

Vega School

Research Methodology

**Towards Decreased Plate Waste: Measuring Consumers' Behaviours at Hotel
Restaurants to Build Persuasive Communication**

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Abstract

The purpose of this research was to explore, through research on consumers' behaviours and attitudes, if it can be postulated whether communication around certain topics could potentially persuade respondents to change their behaviours to minimise food waste. This was done by gathering data to understand consumers' pre-existing attitudes when choosing foods at restaurants and buffets, and to conclude whether there exist latitudes of noncommitment, therefore indicating that there is a possibility of true persuasion to occur, according to social judgement theory. In order to reach these objectives, the research questions that were proposed were as follows: (1) What are some of the pre-existing attitudes of consumers at hotel buffets? (2) Do consumers' consumption behaviours change when they are away from home? And (3) What messages would possibly persuade consumers to make more reasonable choices at a buffet to subsequently lead to decreased plate waste?

This descriptive research was done through a quantitative approach, using the positivist paradigm, by means of a survey by using the method of random sampling. The population consisted of people living in the Gauteng area, reached through social media area groups. It was also posed to each respondent whether they had been to a Protea Hotel in the past five to eight years. The raw data that was collected from the study was statistically analysed using various qualitative analysis methods in order to display and illustrate any significant correlations and findings. Through hypothesis testing, it was also found that there exists a significant correlation between people that are aware of the impact of food waste on the environment and people who feel guilty when wasting food.

From the data analysis and findings, a list of recommendations and possible further research gaps were discussed, mostly on how it is believed that communication that may persuade consumers to make more informed choices at buffets is possible. It is concluded that these findings on the usefulness of data collected from the consumers themselves could inform effective communication that should then be used to experiment whether there is a significant decrease in plate waste. This research could potentially inspire innovative communication strategies by hospitality brands to persuade customers to think twice before wasting; for the benefit of the environment; one small step towards positive out-of-home food waste behaviour.

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Introduction

In this study, consumers' behaviours and expectations at hotel buffets will be measured in order to explore out-of-home food waste behaviour. Based on the findings from this study, it will be further postulated as to whether improved communications around food waste by hotels will minimise plate waste at hotel buffets and whether such communication can attempt to persuade consumers to change their behaviour.

The brand that will be studied in this research report is Protea Hotels, a mid-up market hotel brand with an extensive footprint across nine countries in Africa; however, in the context of this study, the Protea Hotels brand in South Africa will form the focus of this research. The communications of this brand around environmental awareness, particularly food waste, will be explored to understand the brand's meaningfulness in the context of food waste in South Africa and to support any findings from the study.

About Protea Hotels in South Africa

Protea Hotels is a brand by Marriot International and is stated as "one of the most widely recognised hospitality brands in Africa" (Protea Hotels, [n.d.]). With a footprint of nearly one hundred hotels across Africa, over nine countries, this brand has the largest presence across the continent of a single hotel brand (Protea Hotels, [n.d.]). This brand not only presents a wide coverage of hotels, but it also has a diverse design, with each hotel having a unique look and personality, while also providing guests with an opportunity to taste local flavour in an authentic way (Protea Hotels, [n.d.]).

Protea Hotels as a Meaningful Brand

Protea Hotels was chosen as a brand due to its presence in South Africa, the country wherein this study will take place. It is also a widely-recognised brand with the target customer being a mid-up market consumer who will form part of the sample of this study. This brand was also chosen due to its commitment to reducing food waste with its goal "to cut food waste by 50% at its properties by 2025" (Gaddy, 2019). This, and other green sustainability goals of the brand, has proven its meaningfulness to the environment and its consumers.

According to Cook et al. (2010), there are seven characteristics that can be used to determine the health and meaningfulness of a brand. This criteria includes the brand's purpose, actions,

identity, engagement and communication, authenticity, value to consumers, and sustainability, amongst others (Cook et al., 2010). These indicators can therefore be used to determine the meaningfulness and health of a brand in terms of specific objectives, such as food waste or environmental sustainability (Cook et al., 2010). By measuring Protea Hotels using these indicators in the context of food waste and environmental sustainability, it can be concluded whether this brand is meaningful in the context of food waste management.

For the first indicator, Cook et al. (2010) seeks to determine whether the brand has a particular meaning or purpose, which is described as the brand's "reason to exist" (Cook et al., 2010). Protea Hotels has a clear purpose which is to deliver every guest with a personalised experience whilst also allowing guests to truly experience the local flavour and culture that each hotel has to offer (Protea Hotels, [n.d.]). This is a unique purpose as the brand does not limit itself to its form; to simply be a hotel for guests to stay at, but to further this by adding the value of personalised service and authentic experience of the respective surroundings. This first indicator of purpose is further explored in the second criteria whereby a meaningful brand needs to serve its purpose in everything it actions or does (Cook et al., 2010). In other words, does the brand live through its purpose as opposed to its form? Protea Hotels' commitment to creating an authentic experience is evident through each hotel's unique aesthetic, whereby each Protea Hotel is different from one another. The diverse designs of the hotels boast various styles and art that are unique to local artists and culture, as well as varying dishes and flavours (Protea Hotels, 2010). This therefore empowers and promotes local artists and culture, shining much needed light on the local heritage of each space that every hotel occupies.

The first two indicators further establish the brand's unique identity, which is to be proudly and vividly local, uplifting the culture and community around the hotels as to offer the guests a unique experience, whilst also empowering local artists and culture. The brand therefore does have a distinctive identity, which is the third indicator. On communication, engagement, and authenticity, Protea Hotels adopts a transparent and concise personality within their communications whereby they share meaning with all stakeholders at every point of communication. Protea Hotels constantly make mention of the unique and diverse nature of every destination, highlighting the purpose and meaning behind every city. Furthermore, Protea Hotels adds value to its guests and the community in which it operates by uplifting the appeal of each town in which it is situated. The brand appeals to guests to enjoy what each place has to

offer, giving them a personal, unique experience, whilst simultaneously stimulating the local economy and supporting locals.

On the final two criteria, as previously mentioned, Protea Hotels forms part of the brand Marriot, which is committed to reducing food waste by 50% at its properties on an international scale by 2025 (Gaddy, 2019). The brand has also adopted a green policy whereby they aim to responsibly manage their impact on the environment, their employees and the communities in which they operate (Protea Hotels, [n.d.]). This shows an attempt at building sustainability amongst all stakeholders, including the environment, while also having goals above profit to drive their business.

Protea Hotels therefore does meet the meaningful brands criteria as set by Cook et al. (2010). To this end, this study will attempt to further the brand's sustainability goals by providing a basis as to how this goal can be achieved at a local level in the brand's Protea Hotels in South Africa.

Problem Statement

Due to the growing environmental concerns around food waste, it is crucial to address food waste at both the production and consumption levels (Volgger et al., 2021). Currently, hospitality brands, such as Protea Hotels, have pledged to become more environmentally sustainable (Protea Hotels, [n.d.]), however, there is a growing necessity to address consumers' out-of-home food waste behaviour in order to reduce plate waste that is prevalent at hotel buffets (Dolnicar, 2019). In order to decrease plate waste, a probe into understanding consumers' stance on food waste needs to be conducted; through understanding this phenomena, appropriate communication can be recommended that may be used to guide future experimental studies that measure the impact these messages have on reducing food waste at hotel buffets. The gap between suitability for the hospitality industry and understanding what messages will persuade consumers to change their behaviour needs to be addressed in order to attempt to reduce plate waste at hotel buffets; waste that is completely avoidable and unnecessary (Miroso et al., 2016).

An understanding of the way in which a population experiences an activity or social setting using quantitative methods is therefore appropriately required to bridge the gap between measuring consumers' latitudes of acceptance (Kothari, 2004). In this study, which seeks to explore whether consumers' expectations of hotel buffets can guide more effective

communication and planning to minimise plate waste, the focus is on the populations' experience of prior hotel dining ordeals and their subsequent behaviour, it does not aim to establish the reasons behind the behaviour; this problem therefore requires a positivist, quantitative approach for an appropriate output of data.

Research Rationale

In the literature review, which will follow in Chapter 3, it will be discussed how numerous experimental studies have been conducted in real-life scenarios in order to assess possible methods of reducing plate waste in buffet settings (Jagau & Vyrastekova, 2017, Cozzio et al., 2021, Ang et al., 2021). However, these studies failed to collect data before they attempted to experiment in the field, thereby using communication prompts that may not have appealed to the audience. According to persuasion theory (Dainton, 2005), in order for true persuasion to occur, messages need to be crafted in such a way that the audience's latitude of acceptance is adequately understood as to appropriately inform what the intended audience will accept or reject. This research therefore attempts to use data collected from consumers of mid-up market hotel buffets in order to appropriately inform messages that may persuade them to change their behaviours at hotel buffets, leading to decreased plate waste.

Through the collection of data that will answer the proposed research questions, this study will be able to postulate as to whether data collected from consumers may be able to outline certain attitudes around food waste that could inform communication campaigns for minimised plate waste. This would then supplement future research as to whether a new model whereby consumers' pre-existing attitudes are taken into account before formulating experimental messages and prompts.

Conclusion

In order to adequately craft messages that may persuade consumers to make more mindful decisions at hotel buffets to change their out-of-home consumption behaviours, and subsequently reduce plate waste, research that seeks to understand consumers behaviour and expectations at hotel buffets is needed. This research will then be used to recommend communication content and messages that will make an impact on minimising plate waste at hotel buffets. By understanding consumers' pre-existing attitudes and anchors to fall in line with persuasion theory and what leads to a change in behaviour (Dainton, 2005), content that may change consumers' behaviours can then be used to supplement further research that could go

on to experiment with these messages in order to assess whether it makes an impact on minimising plate waste.

Research Goals and Questions

Due to this need to address consumers' consumption behaviours at hotel buffets, further research is needed to understand the reasons behind these behaviours and high levels of food waste at hotel buffets. By understanding the reasons and the level to which consumers feel about the topics and behaviours around food waste, appropriate messages can be formulated in order to persuade consumers to change their behaviours (Dainton, 2005) at hotel buffets which may lead to decreased plate waste. This study therefore aims to collect appropriate and adequate data in an attempt to understand consumers' pre-existing attitudes around food waste behaviour at hotel buffets. This data will then be used to recommend informed messages that may be able to prompt consumers to change their consumption behaviours at hotel buffets which will lead to decreased plate waste.

By recommending communication content that is created around the theoretical framework of persuasion theory, which proposes a model whereby communication can be crafted in such a way that it can persuade audiences to change their behaviour (Dainton, 2005); this study will attempt to supplement the sustainability initiatives of meaningful hotel brands with information that could be used to guide communication campaigns that will lead to a decrease in plate waste. By balancing the thin line between appropriateness for the hospitality industry with messages that consumers would feel strongly about (Dolnicar, 2021), a feasible and effective communication plan whereby plate waste may be decreased at hotel buffets can be proposed. These findings could also be used to further research into this area by informing future experimental studies with appropriate content that will lead to a significant decrease in real-life hotel buffet settings.

Research Questions

As outlined above, this research needs to collect data in order to propose content of communication that will persuade consumers to change their behaviours at hotel buffets in an attempt to minimise plate waste. To do this, this study needs to 1) understand how consumers' consumption behaviour changes when they are away from home, 2) establish which messages and/or topics around making consumption decisions appeal to consumers, and 3) determine to what extent consumers are aware of the problem of food waste and the impact that their decisions have on the environment. By understanding these factors, this study may be able to

recommend content that could influence behaviour that will lead to decreased plate waste at hotel buffets.

In order to achieve the purpose of this study, the following questions should be answered using data gathered from consumers of mid-up market hotel buffets:

- (1) What are some of the pre-existing attitudes of consumers at hotel buffets?
- (2) Do consumers' consumption behaviours change when they are away from home?
- (3) What messages would possibly persuade consumers to make more reasonable choices at a buffet to subsequently lead to decreased waste?

