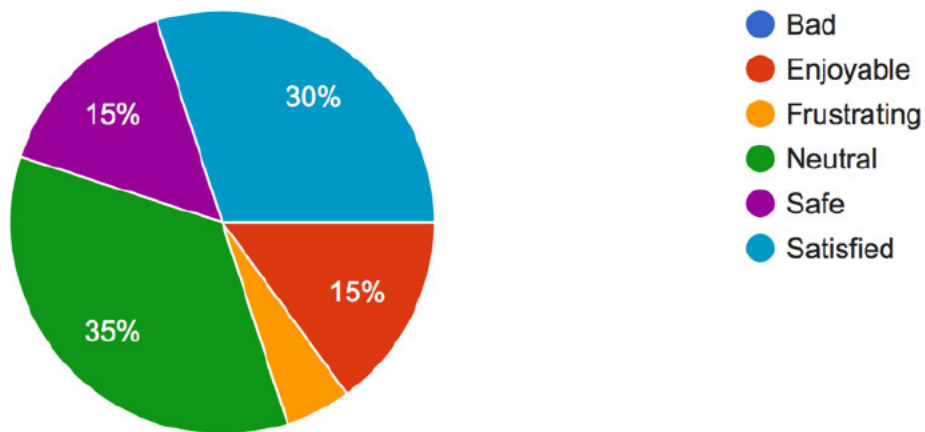


Figure 25: Customer's experience when shopping at street vendors

In order for a brand to be meaningful and sustainable it needs to meet its consumers physical, emotional, psychological and health needs, customers need brands to make a positive contribution to their quality of life (Havas Group, 2019). Figure 26 depicts the respondents perceptions on their shopping experience when purchasing from street vendors. The vast majority expressed positive feelings about their shopping experience but the largest single segment was neutral.



Figure 26: Customer likelihood to recommend street vendor shopping

Using the Net Promoter Score (NPS) technique, respondents give a rating between 0 (very unlikely) and 10 (very likely) and, depending on their response, fall into one of 3 categories (Qualatrics, [s.a.]). Promoters of the brand respond with a score of 9 or 10 and are typically loyal and enthusiastic customers. Detractors of the brand respond with a score of 0 to 6. These are unhappy customers who are unlikely to buy from you again, and may even discourage others from buying from the street vendor (Qualatrics, [s.a.]). Passives are those who responded with a score of 7 or 8. They are considered to be satisfied with the brand's service but not happy enough to be considered promoters (Qualatrics, [s.a.]). 20 out of the 36 respondents fell within the passive to promoter part of the spectrum.

7. Discussion of results

1. What food waste management practices do fresh produce selling street vendors located in the Johannesburg CBD use?

Given the environment that produce selling street vendor based in the Johannesburg CBD operate in they often do not have adequate storage or refrigeration on-site or at the rented spaces majority of them use to keep their stock. This results in their stock having a limited shelf life. The dependence of vendors on their own collection or hired delivery for their goods means that many of their products arrive at the point of sale damaged and overheated.

Given the high spoilage rates of fresh produce, it is important to understand what vendors do with spoiled or expired goods. The question of waste management is a food system and food security issue, but also a health one. This study found that the top method of food waste management among these vendors was selling their expired or soon to expire produce at a discounted rate. This is in an attempt to recoup the money spent on the produce.

Given the age of majority of the food vendors it can be said that their practice of 'want not waste not' is a generational idea. The thought of throwing away food that could be consumed goes against their thinking. In similar studies lack of education has been sighted as a factor behind poor waste management choices.

Not knowing how or why it is important to manage food waste properly means many of these vendors are operating with ignorance.

2. Are the current food waste management systems utilised by fresh produce selling street vendors located in the Johannesburg CBD effective in counteracting food waste?

The objective answer to this question would be yes, if the only factor considered is food waste management. The fact that these vendors are ensuring that food that would otherwise be discarded is consumed they are in effect effectively managing food waste. But food waste management must come with responsible behaviour. The vendors thinking economically and selling food cheaply before it expires is thrifty but selling expired or rotten goods is wrong.