These questions can be condensed into a single research question which can be summarised as: **Using information gathered on consumers' attitudes at hotel buffets, can the content of messages be designed and informed in such a way that consumers may be persuaded to change their behaviours in these settings in order to minimise plate waste?**

Objectives of the Study

The three research objectives of this research study are concluded as the following:

- To determine whether there exist neutrality around certain attitudes on the environment and food waste as to postulate the possibility of persuasive communication gaps
- To determine what behaviours consumers have at restaurants for possible content direction that would improve their experiences and minimise plate waste
- To explore any correlations between phenomena that may assist with further recommendations to prompt consumers to consider food waste as a concern using informed communication messages

Conclusion

This study will therefore attempt to fill the identified research gap, to be discussed in the literature review, as a means to explore whether more research should be done to understand consumers' latitudes of acceptance, rejection and non-commitment, as to propose effective communication. The purpose of this communication would be to assist consumers in making their decisions regarding food choices more informed in such a way as to minimise plate waste.

Literature Review

Introduction

The literature that was reviewed for the purpose of finding a gap in research that pertains to food waste, more specifically plate waste in the hospitality industry, included topics such as food waste, consumer behaviour and environmental impact. This analysis leads to various gaps of which one will be chosen to further study in order to create a basis of which further research can evolve.

Food waste as an environmental concern

A review of the literature suggests that food waste is gaining traction as a great environmental concern (Ang et al., 2021, Chawla et al., 2021, Dolnicar, 2019, Luu, 2019, Miroso et al., 2016), with an estimated 1.3 billion tonnes of food being wasted per annum globally (Food and Agriculture Organisation, [n.d.], cited in Chawla et al., 2021). It is further argued that, because food production is highly resource intensive, uneaten food squanders these resources, which consists of production, transport and storage, therefore driving climate change (Foley et al., 2011, cited in Dolnicar, 2019).

While most literature reviewed agree that food waste overall is a global environmental concern (Ang et al., 2021, Chawla et al., 2021, Dolnicar, 2019, Luu, 2019, Miroso et al., 2016), some argue that the primary focus on reducing food waste should be on farmers and food companies (van Bormann, 2018), whilst others agree that plate waste should be the focus as it is “absolutely unnecessary and almost entirely preventable” (Dolnicar, 2019). Plate waste is defined as uneaten food that is left behind on a plate after a meal (Dolnicar, 2019), this definition is further expanded as “avoidable food waste” which refers to food that has been thrown away that was “at some point prior to disposal, edible” (Chawla et al., 2021). There is therefore general consensus to the fact that plate waste refers to the amount of edible, served food that is subsequently discarded (Miroso et al. 2016).

Plate waste, which drives the single largest source of food loss in terms of overall food delivered to food service institutions (Miroso et al. 2016), has been the focus of various studies in different institutions, such as plate waste in private kitchens and residential areas (Miroso et al. 2016), plate waste in educational institutions and hospitals (Jagau & Vyrastekova, 2017), and plate waste that arises from the hospitality industry (Chawla et al., 2021, Molina et al., 2021, Volgger

et al., 2022, Cozzio et al., 2021, Dolnicar, 2019). With “out-of-home” plate waste as the general terminology for plate waste that refers to food that is wasted outside of the home; at restaurants or hospitality settings (Dolnicar, 2019). It is therefore disagreed as to which sector drives the most plate waste at a global or local level, with all forms of plate waste contributing to the larger problem of food waste at hand (Dolnicar, 2019).

Consumer behaviour as the problem

Emerging literature suggests that consumer behaviour, as opposed to sustainable food management at institution level (Molina et al., 2021), is the problem that should be solved when attempting to minimise plate waste (Jagau & Vyrastekova, 2017, Cozzio et al., 2021, Ang et al., 2021). In different terms, it is suggested that consumer behaviour is the driver of plate waste as opposed to the management of sustainability practices by the restaurant or hotel entity itself. The findings of these studies are however limited due to the emerging nature of food waste being studied at a consumption level, as opposed to the production level, which is prevalent amongst most studies (Jagau & Vyrastekova, 2017). It is therefore suggested that most studies focus on the multiple stages of food waste that may take place at production, distributing or receiving, as opposed to during the actual consumption stage (Jagau & Vyrastekova, 2017).

Studies that have focussed on plate waste as a consumer behavioural problem are limited in the scope and scale of their research, with most studies experimenting at a single entity and location (Jagau & Vyrastekova, 2017, Cozzio et al., 2021, Ang et al., 2021). These studies have attempted to experiment, at real institutions, such as university food halls or hotel breakfast buffets, to see how consumer behaviour can be influenced in order to minimise plate waste. Jagau et al. (2016) headed a study at a university restaurant which attempted to implement an information campaign to “nudge” consumers to ask for smaller portions at the same price to reduce food waste. This information campaign doubled the demand for smaller portions at the same price, resulting in decreased food waste over the course of the study (Jagau et al., 2016). This small-scale study therefore opens a gap to research whether such information or communication campaigns could be implemented in a different industry or sector within the food service environment. It also opens a gap for studies to be conducted to collect data directly from the consumers themselves, as opposed to the experimental studies from the reviewed literature (Jagau & Vyrastekova, 2017, Cozzio et al., 2021, Ang et al., 2021).

These studies have thus far been experimental; located at the kitchens and/or buffets themselves to see how consumers react to certain nudges in order to observe whether their behaviours change. It should therefore be speculated as to whether data collected directly from consumers themselves could direct these communication gaps going forward; i.e. quantitative data that is collected directly from consumers of mid-up market hotels to influence communications at hotel breakfast buffets or during the planning stages of a stay.

Food waste prevention communication in the hospitality industry

As previously mentioned, studies conducted to experiment in real time at kitchens and/or buffet areas have been conducted, with some studies attempting to appeal to consumers to ask for smaller portions should they not be feeling too hungry (Jagau et al., 2016). Whilst other studies have attempted to notify consumers of the calorie content of each food at a buffet and recommending a certain amount of each food based on nutritional requirements (Cozzio et al., 2021). This nutritional appeal was then set against an experiential appeal whereby a different type of message was experimented with which appealed to consumers' desire to positively contribute to the environment by avoiding leaving uneaten food behind (Cozzio et al., 2021). In this specific study, the experiential appeal led to statistically less wasted croissants, whilst the nutritional appeal led to less significant results; however, overall it did result in the findings that having a message as opposed to no message seems to lead to decreased waste (Cozzio et al., 2021).

The limitations of this study are apparent with the COVID-19 restrictions that were in place, whereby the food is served by waiting staff to minimise contamination by consumers serving themselves (Cozzio et al., 2021). It is therefore not yet apparent whether buffets will return to the normal procedure of self-service once all restrictions are removed, the study's data may be irrelevant once procedures return to normal. Lastly, a consumer survey before determining the content of the communications that were used may point to a different type of content that could influence consumers more. It can therefore be speculated as to whether more research before experimenting at a real buffet could perhaps lead to a better informed communication that will minimise waste by making consumers aware of their serving decisions at a buffet.

Sustainable food management in hotels

Another common problem that is prevalent in studies that attempt to minimise plate waste in the hospitality sector is suitability for the hospitality sector and competitive advantage (Dolnicar,

2019). In order for hotel brands to introduce sustainable food management practices, it cannot have a negative impact on customer satisfaction and should preferably increase competitiveness (Molina et al., 2021). However, due to increasing awareness of environmental issues, pressure from customers and other stakeholders on hotels to introduce sustainability practices has been on the rise in recent years (Koch et al., 2020, cited in Molina et al., 2021).

In regards to food waste specifically, daily plate waste per hotel guest amounts to an average of 233g from all meals throughout the day (Papargyropoulou et al., 2016, cited in Dolnicar, 2019). Statistics like these may further the pressure on hotels to increase sustainability practices and may even encourage consumers to change their behaviours if made aware of the problem. It should therefore be noted that any recommendations on approaches to reducing plate waste should be a balance between suitability for the hospitality sector in terms of customer satisfaction and increasing competitive advantage, while also being effective for the environment (Dolnicar, 2019).

Persuasion Theory

The theory that was identified as applicable to this study which will be used to support the findings is that of persuasion theory; defined as “human communication that is designed to influence others by modifying their beliefs, values, or attitudes” (Simons, 1976: 21, cited in Dainton, 2005). This theory will frame the purpose of this study which is to support the findings on what persuasion message, informed by measuring consumers’ behaviours and expectations, could be used to guide communication in order to minimise plate waste at hotel buffets.

Social Judgement Theory

Social Judgement Theory, which will form the theoretical framework of this study, proposes that people judge the content of communication messages in relation to their stance, or anchors, on a certain topic (Sherif et al., 1965, cited in Dainton, 2005). In addition to their anchor or stance, each individual’s attitude can also be categorised as follows:

Latitude of acceptance - this includes ideas that a particular person finds acceptable

Latitude of rejection - this includes ideas that a particular person finds unacceptable

Latitude of noncommitment - this includes ideas that a particular person will neither accept nor reject (Dainton, 2005)

An individual's reaction to a message therefore depends on their stance on the particular topic at hand (Dainton, 2005). To this end, the first step when following the social judgement process is to "map" the receiver of the message's attitude towards a topic in order to correctly inform the content of the message (Dainton, 2005). This task is ordinarily achieved through an ordered alternatives survey or questionnaire whereby a set of statements that represent different points of view on a single topic is presented (O'Keefe, 2008, cited in Dainton, 2005). In this questionnaire, the statements are usually listed to create a continuum whereby the first statement reflects an extreme view of a particular issue, with the last statement reflecting the opposite extreme of the issue; respondents would then mark the statement with which they most agree to, this then represents their "anchor" (Dainton, 2005). In order to represent their latitudes of rejection and/or acceptance, statements to which they generally agree or disagree to are included, and finally, to represent their latitude of noncommitment, statements that are neither acceptable or unacceptable can be left blank (Dainton, 2005). By using this method, one can therefore formulate common anchors, latitude of acceptance and rejection and latitudes of noncommitment in order to correctly inform the content of messages that persuade.

In essence, social judgement theory argues that persuaders need to consider and understand any pre-existing attitudes or anchors that an audience has about a topic before formulating the content of a message (Dainton, 2005). Should the content of a message fall within the audience's latitude of rejection, the persuasion would not be successful, and, on the other hand, should you send a message that falls within their latitude of acceptance, one would only be reinforcing what they already believe (Dainton, 2005). To this end, true persuasion is only achieved if the content falls in line with an individual's latitude of noncommitment or at the edges of their latitude of acceptance (Dainton, 2005).

Conclusion

Social judgement theory therefore falls in line with what is needed to be achieved with this study: to appropriately inform the content of a message in order to attempt to persuade an audience to change their behaviours and/or actions. Previous studies have already attempted to experiment with messages at buffets in order to change behaviours that lead to plate waste, however, this study will attempt to instead collect data that may inform messages that can be used to persuade an audience at a hotel buffet. To this regard, in order to support this study, the social judgement theory will be used to inform the layout and content of the survey; it will further

be used to analyse the findings of the study and assist with the hypothesis development and the conclusion thereof.

This study will then test the relevance of collecting data from consumers in order to build appropriate communications that may persuade a behavioural change, the findings may then be used to supplement future experimental studies with information that may lead to significantly decreased plate waste. Lastly, it can also attempt to explore consumers' awareness of their behaviours and understand what their expectations are when it comes to eating at a mid-up market hotel in South Africa in order to appropriately come up with solutions that are suitable for the hospitality industry and sustainable for the environment, while also being satisfactory for consumers.

Research Paradigm

In the continuum of research approaches, there are generally known to be two opposing sides which consist of the qualitative approach and the quantitative approach; with the quantitative approach as the preferred method of the methodological position of positivism, and the qualitative approach as the preferred method of interpretivism (Du Plooy-Cilliers et al., 2014). The types of data gathered during a study allows for simple differentiation between quantitative and qualitative approaches, with numerical data found in quantitative research and non-numerical data in qualitative research (Saunders et al., 2021: 161).

The common collection techniques for quantitative research include questionnaires and surveys, whereas the common collection techniques for qualitative data are interviews and focus groups (Saunders et al., 2021: 161). Both of these approaches are associated with their research philosophies which all agree that research is “a systematic approach whereby data are collected and analysed through applying appropriate data collection and analysis methods” (Du Plooy-Cilliers et al., 2014: 34). They do, however, differ in terms of the aims of research, what qualifies as knowledge and which methods of data collection are employed to produce knowledge that is seen as valuable (Du Plooy-Cilliers et al., 2014).

Positivism, normally associated with quantitative research, is an objective philosophical theory that is broadly defined as the approach of natural sciences (Du Plooy-Cilliers et al., 2014). In contrast to the positivist paradigm, interpretivism, associated with qualitative research, was developed as a reaction to the limitations of positivism whereby it is believed that human beings cannot be studied in the same way that objects are studied (Du Plooy-Cilliers et al., 2014). This belief comes from the view that human beings are under a constant state of change and they are constantly influenced by the environment around them, they can therefore not be studied in the same way as objects and they cannot be studied in laboratory settings (Du Plooy-Cilliers et al., 2014). The primary purposes of quantitative data include the ability to measure phenomena, to make forecasts, to compare variables, to test hypotheses, and to construct concepts and theories (Walliman, 2011: 113). On the other hand, qualitative data is used when a deeper meaning of phenomena is desired which therefore involves feelings, emotions and perceptions (Walliman, 2011: 113).

The subcategories of quantitative research are inferential, experimental and simulation approaches whereby an inferential approach describes research that gathers numerical data in

order to describe relationships and characteristics of the population (Kothari, 2004: 5). The experimental approach is characterised by control over the test environment whereby some variables have been manipulated in order to record results, and a simulation approach refers to an artificial environment which has been created for the purpose of a study (Kothari, 2004: 5).

Quantitative research is therefore preferred by researchers who wish to gain answers as to the way in which a population experiences an activity or social setting as opposed to the reasons why, or the reasons behind their experiences (Kothari, 2004). Qualitative research is the preferred method of exploring the “why”; with some researchers employing mixed methodology that combine qualitative and quantitative approaches as a dual-method study (Kothari, 2004). In this study, which seeks to explore whether consumers’ expectations of hotel breakfast buffets can guide more effective communication and planning to minimise plate waste, the focus is on the populations’ experience of prior hotel dining ordeals and their subsequent behaviour, it does not aim to establish the reasons behind the behaviour.

This research will therefore be conducted within the positivist paradigm by means of a deductive quantitative approach. The reasons for this choice of approach was due to the size of the sample population, as well as the financial and time limitations and constraints of this study; whilst being able to extract a general outcome that will pertain to a larger population. In addition to this, a quantitative approach that is inferential will allow for objective correlation and tests for significance from the numerical data, this is what is required in order to answer the research questions. It is, however, important to note the limitations of this method, which is the inability to answer the “why” of the study at hand, therefore excluding an understanding of the full complexity of the phenomenon. To this end, in order to attempt a better understanding of this data, two to three open-ended questions will be added to the survey in an attempt to support the numerical data and findings.

Conclusion

A quantitative approach will not only attempt to achieve an objective stance for the findings of this study, it will also compliment the direction of this study, which is to measure consumers’ behaviours and attitudes on a hotel buffet and food waste. Lastly, and most importantly, it also goes hand in hand with the theoretical framework of this study, whereby the preferred method to formulating a persuasive message is to first gather data about consumer’s attitudes on the topic through the use of a survey or questionnaire in order to understand what would persuade them

to change their behaviour in an attempt to minimise plate waste using well-informed communication.

Research Methodology

To deliver on the objectives of the research, and to subsequently answer the research questions, primary data is required. Primary data can be conducted through either quantitative or qualitative data collection methods, or even a mixed-methods approach (Du Plooy-Cilliers et al., 2014). The choice of the data collection method will determine both the collection and analysis methods that will be used; this is dependent on how the information is collected and interpreted throughout this study (Du Plooy-Cilliers et al., 2014).

The common collection techniques for quantitative research include questionnaires and surveys, whereas the common collection techniques for qualitative data are interviews and focus groups (Saunders et al., 2021: 161). Both of these approaches are associated with their research philosophies which all agree that research is “a systematic approach whereby data are collected and analysed through applying appropriate data collection and analysis methods” (Du Plooy-Cilliers et al., 2014: 34). They do, however, differ in terms of the aims of research, what qualifies as knowledge and which methods of data collection are employed to produce knowledge that is seen as valuable (Du Plooy-Cilliers et al., 2014).

Survey Research

A survey refers to a data collection tool which consists of carefully formulated questions that are designed to support the research objectives to gather information from a large group of people (Du Plooy-Cilliers et al., 2014). This method is applicable to this particular research study as it is commonly used to provide a “quantitative or numeric description of the trends, attitudes or opinions of a population” (Du Plooy-Cilliers et al., 2014:149). This therefore compliments the objectives of the study, which seeks to assess whether individuals feel strongly about the topic of food waste and whether their pre-existing attitudes can be measured in order to adequately inform messages of persuasion.

For this particular study, a cross-sectional survey design will be used as the data will only be collected from the respondents once, unlike other types of surveys which may need to measure changing attitudes at different times (Du Plooy-Cilliers et al., 2014). This survey design is well suited to the research objective which seeks to ascertain as to whether consumers of hotel buffets feel strongly on the topic of food waste; it does not seek to discover whether their

attitudes change over a certain period of time. The type of survey that will be used is a self-completed electronic questionnaire which was used based on the following reasons:

- Questionnaires are known to be effective for research on consumers' attitudes or opinions (Du Plooy-Cilliers et al., 2014).
- The sample group for this study needs to be large in order to reach an accurate conclusion on whether individuals feel strongly about food waste; this particular type of survey allows the researcher to reach all respondents without the high investment of time or money.
- Questionnaires are both cost effective, whilst also giving respondents enough time to give well-conceived answers (Kothari, 2004).
- The research follows a positivist approach which requires objectivity and quantitative data.

The questionnaire, referred to in Appendix A, to be completed by the sample population, will comprise of 16 close-ended questions and two open-ended questions spread over six sections:

- Section 1 will explain the research and why it requires participants.
- Section 2 will collect the recipients' personal details in order to add context to the subsequent data and to supplement insights.
- Section 3 will attempt to understand consumers' attitudes and awareness around the environment.
- Section 4 seeks to understand consumers' consumption habits, particularly when they are away from home.
- Section 5 attempts to understand consumers' attitudes around food waste.
- Section 6 is to confirm participant consent.

The method that will be used to administer the questionnaire for this research study is via the internet, using e-mail and social media posts as the invitation platform for suitable respondents. The digital questionnaire will be created using Google Forms.

Population Selection and Sampling Method

As with any study, it would be ideal to include the entire population when attempting to conduct research and formulate subsequent insights, however, due to the excessive time and financial restraints, this would not be realistic. It is to this end that a feasible sampling strategy was decided to capture the best possible representation of the larger population group.

Respectively, the two different sampling techniques, namely probability sampling and non-probability sampling, describe how each member of the population may have an equal chance to be selected for the study, whereas the latter refers to the lack of a known probability of being selected (Du Plooy-Cilliers et al., 2014). Probability sampling consists of the following sampling techniques: simple random, systematic, stratified, and multi-stage cluster sampling (Du Plooy-Cilliers et al., 2014). On the other hand, non-probability sampling methods include accidental, convenience, and purposive sampling (Du Plooy-Cilliers et al., 2014). With probability sampling used primarily for quantitative studies to remove human bias from the process, whilst non-probability sampling is generally used for qualitative studies (Du Plooy-Cilliers et al., 2014).

For this study, probability sampling, using the simple random sampling technique, will be used. Due to the large size of the population, as well as the cost- and time-effectiveness of this method, the technique of simple random sampling would be most appropriate. It is further postulated that this technique will also deliver a suitable level of accuracy that this study requires.

Du Plooy-Cilliers et al. (2014:138) describes simple random sampling as “the most basic type of sampling method” (Du Plooy-Cilliers et al., 2014:138). This method can be used when the population has an equal chance of being selected to form part of the sample (Du Plooy-Cilliers et al., 2014). A precise procedure is used when the sample is drawn in order to reduce the influence of bias (Du Plooy-Cilliers et al., 2014). The example used by Du Plooy-Cilliers et al. (2014) is that of placing the names of each person who forms part of the population in a hat, the researcher then draws out 50 names at random out of the hat, this then forms the sample of the study. This method therefore ensures that each member of the population had a fair chance of being part of the study (Du Plooy-Cilliers et al., 2014).

For this study, other probability sample methods were excluded due to time constraints, complexity, and lack of knowledge of sub-groups within the population. The non-probability techniques were not considered due to the study’s dependence on numerical data accuracy, as well as the desire to involve the greater population into this study.

The research population will comprise people living in the Gauteng region who have been consumers of a buffet-style hotel or restaurant in the past five to six years. From the selected population, the link to the questionnaire will be shared to at least 150 participants, where it is predicted that over 50 responses will be collected. The survey link will be shared to Gauteng community groups on social media, inviting members of the population to take part in the survey voluntarily. The questions in section 2 of the survey, referred to in Appendix A, will gather the necessary information as to whether the participant has eaten at a buffet-style restaurant or hotel in the past five to six years, and further to this, whether they have stayed at a Protea Hotel.

Validity

To ensure that the results of the study will offer quality results that can be used, and that the questionnaire will measure what it sets out to measure, the reliability and validity of the study must be stressed.

The validity refers to the determination that the study measures what it is supposed to measure; in other words, whether the selected research instrument accurately reflects the reality of the topics that are being measured (Du Plooy-Cilliers et al., 2014). To ensure internal validity, the questions in the survey were organised in themed groups with the questions relating to each subsection theme; making up six sections in total, as seen in Appendix A. This ensured that the questions were relevant to the study and ensured that all bases were covered and that there were no errors in the design of the research. Each subsection, as well as the subsequent questions, were therefore tested individually in order to ensure that the research questions would be able to be answered. External validity was considered due to the fact that the study will involve respondents who had previously been involved in the buffet-style environment and who therefore drew from their real-life experiences to answer the questions, it can therefore be safely assumed that the findings can be generalised from the sample to a larger population.

Ethical Considerations

In order for research to steer clear of poor practice, harm, and malpractice, amongst other unethical factors, a code of ethics is required for most studies (Saunders et al., 2012). Ethics can be defined as what is legally right to do when conducting research, as well as what is morally correct (Dantzker & Hunter, 2012). Further to this, it should be noted that the researcher should be aware of what is happening during the research process, and must use reasoning to

support decision making (Dantzker & Hunter, 2012). Dantzker and Hunter (2012) argue that the researcher should not only be intellectual when conducting research, but should also be truthful and consider any negative or positive consequences that may arise from the research.

According to Saunders et al. (2012) the codes of ethics include the following factors, which will subsequently be addressed in accordance to this particular study:

Researcher neutrality and morality

As this study encompassed a positivist approach which is known for its objectivity, the researcher took all relevant steps to avoid subjective views and bias, with no leading questions on the research instrument.

Trustworthiness and respect for society

The information on the use of the participant's details will be made transparent prior to the survey's conclusion, with a pre-questionnaire section that will explain the exact reason for the study and the subsequent handling of the information. This will be easy to understand and designed carefully to ensure comprehension.

Refrain from causing any harm to participants

Included in the above-mentioned section, it will be made clear where the information gathered from this survey will be applied. It will also be clarified as to the purpose of this survey, and it will be stressed that participation is voluntary with an opt-in check required to show willingness to participate.

Protecting the privacy of participants

The privacy of participants will be protected by ensuring that contact details of respondents are not shared or stored in any manner that is unknown to the relevant party. Any private data will be strictly used for the study's purpose only, or will be deleted.