This food waste management practice is hazardous. The adverse health effects that the consumption of expired food could have on the community these vendor's serve is scary. Issues such as the spread of disease and causing food poisoning are among some of the consequences. This just leads to a burdening of an already ailing health system.

3. Do the current food waste management systems used by produce selling street vendors influence the customers' perception of the brand?

The vendors response when asked if they receive complaints about the cleanliness of the stall correlates with the consumers response to if the lack of cleanliness of the store would deter them from purchasing from vendors. The data from these questions show that over 70% of consumers that purchase from street vendors are not put off from buying from them even if the areas they work in are dirty.

The informal food retail sector plays an important role in the food security of the urban poor. It is particularly well aligned to households with extremely limited incomes, who are only able to buy in small unit sizes, and often on credit. It is also well suited to the needs of households with limited refrigeration and storage capacity. Brand satisfaction for these consumers comes from practical elements rather than the metrics set out by the brand meaningfulness theory.

Brand meaningfulness for these consumer's does not emanate from how well street vendors manage food waste but rather the customer's experience with the vendor itself. Consumers that fall into this income bracket are less likely to care where a brand's moral compass lies or how sustainable their business practices are. Their main priorities are price and convenience. The element of salience would apply, but that a brand is meaningful and different is low on their priority list.

8. Conclusions and Recommendations

8.1. Ethical considerations

Realities are socially constructed entities that are under constant internal influence. Unpacking the experiences of those operating within the informal sector and the socio-economic context they operate in is a critical component of this research paper. This will, however, be prejudiced by the researcher's interpretation of the vendor's reality. The researcher must remain as impartial as possible so that the street vendors actual reality will shine through.

Every action that will be undertaken during the research will have its consequence, intended to benefit participants, the researcher, the academic community or the public at large (Scheffler, 1982). By researching the effect current food waste management systems are having on the informal sector and the CBD, this report aims to add to the body of knowledge that will help improve the lives and environments that vendors work in.

The dialogic methodology requires that participants and researchers are both contributors in the "dialectical task of unveiling reality, critically analysing it, and recreating that knowledge" (Scotland, 2012:14). Researchers are not making a difference for participants but with them. The dialogue is meant to be one of equals, but often power differentials between researchers and participants exist (Scotland, 2012:14). A way to mitigate this power play and ensure that participants will answer honestly, the researcher must explain how anonymity and confidentiality will be preserved and that the participants are volunteers who may withdraw from the study at any time and with no ramifications (Louw, 2014: 269).

8.2. Limitations and trustworthiness

The critical realism paradigm pigeonholes participants by labelling them as belonging to a particular marginalised group superimposing all the stereotypical classifications that come with that group (Scotland, 2012:14). This is a trap this report can easily fall into. The researcher must allow the narrative to play out as it should and not allow their bias to influence the research outcome. Questions posed to participants must not be leading.

By electing to make use of non-probability sampling, the results of the study cannot be generally applied to a larger population, only suggested. The results of this study could be applied to street vendors who (a) sell fresh produce in the informal market (b) in a central business district around South Africa. The study itself is limited to the Johannesburg CBD due to its cosmopolitan nature, a high population of consumers, a large number of produce selling vendors thereby increasing the likelihood of a mass of waste generated from such produce.

Another limitation of this study is time. A study conducted over a specific interval of time is a snapshot dependent on conditions occurring during that time. Given the period the world currently finds itself in, fighting a pandemic, this will influence the type of data produced from observation as the vendors might not be as busy as usual. This may also limit the number of customers the researcher can interview. This limitation can be mitigated by spending more extended periods with the vendors to ensure that a decent customer pool is interviewed.

The change that critical realism aims to make in the participants' lives may be negligible or non-existent, defeating the objective of researching the first place. Making a difference in the lives of participants in the informal sector is a significant driver behind this report. Though the shortcomings of this paradigm are evident, it is still the best approach for this topic and its intended objectives.

The Covid 19 pandemic had a significant impact on how this study was conducted. The safety precautions that need to be taken to ensure that both researcher and participant are kept safe hinders the manner in which interviews can be

conducted. For this study to reach its full potential more time needs to be spent on the field, immersed in the world of the street vendor to understand the intricacies of the sector and how they consumers relate to what the brand has to offer.

8.3. Recommendations

8.3.1.Brand meaningfulness theory

One would be amiss to say that brand meaningfulness is not a theory that can be applied to low-income consumers but the theory as it stands does not do so. A theory that can accurately measure brand meaningfulness for this sector of society needs to be explored. As seen previously combined this segment of the market has significant buying power and brands that are able to meet their needs will be the ones to capture that market.

8.3.2.Reduction of food spoilage

Many of the vendors identified food spoilage as a problem. Given the marginal status of many of these businesses, any loss due to spoilage has a significant impact on their business. Spoilage is the result both of poor storage and lack of refrigeration on site, and damage to products during transportation. It is therefore necessary to develop innovative solutions to reduce food spoilage, and to find safe ways for them to manage their food waste. Both the public and private sector need to collaborate on finding long term solutions to the storage and cold chain management issues that plague vendors if we are to try and combat the surge of food waste.

8.3.3.Business training

Business training for vendors is vital to helping their businesses grow and legitimising their trade. SMME initiatives to teach food vendors practical business skills and branding training could lead to them growing their businesses. Moving them from informal traders into entrepreneurs within the formal sector. This could lead to an increase in legitimate business that can help contribute toward elevating unemployment and increases the state coffers by paying Value Added Tax.

8.4. Conclusion

The informal sector boasts infinite potential and significantly impacts our economy. Research with the intent to improve the environment that the industry operates needs to continue as so little is known about this sector of the economy. Improving the informal sector and how it operates will hopefully impact those that need it most. This study has begun to unearth the potential of the informal sector to positively impact the fight against food waste.

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10. Figures

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Figure 9: Nkosi, M. 2020. Questionnaire for street vendors. Johannesburg: figure 9.

Figure 10: Nkosi, M. 2020. Questionnaire for street vendors. Johannesburg: figure 10.

Figure 11: Nkosi, M. 2020. Questionnaire for street vendors. Johannesburg: figure 11.

Figure 12: Nkosi, M. 2020. Questionnaire for street vendors. Johannesburg: figure 12.

Figure 13: Nkosi, M. 2020. Questionnaire for street vendors. Johannesburg: figure 13.

Figure 14: Nkosi, M. 2020. On site in Noort Street. Johannesburg: figure 14.

Figure 15: Nkosi, M. 2020. On site in Noort Street. Johannesburg: figure 15.

Figure 16: Nkosi, M. 2020. On site in Noort Street. Johannesburg: figure 16.

Figure 17: Nkosi, M. 2020. On site in Noort Street. Johannesburg: figure 17.

Figure 18: Nkosi, M. 2020. On site in Noort Street. Johannesburg: figure 18.

Figure 19: Nkosi, M. 2020. Questionnaire for street vendors. Johannesburg: figure 19.

Figure 20: Nkosi, M. 2020. Questionnaire for customers. Johannesburg: figure 20.

Figure 21: Nkosi, M. 2020. Questionnaire for customers. Johannesburg: figure 21.

Figure 22: Nkosi, M. 2020. Questionnaire for customers. Johannesburg: figure 22.

Figure 23: Nkosi, M. 2020. Questionnaire for customers. Johannesburg: figure 23.

Figure 24: Nkosi, M. 2020. Questionnaire for customers. Johannesburg: figure 24.

Figure 25: Nkosi, M. 2020. Questionnaire for customers. Johannesburg: figure 25.