Optional nature of participation and right to retract

The optional nature of the questionnaire, as well as the respondent's right to retract, will be made clear in the first section of the survey.

Knowledgeable consent of participants

As previously mentioned, participants will be required to opt-in before commencing the survey, this will be done through the use of a button that respondents will have to check in order to show willingness to participate.

Safeguarding the confidentiality of data

The confidentiality of the research will be communicated and a secure online platform will be used in order to ensure safeguarding of the data.

Data management compliance

None of the information collected throughout this research study will be shared with third parties or made available on any public platform. Irrelevant data will also be deleted once the study has been concluded.

Limitations of the Study

As with most academic research, there exist limitations and delimitations to this study. The first delimitation to note is that the study is limited to respondents from the Gauteng region in South Africa; this allowed for the research to be completed within the six-month time period that was allocated to the study. The extrapolation of the results should be able to be applied to other urban areas in developing countries, however, this may not necessarily be able to be applied to urban areas within first-world countries.

The financial resources at disposal throughout this study are limited; this will therefore result in a sample size that could have been larger in order to allow for a more accurate and generalised outcome. The sample population will consist of a majority of middle to upper class respondents which can be seen as another limitation of the study as it does not include a wider selection of demographics.

Due to the low response rate associated with a majority of internet-based questionnaires, the researcher will attempt to reach a number of 50-80 respondents. This will be lower than the desired amount of 100, however, this number can still deliver necessary insights and trends that can be used to answer the research questions, and subsequently, will be able to conclude this study.

This study aims to find correlations between variables; however, the exact explanation and the reasons behind these relationships fall outside of the scope of this study. Therefore, follow-up qualitative studies may add more information and context to the research which may enrich the communications that could drive decreased plate waste. This could expand the current body of knowledge in food waste, specifically in the hospitality industry, and should therefore be noted as a limitation in order to encourage future studies that may add this required dimension.

Testing the Reliability of the Instrument

Using Cronbach's Alpha

Reliability involves the credibility and consistency of the data (Du Plooy-Cilliers et al., 2014). Saunders et al. (2012) mentions internal consistency as a method for assessing reliability; this speaks to the degree to which the respondents answer similar questions in the same or similar way. In order to measure this, the same questions can be repeated across the survey, but in a different manner; the outcome is then analysed to deduce whether the questions posed deliver similar results (Saunders et al., 2012).

The formula to measure and compare the results is termed Cronbach's alpha which is a coefficient with a minimum value of 0 and a maximum value of 1. The higher the value, the more it proves that the questions posed do measure the same phenomena (Saunders et al., 2012). Below details how this method was used to test the reliability of the data that was collected in this research study.

Please select the most applicable given how you feel about the following statement: "The well being of the environment is important to me."

53 responses

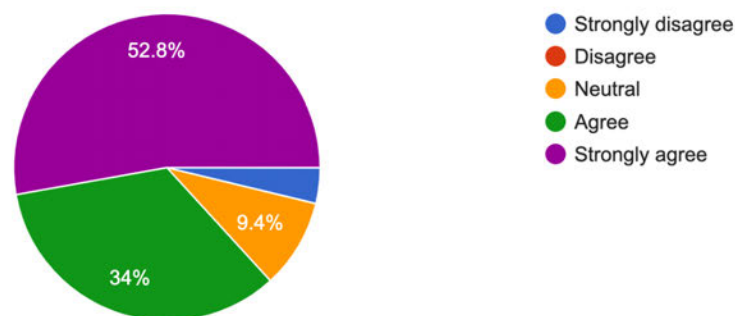


Figure 1.1: Q1 - First Validity Test Question

On a scale from one to five, one being extremely unlikely and five being extremely likely, please select the most applicable given how you feel about the wellbeing of the ecological environment."

53 responses

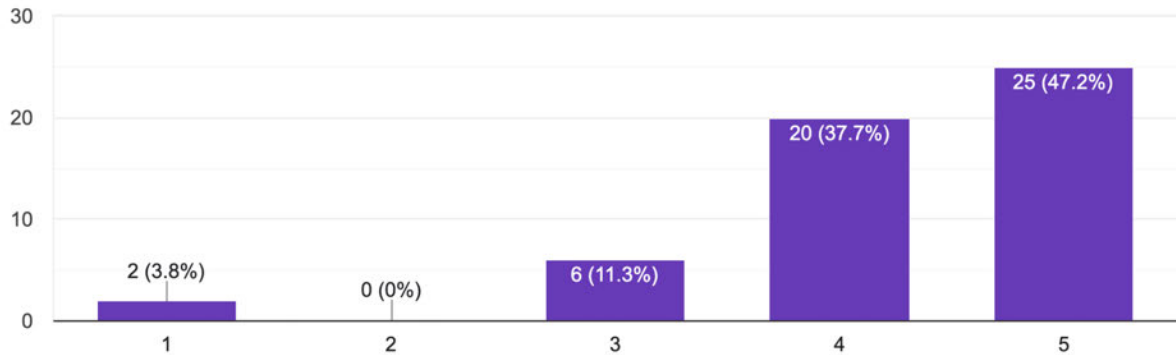


Figure 1.2: Q2 - Second Validity Test Question

To test the reliability of the data, two similar questions were posed to respondents to observe whether the answers would be the same or similar. The two questions that were asked can be observed in Figure 1.2 and Figure 1.2; with the former posing whether respondents agreed with the statement, "the wellbeing of the environment is important to me". The latter asked respondents on a linear scale how much they agreed with the statement, "I care about the wellbeing of the ecological environment".

Therefore, if the results for both questions were the same or similar, one could conclude that the reliability of the data is high as both questions posed the same question with different wording and question structures, on separate parts of the survey. In other words, to measure the reliability of the data, it would be observed that most respondents therefore would have chosen a similar indication of how they feel about the statement as both questions dealt with the same topic.

ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Rows	66.50943	52	1.279028	2.676538	0.000265	1.584705
Columns	0.150943	1	0.150943	0.315869	0.576515	4.026631
Error	24.84906	52	0.477866			
Total	91.50943	105				
Cronbach's Alpha		0.626383				

Table 1.3: Cronbach's Alpha Table

Questions used for reliability test:

Q1: Please select the most applicable given how you feel about the following statement: "The well being of the environment is important to me."

Q2: On a scale from one to five, one being extremely unlikely and five being extremely likely, please select the most applicable given how you feel about the statement: "I care about the wellbeing of the ecological environment."

Using the data analysis tool on Microsoft Excel, Cronbach's Alpha was used to measure the same phenomena to indicate the level of reliability of the data, as illustrated in Table 1.3. The figure that was reached was $\alpha = 0.626383$, which indicates a sufficient level of reliability for the purpose of this study. Although it is generally preferred for the coefficient value to be over 0.7 when measuring reliability, a figure higher than 0.5, although questionable, is acceptable for smaller studies (Saunders et al., 2012).

Analysis of Data and Findings

Demographics of Respondents

The demographic data that was collected will allow for insights into which type of consumer is most likely to care enough about food waste to the extent in which they may be persuaded to change their consumption behaviour to minimise plate waste.

Please indicate your age group:

53 responses

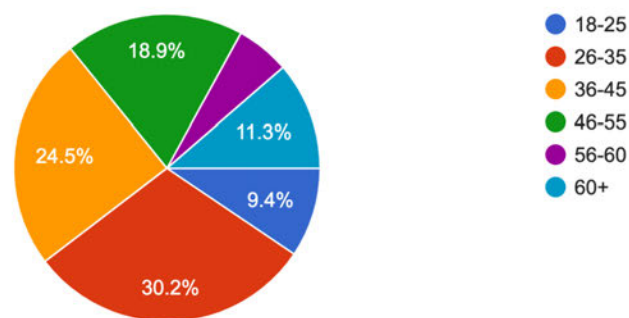


Figure 2.1: Age of Respondents

Figure 2.1 illustrates the age groups of the respondents, with the age group of 26-35 year olds being the highest.

Age Group	Percentage	Responses
18-25	9.4%	5
26-35	30.2%	16
36-45	24.5%	13
46-55	18.9%	10
56-60	5.7%	3
60+	11.3%	6
Total Responses		53
Total Respondents		53

Table 2.1: Respondents by Age Group

Depicted in Table 2.1, the majority of respondents are between the ages of 26-35, making up 30.2% of the sample; and the age group of 36-45 makes up 24.5%. Therefore, grouped together, respondents of the aged between 26-45 collectively make up over 50% of the sample.

Please select the most appropriate description of yourself:

53 responses

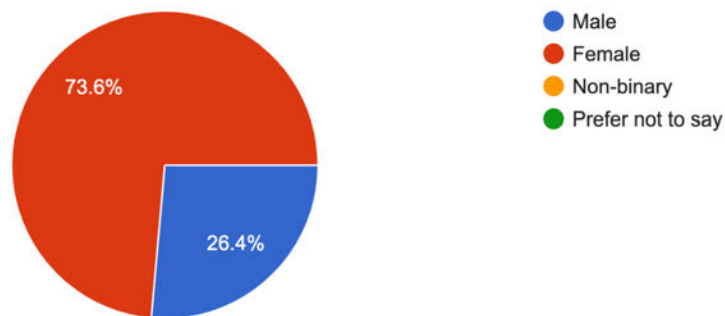


Figure 2.2: Description of Respondents

Figure 2.2 illustrates the description of respondents based on their gender, with those who prefer to describe themselves as “Female” making up the majority of respondents at 73.6%.

Please indicate your income bracket based on your individual annual gross earnings:

53 responses

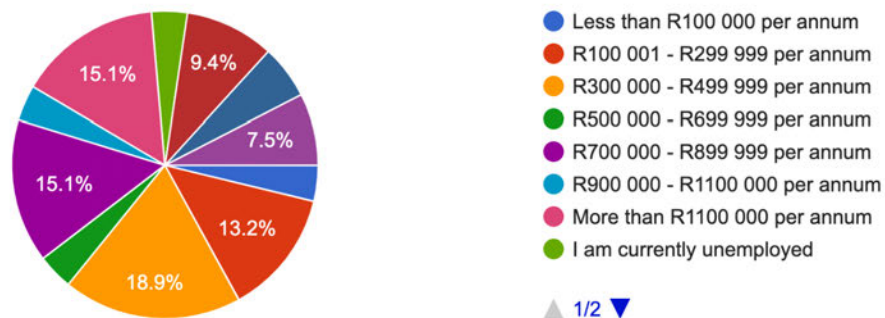


Figure 2.3: Respondents' Annual Gross Earnings Income Bracket

The annual gross earnings income bracket of respondents was also collected, as illustrated in Figure 2.3, in order to develop further insights which will be detailed further into the findings report.

In which province do you live in?

52 responses

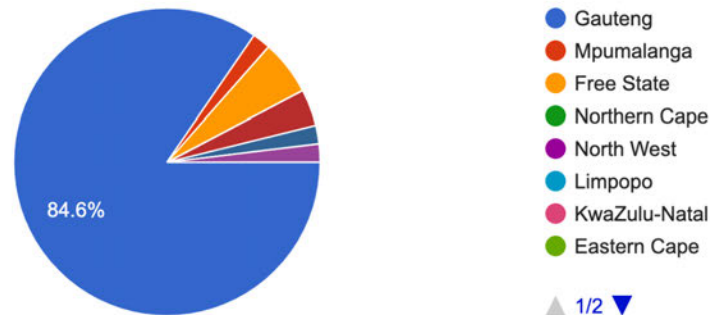


Figure 2.4: Respondents' Geographical Area

Lastly, as illustrated in Figure 2.4, the geographical area of respondents based on the province in which they live was collected. The majority of respondents live in Gauteng province, which was expected due to the population that was selected for this research.