Figure 26: Nkosi, M. 2020. Questionnaire for customers. Johannesburg: figure 26.

Figure 27: Nkosi, M. 2020. Questionnaire for customers. Johannesburg: figure 27.

Annexure A

Questionnaires

Questionnaire for street vendors

20/20/08/27, 16:34

Questionnaire for street vendors

Good day, the survey you are about to complete has been put together to better understand the food waste management systems that your business uses. The goal is that through this research an improvement can be made in the manner and environment that your business operates within.

1. Age

Mark only one oval.

- ☐ 18-29
- ☐ 30-39
- ☐ 40-49
- ☐ 50-59
- ☐ 60 and above

2. Sex of vendor

Mark only one oval.

- ☐ Female
- ☐ Male
- ☐ Other: _____

3. Are you registered to trade?

Mark only one oval.

- ☐ Yes
- ☐ No

4. Type of vendor stall

Mark only one oval.

- ☐ Sheltered
- ☐ Semi-sheltered
- ☐ Not sheltered

5. What are your business operating times?

Mark only one oval.

- ☐ 7am-6pm
- ☐ 8am-6pm
- ☐ 6am-6pm

6. How many years have you been a vendor?

7. From whom you purchase vegetables?

Mark only one oval.

- ☐ Direct from farmer
- ☐ From wholesalers
- ☐ From produce markets

8. How do you maintain the freshness of your goods?

9. Where do you store your goods?

Mark only one oval.

- ☐ On site
- ☐ At home
- ☐ Rented space

10. Why/How did you choose this business location?

Mark only one oval.

- ☐ Passing customers
- ☐ Safety
- ☐ Access to waste disposal
- ☐ Near to transport hub
- ☐ Other vendors
- ☐ Distance from home

11. What type of packaging do you use for your goods?

Mark only one oval.

- ☐ Plastic packaging
- ☐ Paper packaging

12. How do you dispose of food waste

Mark only one oval.

- ☐ Municipal bins
- ☐ Bins at home
- ☐ Give away to other
- ☐ Sell it at a discounted rate
- ☐ Eat it

13. Do you think how you dispose of food waste is effective?

Mark only one oval.

- ☐ Yes
- ☐ No

14. Do your customers complain about the cleanliness of the area you work in?

Mark only one oval.

- ☐ Yes
- ☐ No

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Google Forms

Questionnaire for customers

Good day, the survey you are about to complete has been put together to better understand the food waste management systems that street vendors use and how they affect their customers perception of the brand. The goal is that through this research an improvement can be made in the manner and environment that the retailer operates within.

1. Age

Mark only one oval.

- ☐ 18-29
- ☐ 30-39
- ☐ 40-49
- ☐ 50-59
- ☐ 60 and above

2. Sex of customer

Mark only one oval.

- ☐ Female
- ☐ Male
- ☐ Other: _____

3. What is your employment status

Mark only one oval.

- ☐ Employed
- ☐ Unemployed

4. How many people live in your household

Mark only one oval.

- ☐ 1-4
☐ 5-9
☐ 10 and above

5. How often do you buy from the produce selling vendors

Mark only one oval.

- ☐ Daily
☐ Weekly
☐ Every 2 weeks
☐ Monthly

6. Why do you opt to buy from produce selling street vendors? Select up to 2.

Mark only one oval.

- ☐ Convenience of vendor location
☐ Price of goods
☐ Portion size of goods sold (smaller quantities)
☐ Freshness of produce

7. What difficulties do you face while purchasing items from street vendors?

Mark only one oval.

- ☐ Produce quality
☐ Price of goods
☐ Carrying goods
☐ Cleanliness of vendor stall and its surrounds

8. How do street vendors make you feel?

9. How would you describe a street vendor to a friend? Select 3.

Mark only one oval.

- ☐ Affordable
- ☐ Clean
- ☐ Convenient
- ☐ Customer centric
- ☐ Dishonest
- ☐ Fresh
- ☐ Low quality
- ☐ Reliable
- ☐ Unhygienic
- ☐ Unpleasant

10. Do vendors food waste management systems deter you from purchasing from them?

Mark only one oval.