Consumers' Latitude of Noncommitment

The theoretical framework that was chosen for this study, as mentioned in the literature review, is that of social judgement theory. This theory proposes that true persuasion is only achieved if the content falls in line with an individual's latitude of noncommitment or at the edges of their latitude of acceptance (Dainton, 2005). In other words, when consumers are neutral about a certain topic, or on the edges of agreeing, they are the ones who can be persuaded to change their behaviour as they neither agree nor disagree on the topic at hand. If they strongly agree to the statement, they would not be persuaded as they would already behave in a certain way, and if they disagree, they would not be persuaded as they would reject the premise.

Therefore, one of the research goals of this study was to explore whether there exist enough hotel consumers who have a neutral stance on food waste and the environment to postulate as to whether communication could persuade them to change their behaviour at restaurants.

Have you stayed at a Protea or Marriot Hotel in the past 5 - 8 years in South Africa?

53 responses

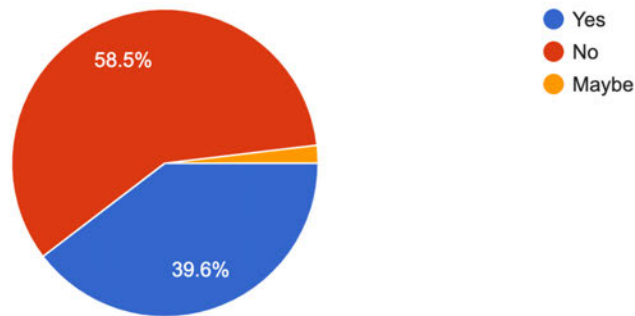


Figure 3.1: Respondent's Recent Brand Interaction

When comparing the data that was collected on whether respondents had visited a Marriot or Protea Hotel in the past five to eight years in South Africa, as seen in Figure 3.1, 21 respondents confirmed that they had visited one of the brand's hotels in the country.

On a scale from one to ten, one being strongly agree and ten being strongly disagree, please select the most applicable given how you feel about the s...rants that have a positive environmental impact".

53 responses

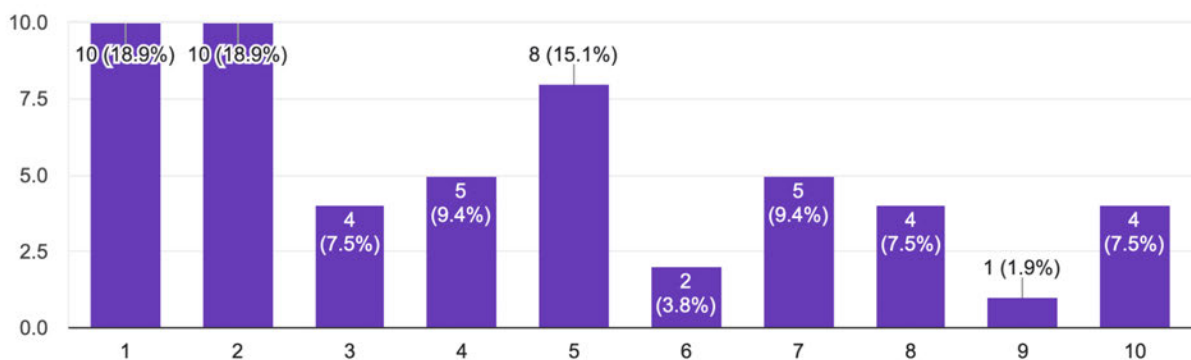


Figure 3.2: Likelihood to Support Environmentally-Friendly Restaurants

To measure whether respondents are more likely to support environmentally-friendly restaurants; therefore, to deduce whether communication around eco-friendly initiatives would matter to consumers, the question, illustrated in Figure 3.2, was included in the survey. An overall average of 4.23 was observed for the scale.

Respondents Recent Brand Interaction	Environmentally-Friendly Restaurant Support
Yes, I have visited a hotel.	4.24
No, I have not visited a hotel.	4.22
Accumulated Average	4.23

Table 3.2: Brand's Consumers and Average Environmental Support Point Score

In order to test whether consumers of the brand would be able to be persuaded to support restaurants that have a positive impact on the environment, data that was collected from the respondents regarding whether they had visited a hotel was compared to the score that they gave when measuring their likelihood to support environmentally-friendly restaurants. The data that was given in Figure 3.1 was aligned with that of Figure 3.2. As illustrated in Table 3.1, the average response to the question of whether respondents who had visited the brands' hotels are likely to support environmentally-friendly restaurants achieved an average of 4.25. This therefore brings the average to a neutral feeling on whether they feel strongly about supporting eco-friendly restaurants, concluding that, on average, consumers feel neutral about whether the restaurants they support have a positive environmental impact.

There was no significant relationship between how consumers of Protea Hotels felt about environmentally-friendly restaurants against how respondents who had never visited a hotel felt. Therefore, the accumulated average was used to draw conclusions. In terms of persuasion theory, the finding of neutrality on whether consumers factor in environmentally-friendliness when choosing a restaurant shows that consumers would be able to be persuaded to start considering sustainability initiatives when choosing to support restaurants.

Please select the most applicable given how you feel about the following statement: "When I am away from home, my eating habits/routine generally change."

53 responses

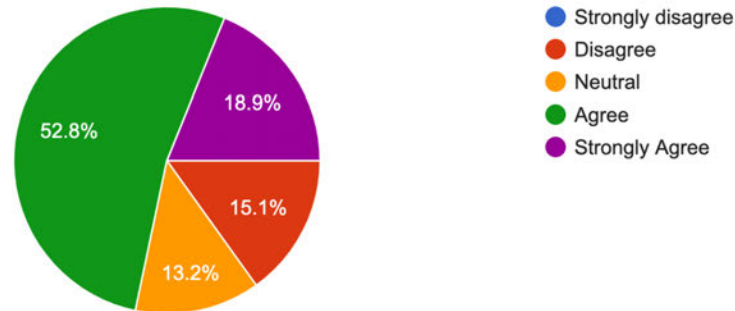


Figure 3.3: Out-of-Home Consumption Behaviour Changes

Other topics that were measured included whether respondents agreed as to whether their eating habits change when they are away from home. Illustrated in Figure 3.3, most respondents simply agreed that their habits change when they are away from home, with a total of 28 respondents which makes up 52.8% of the sample. 13.2% of the sample felt neutral about the statement, therefore resulting in the finding that 66% of the sample could possibly be persuaded to change their consumption behaviours when away from home, according to the method used in persuasion theory.

Attitudes On Environmental Wellbeing

Please select the most applicable given how you feel about the following statement: "The well being of the environment is important to me."

53 responses

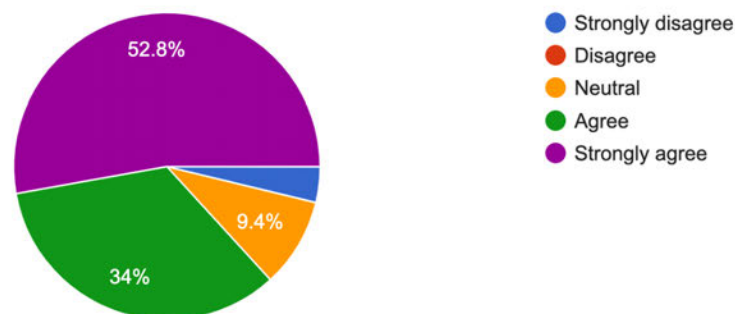


Figure 4.1: Indication of Attitudes on the Wellbeing of the Environment

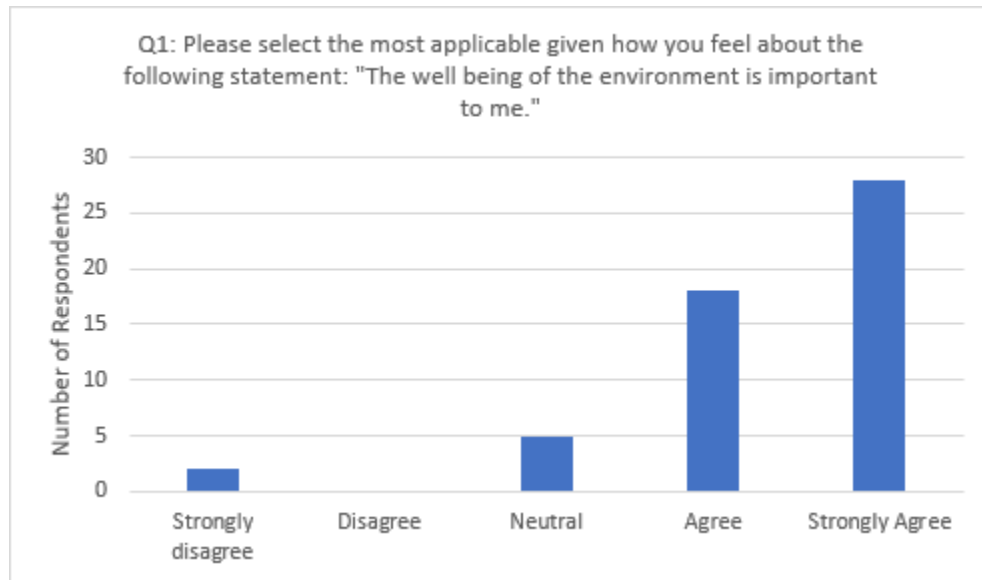


Figure 4.2: Indication of Attitudes on the Wellbeing of the Environment Presented in a Graph

Using the Pearson Skewness Coefficient, which illustrates how many units of standard deviation the median and mean has; in other words, the measure of central tendency (Doane & Seward, 2011). The skewness (Sk_2) for the data set in Figure 4.2 was calculated as:

Sk_2 = Skewness

3.24 = mean

3 = median

3.89 = standard deviation

$$Sk_2 = 3 \frac{(4.32 - 5)}{3.89} = -0.52$$

Sk_2 therefore indicates a left-skewed distribution, due to it being a negative sum and below -0.5, which can be visually confirmed in Figure 4.2. This shows a tendency towards the left side, which indicates that respondents agreed to the statement.

Please select the most applicable given how you feel about the following statement: "I consider the environment when making purchase decisions."

53 responses

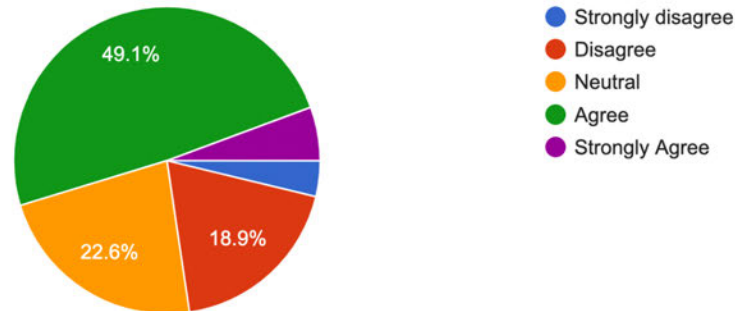


Figure 4.3: Indication of Purchase Intent with Environmental Consideration

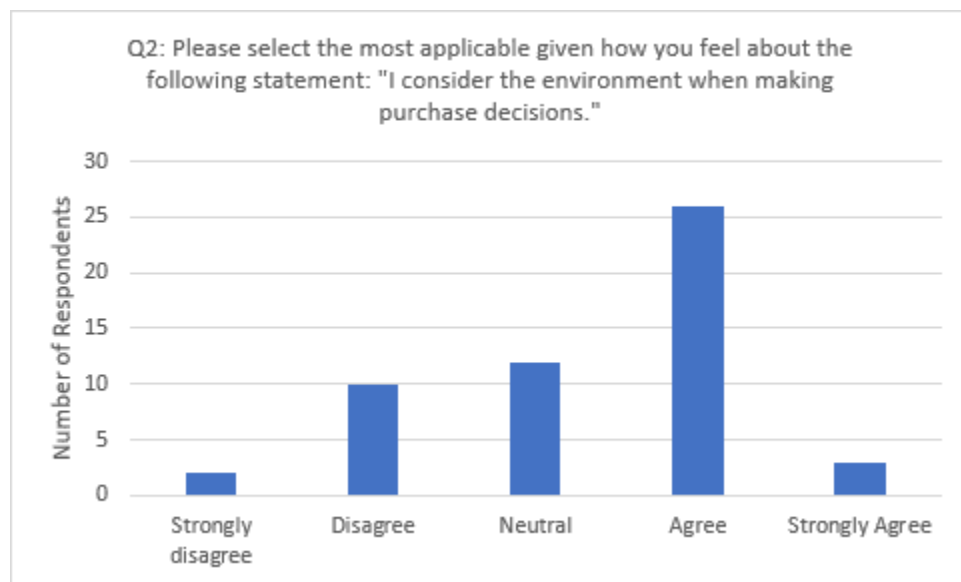


Figure 4.4: Indication of Purchase Intent with Environmental Consideration Presented in a Graph

The same formula was used to measure the skewness of the data from Figure 4.4, the skewness (Sk_2) for the data set in Figure 4.3 was calculated as:

$$Sk_2 = 3 \frac{(3.34 - 4)}{2.96} = -0.67$$

Sk_2 therefore indicates a left-skewed distribution, due to it being a negative sum and below -0.5, which can be seen in Figure 4.4. This shows a tendency towards the left side, which indicates that respondents mostly agreed to the statement.