- ☐ Yes
- ☐ No

11. Which best describe your last experience with a street vendor?

Mark only one oval.

- ☐ Bad
- ☐ Enjoyable
- ☐ Frustrating
- ☐ Neutral
- ☐ Safe
- ☐ Satisfied

12. On a scale of 1-10 how likely are you to recommend the brand?

Mark only one oval.

	0	1	2	3	4	5	6	7	8	9	10	
Very Unlikely	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Very Likely

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Google Forms

Annexure B

Questionnaires answers

Timestamp	Age	Sex of vendor	Are you registered to trade?	Type of vendor stall	What are your business operating times?	How many years have you been a vendor?	From whom you purchase vegetables?	How do you maintain the freshness of your goods?
2020/08/21 3:35:19 PM GMT+2	18-29	Male	No	Not sheltered	6am-6pm		10 From produce markets	night
2020/08/21 3:42:45 PM GMT+2	50-59	Male	No	Not sheltered	7am-6pm		25 From produce markets	Make sure I buy the freshest at the market
2020/08/21 3:54:50 PM GMT+2	18-29	Male	No	Semi-sheltered	7am-6pm		5 From produce markets	Keep out of the sun
2020/08/21 4:08:16 PM GMT+2	50-59	Female	Yes	Semi-sheltered	6am-6pm		12 From wholesalers	It is difficult because I do not have a fridge but I use crates so the stock does not get damaged
2020/08/21 4:18:42 PM GMT+2	40-49	Female	No	Not sheltered	6am-6pm		20 From wholesalers	I keep them in the fridge
2020/08/21 4:27:55 PM GMT+2	50-59	Female	No	Not sheltered	6am-6pm		16 From produce markets	I place in boxes. Do not buy too much stock.
2020/08/21 4:36:51 PM GMT+2	40-49	Female	Yes	Semi-sheltered	7am-6pm		20 From produce markets	Pack it in boxes
2020/08/21 4:46:32 PM GMT+2	50-59	Male	Yes	Not sheltered	6am-6pm		40 From produce markets	Keep in trailers
2020/08/21 4:59:56 PM GMT+2	40-49	Female	Yes	Not sheltered	6am-6pm		10 From wholesalers	Keep in boxex

Where do you store your goods?	Why/How did you choose this business location?	What type of packaging do you use for your goods?	How do you dispose of food waste	Do you think how you dispose of food waste is effective?	Do your customers complain about the cleanliness of the area you work in?
Rented space	Near to transport hub	Plastic packaging	Give away to other	Yes	Yes
Rented space	Passing customers	Plastic packaging	Sell it at a discounted rate	Yes	No
Rented space	Near to transport hub	Plastic packaging	Sell it at a discounted rate	Yes	No
Rented space	Near to transport hub	Plastic packaging	Sell it at a discounted rate	No	No
At home	Passing customers	Plastic packaging	Municipal bins	Yes	No
Rented space	Near to transport hub	Plastic packaging	Sell it at a discounted rate	Yes	Yes
Rented space	Near to transport hub	Plastic packaging	Sell it at a discounted rate	Yes	No
On site	Passing customers	Plastic packaging	Municipal bins	Yes	No
On site	Access to waste disposal	Plastic packaging	Municipal bins	Yes	No

Timestamp	Age	Sex of customer	What is your employment status	How many people live in your household	How often do you buy from the produce selling vendors	Why do you opt to buy from produce selling street vendors? Select up to 2.	What difficulties do you face while purchasing items from street vendors?
2020/08/22 1:22:26 PM GMT+2	30-39	Female	Employed	1-4	Weekly	Price of goods	Cleanliness of vendor stall and its surrounds
2020/08/22 1:29:43 PM GMT+2	40-49	Male	Employed	1-4	Weekly	Convenience of vendor location	Price of goods
2020/08/22 1:38:46 PM GMT+2	18-29	Female	Unemployed	1-4	Daily	Convenience of vendor location	Price of goods
2020/08/22 1:44:00 PM GMT+2	30-39	Female	Employed	1-4	Monthly	Price of goods	Produce quality
2020/08/22 1:56:04 PM GMT+2	30-39	Female	Employed	1-4	Every 2 weeks	Convenience of vendor location	Cleanliness of vendor stall and its surrounds
2020/08/22 2:07:03 PM GMT+2	40-49	Male	Employed	1-4	Every 2 weeks	Freshness of produce	Produce quality
2020/08/22 2:13:59 PM GMT+2	30-39	Male	Unemployed	1-4	Monthly	Price of goods	Price of goods
2020/08/22 2:22:22 PM GMT+2	40-49	Female	Employed	1-4	Monthly	Portion size of goods sold (smaller quantities)	Cleanliness of vendor stall and its surrounds
2020/08/22 2:27:42 PM GMT+2	18-29	Female	Employed	1-4	Daily	Portion size of goods sold (smaller quantities)	Produce quality
2020/08/22 2:35:45 PM GMT+2	18-29	Female	Unemployed	1-4	Weekly	Convenience of vendor location	Carrying goods
2020/08/22 2:38:20 PM GMT+2	18-29	Female	Employed	1-4	Every 2 weeks	Convenience of vendor location	Cleanliness of vendor stall and its surrounds
2020/08/22 2:39:31 PM GMT+2	30-39	Female	Unemployed	1-4	Weekly	Price of goods	Cleanliness of vendor stall and its surrounds
2020/08/22 2:45:01 PM GMT+2	18-29	Male	Employed	5-9	Every 2 weeks	Convenience of vendor location	Produce quality
2020/08/22 2:47:32 PM GMT+2	40-49	Female	Unemployed	1-4	Daily	Price of goods	Cleanliness of vendor stall and its surrounds
2020/08/22 2:53:47 PM GMT+2	18-29	Female	Unemployed	1-4	Monthly	Portion size of goods sold (smaller quantities)	Cleanliness of vendor stall and its surrounds
2020/08/22 2:56:01 PM GMT+2	50-59	Female	Employed	5-9	Weekly	Freshness of produce	Carrying goods
2020/08/22 3:04:07 PM GMT+2	60 and above	Female	Employed	1-4	Weekly	Price of goods	Cleanliness of vendor stall and its surrounds
2020/08/22 3:07:09 PM GMT+2	30-39	Female	Unemployed	1-4	Every 2 weeks	Portion size of goods sold (smaller quantities)	Produce quality
2020/08/22 3:18:24 PM GMT+2	40-49	Female	Employed	10 and above	Daily	Price of goods	Produce quality
2020/08/22 3:18:53 PM GMT+2	50-59	Male	Employed	5-9	Daily	Price of goods	Carrying goods
2020/08/22 3:27:21 PM GMT+2	60 and above	Male	Unemployed	1-4	Weekly	Portion size of goods sold (smaller quantities)	Cleanliness of vendor stall and its surrounds
2020/08/22 3:29:29 PM GMT+2	40-49	Female	Employed	1-4	Monthly	Freshness of produce	Cleanliness of vendor stall and its surrounds
2020/08/22 3:50:06 PM GMT+2	50-59	Male	Unemployed	10 and above	Weekly	Price of goods	Produce quality
2020/08/22 3:50:20 PM GMT+2	60 and above	Male	Employed	5-9	Daily	Price of goods	Carrying goods
2020/08/22 3:55:48 PM GMT+2	30-39	Female	Unemployed	1-4	Weekly	Convenience of vendor location	Price of goods
2020/08/22 3:58:56 PM GMT+2	30-39	Female	Employed	5-9	Monthly	Price of goods	Produce quality
2020/08/22 4:03:18 PM GMT+2	40-49	Female	Employed	5-9	Weekly	Price of goods	Carrying goods
2020/08/22 4:07:58 PM GMT+2	60 and above	Male	Unemployed	1-4	Monthly	Convenience of vendor location	Produce quality
2020/08/22 4:12:48 PM GMT+2	50-59	Female	Employed	1-4	Monthly	Portion size of goods sold (smaller quantities)	Produce quality
2020/08/22 4:16:16 PM GMT+2	18-29	Female	Unemployed	1-4	Daily	Convenience of vendor location	Price of goods
2020/08/22 4:17:51 PM GMT+2	30-39	Female	Employed	5-9	Weekly	Freshness of produce	Carrying goods
2020/08/22 4:25:57 PM GMT+2	60 and above	Female	Unemployed	1-4	Monthly	Price of goods	Cleanliness of vendor stall and its surrounds
2020/08/22 4:28:44 PM GMT+2	30-39	Female	Employed	1-4	Monthly	Freshness of produce	Produce quality
2020/08/22 4:34:32 PM GMT+2	30-39	Male	Unemployed	5-9	Every 2 weeks	Convenience of vendor location	Carrying goods
2020/08/22 4:39:44 PM GMT+2	18-29	Female	Employed	1-4	Daily	Price of goods	Price of goods
2020/08/22 4:47:04 PM GMT+2	30-39	Male	Unemployed	43960	Weekly	Price of goods	Price of goods