Both these data sets are therefore confirmed as left-skewed measures which confirms the tendencies of the respondents towards environmental consideration, whilst also confirming the spread of the data.

Out-of-Home Consumption Behaviour

The methods that were used in the proceeding section, namely, the Pearson Skewness Coefficient, was also used to measure the central tendency of the two questions regarding respondents' out-of-home consumption behaviour.

Please select the most applicable given how you feel about the following statement: "When I am away from home, my eating habits/routine generally change."

53 responses

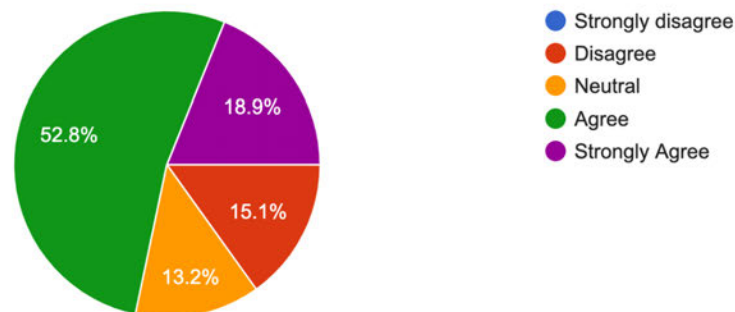


Figure 5.1: Indication of Out-of-Home Consumption Behavioural Change

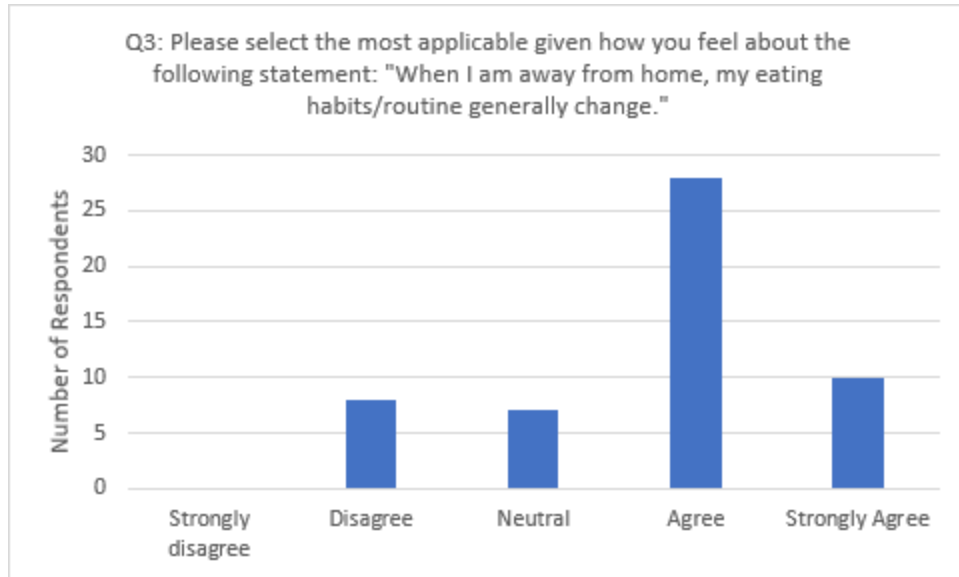


Figure 5.2: Indication of Out-of-Home Consumption Behavioural Change Presented in a Graph

As with the previous results, this data set showed the same left-skewed tendency, with the calculation and results as follows:

$$Sk_2 = 3 \frac{(3.75 - 4)}{3.35} = -0.22$$

This is representative of the graph in Figure 5.2.

Please select the most applicable given how you feel about the following statement: "I enjoy trying different foods from different cultures."

53 responses

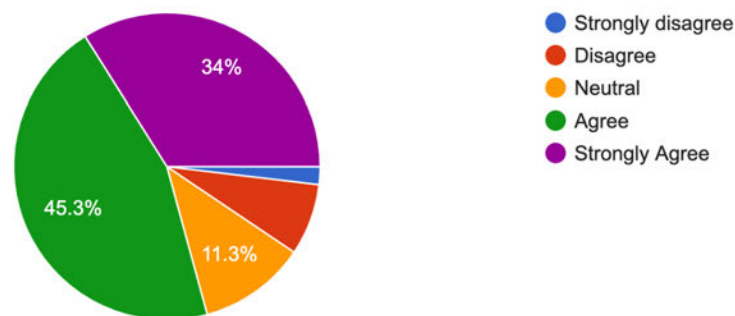


Figure 5.3: Indication of Multicultural Food Enjoyment

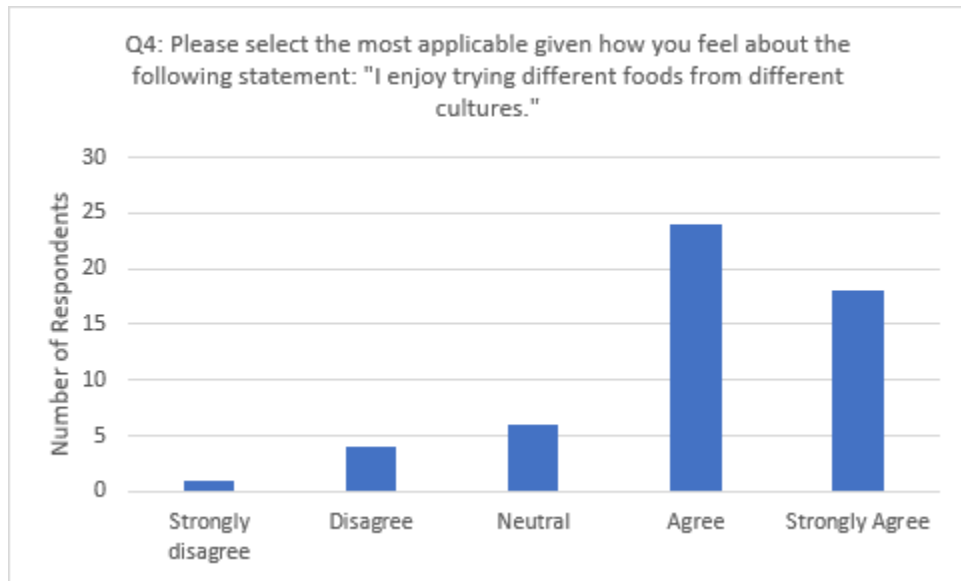


Figure 5.4: Indication of Multicultural Food Enjoyment Presented in a Graph

The calculation for the last set of data that was tested using the Pearson Skewness Coefficient was calculated as follows:

$$Sk_2 = 3 \frac{(4.02 - 4)}{3.61} = -0.017$$

Similarly indicating left-skewness as per the rest of the data sets that were tested, therefore confirming the left-skewed distribution of the data, as depicted in Figure 5.4.

The Relationship Between Food Waste Awareness and Feelings of Guilt when Wasting Food

H₀: There is no significant relationship between people that are aware of the impact of food waste on the environment and people who feel guilty when wasting food.

H_a: There is a significant relationship between people that are aware of the impact of food waste on the environment and people who feel guilty when wasting food.

OBSERVED	Question B: I feel guilty when I do not finish my food	Question A: I am aware of how food waste affects the environment										Total	%
		1 out of 10	2 out of 10	3 out of 10	4 out of 10	5 out of 10	6 out of 10	7 out of 10	8 out of 10	9 out of 10	10 out of 10		
	1 out of 10	3	2	3	0	0	0	3	0	0	0	11	0.20755
	2 out of 10	1	0	3	1	0	1	1	1	1	0	9	0.16981
	3 out of 10	1	1	4	2	1	1	0	0	0	1	11	0.20755
	4 out of 10	0	0	1	0	0	0	0	0	0	1	2	0.03774
	5 out of 10	0	2	0	0	0	2	0	0	0	0	4	0.07547
	6 out of 10	0	0	1	1	0	0	0	0	0	0	2	0.03774
	7 out of 10	0	0	0	0	0	0	2	1	0	0	3	0.05660
	8 out of 10	0	0	1	1	0	2	1	0	0	0	5	0.09434
	9 out of 10	0	0	0	0	0	0	0	1	1	0	2	0.03774
	10 out of 10	0	0	0	1	1	0	0	0	0	2	4	0.07547
	Total	5	5	13	6	2	6	7	3	2	4	53	

Table 6.1: Observed Values: Question A - I am aware of how food waste affects the environment. Question B - I feel guilty when I do not finish my food.

EXPECTED	Question B: I feel guilty when I do not	Question A: I am aware of how food waste affects the environment										Total	%
		1 out of 10	2 out of 10	3 out of 10	4 out of 10	5 out of 10	6 out of 10	7 out of 10	8 out of 10	9 out of 10	10 out of 10		
	1 out of 10	1.03774	1.03774	2.69811	1.24528	0.41509	1.24528	1.45283	0.62264	0.41509	0.83019	11	0.20755
	2 out of 10	0.84906	0.84906	2.20755	1.01887	0.33962	1.01887	1.18868	0.50943	0.33962	0.67925	9	0.16981
	3 out of 10	1.03774	1.03774	2.69811	1.24528	0.41509	1.24528	1.45283	0.62264	0.41509	0.83019	11	0.20755
	4 out of 10	0.18868	0.18868	0.49057	0.22642	0.07547	0.22642	0.26415	0.11321	0.07547	0.15094	2	0.03774
	5 out of 10	0.37736	0.37736	0.98113	0.45283	0.15094	0.45283	0.52830	0.22642	0.15094	0.30189	4	0.07547
	6 out of 10	0.18868	0.18868	0.49057	0.22642	0.07547	0.22642	0.26415	0.11321	0.07547	0.15094	2	0.03774
	7 out of 10	0.28302	0.28302	0.73585	0.33962	0.11321	0.33962	0.39623	0.16981	0.11321	0.22642	3	0.05660
	8 out of 10	0.47170	0.47170	1.22642	0.56604	0.18868	0.56604	0.66038	0.28302	0.18868	0.37736	5	0.09434
	9 out of 10	0.18868	0.18868	0.49057	0.22642	0.07547	0.22642	0.26415	0.11321	0.07547	0.15094	2	0.03774
	10 out of 10	0.37736	0.37736	0.98113	0.45283	0.15094	0.45283	0.52830	0.22642	0.15094	0.30189	4	0.07547
	Total	5	5	13	6	2	6	7	3	2	4	53	

Table 6.2: Expected Data for H₀: Question A - I am aware of how food waste affects the environment. Question B - I feel guilty when I do not finish my food.

	Value	df
Pearson's Chi-Square	103.37593	81
p value	0.04752	

Table 6.3: Pearson's Chi-square, Degree of Freedom, and Significance

Table 6.1 is a cross tabulation between respondents' answers to how aware they are of how food waste affects the environment and whether they feel guilty when they do not finish their food. Table 6.2 is a cross tabulation of expected responses in the case of no statistical significance.