How do street vendors make you feel? : Admire their hustle and ability to get up each day Don, Aot mind them	How would you describe a street vendor to a friend? Select 3.	Do vendors food waste management systems deter you from purchasing from them?	Which best describe your last experience with a street vendor?	On a scale of 1 -10 how likely are you to recommend the brand?
They are trying to earn an honest living. What they make goes straight into supporting their families	Convenient	No	Neutral	7
: No problem with them	Convenient	No	Satisfied	6
	Affordable	No	Enjoyable	9
	Affordable	No	Satisfied	7
	Convenient	Yes	Neutral	0
	Clean	No	Neutral	5
	Affordable	No	Satisfied	8
	Unhygienic	Yes		4
: Every effort to try and support them, they need the money. Their produce is not bad either.	Customer centric	No	Safe	8
They are friendly and willing to help. This feels good	Affordable	No	Neutral	5
: I have no emotions towards them. I, Above probably never thought about how they make me feel	Affordable	No	Neutral	5
: Happy	Affordable	No	Neutral	4
: Neutral	Affordable	No	Satisfied	7
: Comfortable	Affordable	Yes	Satisfied	6
: They kinda untidy	Affordable	Yes	Frustrating	2
Happy	Customer centric	No	Enjoyable	8
: Good and that i am contributing to upliftment b9f tge ynmemployed	Customer centric	No	Satisfied	9
I'm good with them	Convenient	Yes	Frustrating	2
They are alright	Dishonest	Yes	Neutral	5
Good	Affordable	No	Neutral	5
: Sometimes they are rude	Affordable	No	Satisfied	7
	Customer centric	Yes	Neutral	6
: Sharp sharp	Affordable	No	Enjoyable	8
	Convenient	No	Safe	6
	Convenient	No	Enjoyable	9
Like i am part of poverty problem solving	Fresh	No	Safe	6
They are friendly but they cheat sometimes with hiding rotten veggies in the bag	Affordable	No	Safe	10
Nice	Low quality	Yes	Satisfied	3
No feelings	Customer centric	No	Satisfied	10
Like good to support the unemployed	Affordable	No	Satisfied	8
That i can afford eating veggies everyday	Convenient	No	Enjoyable	9
That i eat fresh veggies	Unhygienic	No	Neutral	2
: Welcome	Affordable	No	Safe	9
Good	Affordable	No	Neutral	1
Uncomfortable				
N8ce	Affordable	No	Enjoyable	9
Good	Affordable	No	Neutral	10