To determine the statistical significance between these two data sets, Pearson's chi-square test (χ^2) was calculated. In order to reject H₀, the p-value that measures probability must be less than .05 ($p < .05$). Pearson's χ^2 and p-value was calculated using the CHITEST formula in Microsoft Excel, as illustrated in Table 6.3 as 0.04752, therefore, the null hypothesis is rejected and it is concluded that:

There is a significant relationship between people that are aware of the impact of food waste on the environment and people who feel guilty when wasting food ($\chi^2 (81) = 103.37593, p < .05$).

Further Insights

Further insights were deduced by merging sets of data together in order to visually represent relationships between respondent's demographic information with their stance or answers on certain topics.

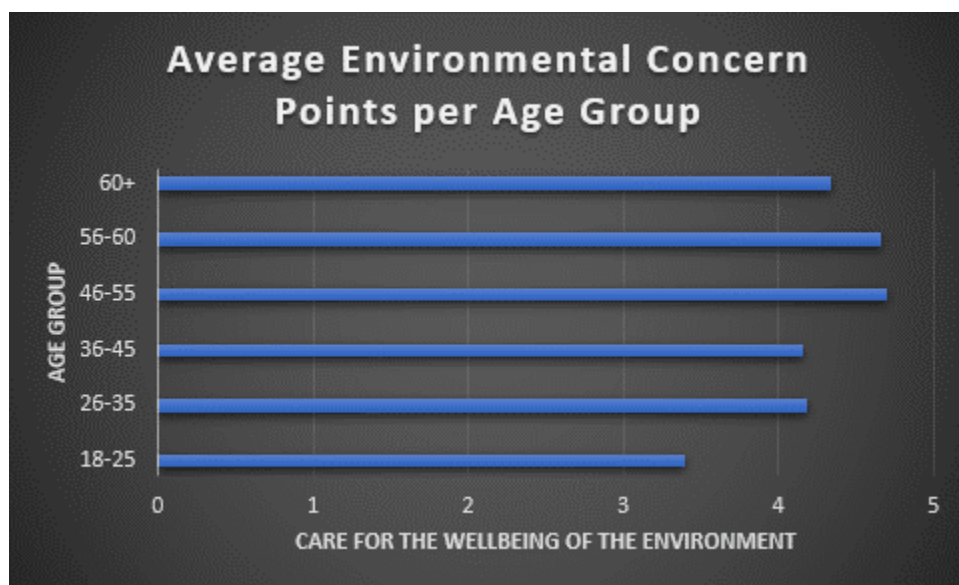


Figure 7.1: Respondent's Age Groups and Care for the Wellbeing of the Environment

In Figure 7.1, the data that was gathered on how respondents felt about the statement "I care about the wellbeing of the ecological environment" on a scale from one to five, with one being extremely unlikely and five being extremely likely was measured against the respondents' age group using their average response. The age group with the greatest average of response for being extremely likely to care for the environment was in the age group 46-55, with the lowest being that of respondents aged between 18-25. This could be a useful insight for communication campaigns that target certain age groups.

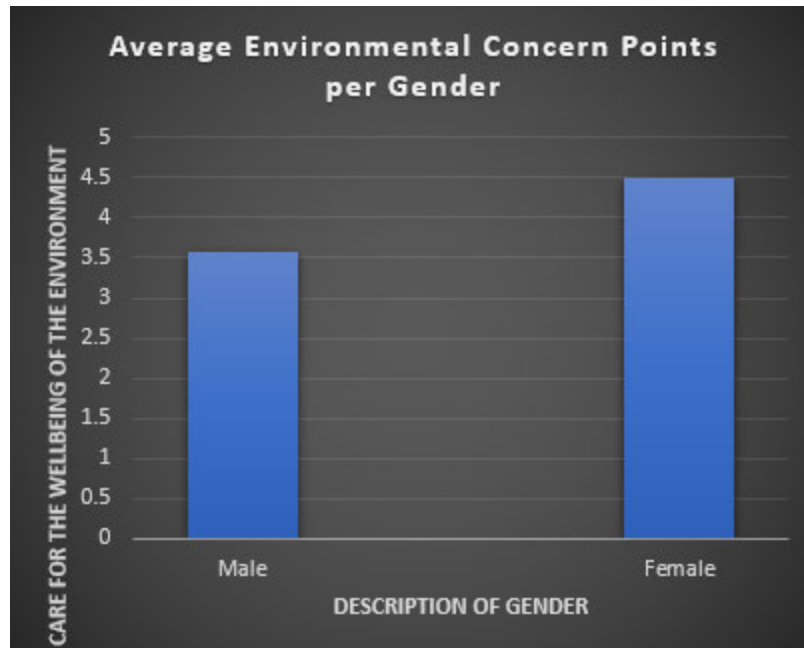


Figure 7.2: Description of Gender and Care for the Wellbeing of the Environment

Similar to the previous insight method, Figure 7.2 compares the average answer to the same question of respondents' sentiment on care for the wellbeing of the environment with the chosen gender description of the respondent. This depicted a tendency for females to have a greater average response of feeling more likely to agree with the statement with the average response for female-identifying respondents at 4.5 on the scale of one to five. Male-identifying respondents had a lower average score of 3.5. In relation to social judgement theory, males may therefore be more likely to be persuaded to change their behaviours as they were closer to neutral, whereas females would already accept that they behave a certain way about the environment and therefore may not be able to be persuaded to change as it sits in their latitude of acceptance.

Consumers' Behaviours and Pre-Existing Attitudes

To further postulate whether certain types of content would appeal to consumers depending on how they behave at restaurants, a series of statements were posed to the respondents as follows:

- I tend to consider caloric values when I am choosing a certain food.
- I tend to choose foods that are familiar to me.
- I have a specific dietary requirement, for health or religious reasons.
- I tend to experiment with different types of food that I have not tried before.

- I tend to choose the most budget-friendly options.
- I generally consider my satiation levels at the time (how hungry or how full I am).
- I tend to take/order small amounts of food, and if I am not satisfied, I will order more.
- I tend to take/order too much food.
- I tend to ask for recommendations from the waitering staff or chef.
- I tend to choose the kitchen's/restaurant's specialty/award-winning dishes/signature dishes.
- I want to know the exact ingredients that are used in the making of certain foods.
- I want a description of how the food tastes (spicy, mild, sweet etc.).

Respondents were then asked to choose which of the above applied to them when choosing food at a restaurant or buffet-style setting. This question was posed in order to explore what types of messages consumers would desire in order to make more informed choices at hotel buffets; therefore leading to decreased plate waste as they would have had the correct information when deciding on a food type.

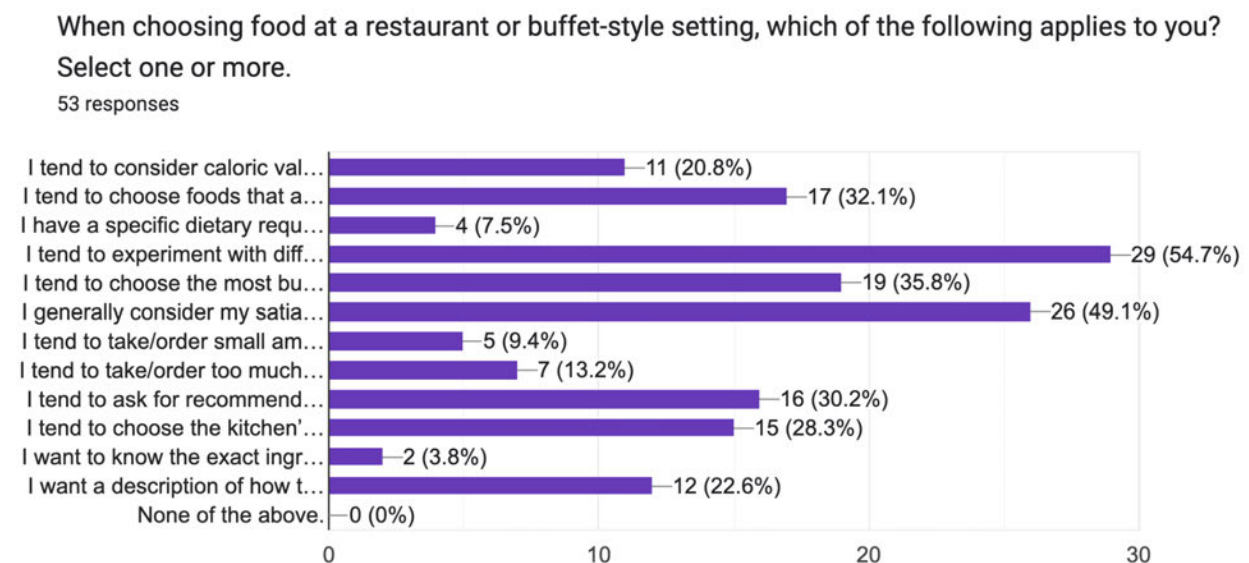


Figure 8: Respondents' Behaviours and Considerations When Choosing Food

Illustrated in Figure 8, the statement that respondents agreed the most to was "I tend to experiment with different types of food that I have not tried before" at 29 respondents, with the least being "I want to know the exact ingredients that are used in the making of certain foods".

This indicates that hotels may continue offering a multicultural selection of foods at the buffet, and that listing the ingredients would not necessarily need to be communicated for most respondents that participated in this study.

However, 22.6% of respondents also agreed to the following statement: “I want a description of how the food tastes (spicy, mild, sweet etc.).” This indicates that it would be helpful to add a description onto each food item at a buffet or on a menu in order to inform the consumer about the taste of the food item so that they can make an informed decision. This may lead to decreased plate waste as they would be able to choose foods that they know that they like.

Open-Ended Question Analysis

The two open-ended questions that were added onto the end of the survey were included in an attempt to add more data and insights into the study, and to postulate whether more qualitative research would need to be done in future studies. An interesting insight that was found across a few respondents was the fact that many of them considered poverty as a main drive not to waste food, as opposed to the environmental effects. These were some of the answers by the respondents when asked “In your own words, how do you feel about food waste?”:

- “In a world where people are starving it makes no sense.”
- “When there is so many poor people who can't afford food I dislike wasting food”
- “Makes me sad given the level of starvation that is out there on the continent on which we live”
- “It should not happen, there are enough hungry people out there.”
- “Personally, I absolutely hate food wastage. Although it's never been an ecological concern for me, it was just the way I was brought up.”
- “There is guilt as there is a lot of people hungry”

These comments should propose that further research be done in order to understand what inspires consumers to change their behaviour when it comes to wasting food. As described above, for this specific sample, the main driver for food waste awareness goes hand-in-hand with living in an environment that has concerns around food distribution and access. This could be a phenomena worth exploring and postulates as to whether this topic could be the main driver of change through communication and education.

Conclusion and Recommendations

Based on the discussed findings, it can be concluded that this study successfully explored whether, according to social judgement theory, there are enough neutral respondents to be able to persuade them to change their behaviour or to consider different sentiments. Due to the significant number of respondents who felt neutral about certain topics around food waste and the environment, it can be postulated that communication targeted towards consumers of hotel buffets could potentially persuade them to consider their actions and behaviours at hotel buffets to minimise plate waste. Furthermore, the types of content that may be used to experiment with at hotel buffets were also touched on throughout this study, whereby it was explored as to how consumers make decisions when choosing what to eat and what to put on their plates.

Research Objectives and Findings

To conclude whether the research objections were met, it is summarised per point as follows:

(1) To determine whether there exist neutrality around certain attitudes on the environment and food waste as to postulate the possibility of persuasive communication gaps

In the data analysis discussion, it was highlighted that there are a number of respondents who are neutral about certain topics around food waste and the environment. Therefore, according to the framework of persuasion theory, it can be stated that these fall in line with the respondent's latitude of noncommitment. These respondents would therefore be able to be persuaded to change their stance on their topics; it is then postulated that this could be applied to a broader audience to possibly change consumers' behaviours to consider the environment when making decisions at hotel buffets and restaurants alike. This also answers the research question of "What messages would possibly persuade consumers to make more reasonable choices at a buffet to subsequently lead to decreased waste?"

(2) To determine what behaviours consumers have at restaurants for possible content direction that would improve their experiences and minimise plate waste

In the analysis of consumers' behaviours, as well as the open-ended question discussion, it was explored as to whether there are certain types of messages that may help consumers make more informed choices at hotel buffets in order to limit plate waste. It was found that communications describing how food tastes at hotel buffets may help consumers to make better

decisions to choose foods that they would enjoy, therefore leading to decreased waste. The research question that was answered was “What are some of the pre-existing attitudes of consumers at hotel buffets?”

(3) To explore any correlations between phenomena that may assist with further recommendations to prompt consumers to consider food waste as a concern using communication

For the last objective, the relationship between food waste awareness and feelings of guilt was analysed by testing opposing hypotheses. It was concluded that there is a significant relationship between people that are aware of the impact of food waste on the environment and people who feel guilty when wasting food. Therefore, it is proposed that the greater the awareness of how food waste affects the environment, the more likely consumers would second guess wasting food. This calls for more awareness and communication campaigns to inform consumers of the effects of wasteful behaviour which may lead to more mindful decision making when choosing foods and less plate waste.

In addition to the above conclusions that were discussed; insights into consumers of hotel buffets and restaurants were gathered to guide further communication strategies, with insights on how certain age groups feel about the environment, and how gender descriptions differed in terms of how strongly they feel about the environment. There were also insights gathered on whether respondents would consider supporting environmentally-friendly restaurants, therefore postulating whether environmental messages would be effective when communicating with consumers. The conclusion was reached that, while some people rejected or agreed to the statement, there were also a number of respondents who had neutral feelings regarding whether the restaurant they supported took part in sustainability initiatives. Therefore, these consumers would potentially be able to be persuaded to consider supporting restaurants that take part in sustainability initiatives if given the correct communication, according to social judgement theory.

Recommendations

It is recommended that further experimental studies be done in order to test different messages over a long period of time to see whether consumers change their behaviours and whether the campaign had an impact on minimised plate waste. Using the suggested messages that were gathered from consumers on how they choose foods and what they consider when making

these decisions, different messages at hotel buffets could prompt consumers to make more informed decisions when adding to their plates at buffets; therefore reducing plate waste. The more informed consumers are when choosing food, such as whether the food is spicy or sweet, or the caloric content of the foods, the less waste may occur.

Conclusion

It is hoped that this small study will contribute to larger studies over time and inspire other researchers to implement more research into what can be communicated to consumers in order to have a positive impact on food waste. By integrating theoretical frameworks into proposed research, such as persuasion theory, more rich insights into how consumers can be persuaded to change their attitudes and behaviours when at restaurants or hotels can be gathered, increasing awareness of the food waste crisis, and having an overall positive impact on the environment, one less plateful of waste at a time.

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Appendix A: Questionnaire

Section 1 of 6: Participant Consent

Dear Respondent,

My name is Christina de Gouveia, and I am a postgraduate student at Vega School. I am currently conducting research under the supervision of Dr. Cerneels Coetzee about pertinent issues facing the South African environment. I hope that this research will enhance my understanding of food waste and aid the development of communication objectives thereafter.

I would like to invite you to participate in this study. In order to explain to you what your participation in this study will involve, I have formulated questions that I will try to fully answer so that you can make an informed decision about whether or not to participate. If you have any additional questions that you feel are not addressed or explained in this information sheet, please do not hesitate to ask me for more information. Once you have read and understood all the information contained in this sheet and are willing to participate, please indicate your choice in the next question.

- What will I be doing if I participate in your study?

I would like to invite you to participate in this research because I require consumer insights in order to complete my research project. If you decide to participate in this research, I would like you to continue on to take part in a survey which will consist of five parts. You can decide whether or not to participate in this research. If you decide to participate, you can choose to withdraw at any time or to decide not to answer particular questions.

- Are there any risks/ or discomforts involved in participating in this study?

Whether or not you decide to participate in this research, there will be no negative impact on you. There are no direct risks or benefits to you if you participate in this study. You might, however, indirectly find that it is helpful to consider your experiences at restaurants when answering the questions. If you find at any stage that you are not comfortable with the line of questioning, you may withdraw or refrain from participating.

- Do I have to participate in the study?

Your inclusion in this study is completely voluntary. If you do not wish to participate in this study, you have every right not to do so. Even if you agree to participate in this study, you may withdraw at any time without having to provide an explanation for your decision.

- Will my identity be protected?

I promise to protect your identity. I will not use your name in any research summaries to come out of this research and I will also make sure that any other details are disguised so that nobody will be able to identify you. Nobody else, including anybody at Vega, will have access to your private information; this study is anonymous and I will not have access to any other personal details, other than the ones you provide in this survey.

- What will happen to the information that participants provide?

Once I have collected sufficient responses, I will write summaries to be included in my research report, which is a requirement to complete my Postgraduate Diploma in Brand Building. You may ask me to send you a summary of the research if you are interested in the final outcome of the study.

- What happens if I have more questions about the study?

Please feel free to contact me or my supervisor should you have any questions or concerns about this research, or if there is anything you need to know before you decide whether or not to participate.

You should not agree to participate unless you are completely comfortable with the procedures followed.

My contact details are as follows:

Christina de Gouveia

[REDACTED]

[REDACTED]

Thank you for your time and consideration.

Best Regards,

Christina de Gouveia.

Please select "Next" to continue.

Question 1: Do you wish to proceed with the survey?

Select one

Yes

No

Section 2 of 6: Respondent Information

Question 2: In which province do you live in?

Select one

Gauteng

Other

Question 3: Please indicate your age group.

Select one

18-25

26-35

36-45

46-55

56-60

Question 4: Please select the most appropriate description of yourself.

Select one

Male

Female

Non-binary

Prefer not to say

Question 5: Please indicate your income bracket based on your individual annual gross earnings.

Select one

Less than R100 000 per annum

R100 001 - R299 999 per annum
R300 000 - R499 999 per annum
R500 000 - R699 999 per annum
R700 000 - R899 999 per annum
R900 000 - R1100 000 per annum
More than R1000 000 per annum
I am currently unemployed
I prefer not to say
I am currently not working
I am self-employed

Question 6: Have you stayed at a Protea or Marriot Hotel in the past 5 - 8 years in South Africa?

Select one

Yes

No

Maybe

Section 3 of 6: Environmental Awareness

Question 7: The well being of the environment is important to me.

Select one

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

Question 8: "I am aware of how food waste affects the environment."

On a scale from one to ten, one being extremely aware and ten being extremely unaware, please select the most applicable given how you feel about the statement above

Extremely Aware 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. Extremely Unaware

Question 9: I consider the environment when making purchase decisions.

Select one

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

Section 4 of 6: Consumption Habits

Question 10: When I am away from home, my eating habits/routine generally change.

Select one

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

Question 11: I enjoy trying different foods from different cultures.

Select one

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

Question 12: When choosing food at a restaurant or buffet-style setting, which of the following applies to you?

Select one or more

I tend to consider caloric values when I am choosing a certain food

I tend to choose foods that are familiar to me

I have a specific dietary requirement, for health or religious reasons

I tend to experiment with different types of food that I have not tried before

I tend to choose the most budget-friendly options

I generally consider my satiation levels at the time (how hungry or how full I am)

I tend to take/order little food, and if I am not satisfied, I will order more

I tend to take/order too much food

I tend to ask for recommendations from the waitering staff or chef

I tend to choose the kitchen's/restaurant's specialty/award-winning dishes/signature dishes

I want to know the exact ingredients that are used in the making of certain foods

I want a description of how the food tastes (spicy, mild, sweet etc.)

None of the above

Other:

Section 5 of 6: Food Waste

Question 13: What word comes to mind when you think about plate waste? (food waste left on plates after a meal)

Select one or more

Unnecessary

Unacceptable

Normal

Unavoidable

Avoidable

I don't think about plate waste

None of the above

Other:

Question 14: Which statements apply to you as a consumer at a restaurant?

Select one or more

Food waste shouldn't concern me as a consumer

Food waste should be the restaurant's/kitchen's responsibility

Leftover plate waste should be the consumer's responsibility

None of the above

Other:

Question 15: On a scale from one to five, one being extremely unlikely and five being extremely likely, please select the most applicable given how you feel about the statement: "I care about the wellbeing of the ecological environment."

I don't 1. 2. 3. 4. 5. I do

Question 16: "I feel guilty when I do not finish my food"

On a scale from one to ten, one being strongly agree and ten being strongly disagree, please select the most applicable given how you feel about the statement above

Strongly Agree 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. Strongly Disagree

Question 17: "I am more likely to support restaurants that have a positive environmental impact"

On a scale from one to ten, one being strongly agree and ten being strongly disagree, please select the most applicable given how you feel about the statement above

Strongly Agree 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. Strongly Disagree

Question 18: In your own words, how do you feel about food waste?

Question 19: How do you avoid food waste?

Section 6 of 6: Participant Consent

By selecting "I agree" below, I agree to participate in the research conducted by Christina de Gouveia, postgraduate student of Vega School, about food waste.

This research has been explained to me and I understand what participation in this research will involve. I understand that:

- I agree to submit my answers to this survey.
- My confidentiality will be ensured.
- My participation in this research is voluntary and I have the right to withdraw from the research at any time.
- There will be no repercussions should I choose to withdraw from the research.

Do you agree to submit this survey?

I agree

I do not agree

[Submit Survey]

Thank You

Thank you for your valuable contribution. I appreciate your time and I hope you enjoyed this survey. Your insight is extremely valuable. Kind Regards, Christina de Gouveia.

Link to Full Results:

<https://docs.google.com/forms/d/1MHzzwhv0po1LxOaPJZTf4gxUWxhL2qppaxbaiiblwpo/edit?usp=sharing>

Appendix B: Ethical Clearance Letter



Date: 17 June 2022

Student name: Christina De Gouveia

Student number: 513 000 4176

Campus: IIE Vega Online

Re: Approval of RMET8429 Proposal and Ethics Clearance

PGDip ETHICAL CLEARANCE LETTER

Your research proposal and the ethical implications of your proposed research topic were reviewed by your supervisor and the campus research panel, a subcommittee of The Independent Institute of Education's Research and Postgraduate Studies Committee.

Your research proposal posed no significant ethical concerns and your supporting documents and instruments are in order to proceed. We hereby provide you with permission to proceed with your research.

In the event of you deciding to change your research methodology in any way, kindly consult your supervisor to ensure all ethical considerations are adhered to and pose no risk to any participant or party involved. A revised ethical clearance letter will be issued.

We wish you all the best with your research!

GENERAL CONDITIONS TO BE FULFILLED IN RELATION TO RESEARCH

Permission is granted to proceed with the above study subject to the conditions listed below being met and may be withdrawn should any of these conditions be flouted.

Please note: The panel has not considered the merits, accuracy or ethical soundness of the research. The only merits examined are the use of The IIE as a sample.

Permission is granted subject to the following conditions:

1. The researcher(s) will need to obtain informed consent in writing from all of the participants in his/ her sample if the study is not anonymous.
2. The researcher(s) may only use the data collected for research purposes and in no other way.

3. Photographs of human subjects may only be taken if relevant to the research, informed consent was obtained, and even with informed consent, the photographs may not be published on any online platforms.
4. The researcher is responsible for supplying and utilising his/her own research resources, such as stationery, photocopies, transport, faxes and telephones and should not depend on the goodwill of the institutions and/or the offices visited for supplying such resources.
5. No names or identifying information of participants may be used within the research and the research must be voluntary.
6. Please make it clear that the information will not be used punitively in any way and participants may in no way be counselled/advised based on this.

Navigator name: Dr Cerneels Coetzee



Signature:

Campus Postgraduate Coordinator (CPC) name: Dr Tish Taylor

Signature:

