



**Determining the factors that influence the purchase
intention of South African consumers towards plant-based
alternatives: The case of Fry's**



Thesis submitted in fulfillment of the requirements for
the degree **Master of Commerce in Strategic Brand
Leadership** at The Independent Institute of
Education, Vega School.

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09/ 11 / 2024

Abstract

This study investigates the factors influencing South African consumers' intentions to purchase plant-based alternatives, with a particular focus on Fry's, a leading brand in the plant-based industry. Grounded in the Theory of Planned Behaviour (TPB) and extended to include sustainability and brand image, the research investigates how attitudes, subjective norms, perceived behavioural control, sustainability motivations, and brand image affect current purchasing behaviour and future purchase intentions. A closed-ended, self-administered online survey was conducted, targeting South African consumers aged 18 and older. Using convenience sampling, the study achieved a sample of 101 respondents.

Data analysis incorporated descriptive statistics, factor analysis, and correlation analysis to validate the TPB framework and assess the relationships between variables. The findings reveal that attitudes, subjective norms, perceived behavioural control, and sustainability significantly affect current purchase behaviour and future purchase intentions, highlighting the role of perceived health and environmental benefits in shaping consumer purchase intentions. Younger, educated, and female consumers demonstrated a higher propensity toward plant-based alternatives, reflecting global trends in sustainable consumer behaviour. Notably, brand image alone did not significantly affect current purchase behaviour or future purchase intentions, highlighting the need for brands to align their image with broader health and sustainability values.

The study's recommendations focus on targeted marketing strategies, emphasising health and environmental benefits. Limitations, including time and cost constraints are discussed, along with directions for future research on plant-based consumer behaviour in emerging markets. This research contributes to the academic body of knowledge by validating the factors of the TPB within the South African concept. It furthers the theoretical model to include extended factors of sustainability and brand image. Through its practical applications it provides insights for brands aiming to grow their positioning in the plant-based alternative industry in South Africa.

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CHAPTER 1: INTRODUCTION

1.1. Introduction

This research explores the impact of sustainability on South African consumers' purchase intentions towards plant-based alternatives, with a specific focus on Fry's, a leading plant-based food brand in South Africa. Environmental concerns relating to food production, particularly animal agriculture, contribute significantly to climate change and resource depletion, the urgency for more sustainable food systems has become a global priority. This study will examine the role of plant-based diets as a solution to these environmental issues, alongside the emerging consumer shift towards plant-based foods driven by health, ethical, and ecological motivations.

South Africa's meat consumption is high, yet a shift towards plant-based options is evident, highlighting the potential for increased adoption within the local market. By extending the Theory of Planned Behaviour (TPB) to include sustainability and brand image, this research aims to investigate the factors influencing South African consumers' intentions to purchase plant-based products.

1.1.1. Contextualisation

Food production is one of the main contributors to current environmental problems (Carfora, Morandi & Catellani, 2022:1). Animal agriculture is considered as one of the largest contributors of climate change and food insecurity (Capps, 2024), contributing to unsustainable levels of greenhouse gas emissions and environmental degradation (Papies, Johannes, Daneva, Semyte & Kauhanen, 2020:3). The results of which have led to intensified droughts, hurricanes, and flooding disproportionately affecting food-insecure populations, deepening their situation (Capps, 2024). Farming of livestock is inefficient and requires more resources and yields less food, requiring a large amount of land, water, and crops thus aggravating environmental issues (Capps, 2024). Food consumption has increased due to a growing global population, as a result improving the sustainability of food systems will benefit from a shift towards greater reliance on plant-based foods and a reduction in the consumption of meat and other animal-based product (Graça, Godinho & Truninger, 2019:381). Plant-based diets have gained popularity to address environmental issues and are driven by environmental, ethical, and public health considerations (Vinnari & Vinnari, 2013:370). Mintel (2023) highlights

a surge of 302% of the plant-based industry between 2018 and 2022, this is largely driven by a significant rise in consumer interest of new packaged consumer goods with plant-based claims. This trend is expected to grow further, indicating the shift towards the adoption of plant-based alternatives quickly becoming a widespread lifestyle choice (Mintel, 2023). Plant-based alternatives refer to any consumer foods that are derived from plant sources and are driven by consumers' concerns regarding environmental and human health (Mintel, 2023).

Sustainability is a key consideration for consumers when purchasing plant-based alternatives with the belief held by 60% of global consumers that plant-based diets are better for the environment (V-Label, 2022). Despite the view that the growing shift towards a plant-based diet is a result of vegetarians or vegans, it is in fact driven by consumers wanting to reduce the consumption of meat and animal-based products whilst still occasionally consuming animal-based products (Denver, Nordström & Christensen, 2023:419; Glanbia, 2022). There is a growing global trend towards the need to adopt a plant-based alternative diet, to curb climate change, greenhouse gas emissions and environmental degradation (Graça, Godinho & Truninger, 2019:3). Internationally consumers are increasingly recognising the urgent environmental challenges, leading them to prioritise environmental sustainability in their purchasing decisions (Deloitte, 2019). Therefore, there is a global trend that has emerged relating plant-based alternatives as a solution to the ongoing environmental crisis (Capps, 2024).

South Africa has high levels of beef and poultry consumption (Szejda, Stumpe, Raal, and Tapscott, 2021). However, the influence of high levels of food insecurity and the rise of diet-related diseases that are associated with high meat consumption has resulted in South African consumers increasingly experimenting with plant-based alternatives (Moonaisur, Marx-Pienaar & de Kock, 2020). South Africa is experiencing a significant shift towards plant-based foods, however significant opportunities remain (Clarke, 2024). Most notably, understanding generational adoption towards food, despite generational cohorts sharing similar attitudes and purchasing behaviour, generational segmentation is important for strategic decisions and understanding adoption potential (Moonaisur *et al.*, 2020).

1.1.2. Rationale

World leaders have committed to fulfilling the 17 United Nations (UN) Sustainable Development Goals (SDGs) by 2030 of nine of which depend on global food systems becoming structurally sustainable (Wang & Scrimgeour, 2021:3). Environmental sustainability and plant-based diets have gained popularity on a global scale which is reflected in the variety of approaches to plant-based academic research, categorised by country and by purpose.

Various studies focus on the intention to consume plant-based alternatives (Denver, Nordström & Christensen, 2023; Carfora, Morandi & Catellani, 2022; Vasquez, 2021; Wang & Scrimgeour, 2021; Pandey, Ritz & Perez-Cueto, 2021) promoting an increase in the consumption of plant-based foods (Kopplin & Rausch, 2021; Papies, Johannes, Daneva, Semyte, & Kauhanen, 2020), pro-environmental behaviour as a prediction to plant-based diets (Krizanova, Rosennfeld, Tomiyama & Guardiola, 2021) and evidence of the reduction of meat consumption and following plant-based diets (Graça *et al*, 2019). Studies conducted in South Africa relate to analysing the availability and variety of plant-based meat alternatives in supermarkets (Moonaisur *et al.*, 2020), opportunities available for plant-based food manufacturers (Will, 2021) and segmentation of the South African plant-based and cultivated meat consumer (Szejda, Stumpe, Raal & Tapscott, 2021). There is however a limited focus on the South African context, highlighting a potential knowledge gap in the context of consumers intention to purchase plant-based alternatives. This study further contributes by extending the Theory of Planned Behaviour (Ajzen, 1991) to include the concept of sustainability towards the intention to purchase plant-based alternatives, with specific focus on consumers. Cocks (2022), highlights that plant-based alternatives are slowly growing in South Africa despite the country remaining high on the global list for meat consumption, revealing that the market is still in its infancy, with the potential for future growth.

1.1.3. Problem statement

Despite the global trend towards plant-based diets as a sustainable solution, there is limited evidence of the effect of sustainability on South African consumers' purchase

intention of plant-based alternatives. Therefore, the research aims to investigate the factors that influence South African consumers purchase intentions towards plant-based alternatives, with a specific focus on Fry's, a prominent plant-based food manufacturer in South Africa.

1.1.4. Research purpose

The aim of the research is to determine the effect of attitudes, subjective norms and perceived behavioural control as defined by the TPB influence South African consumers purchase intentions towards plant-based alternatives. The TPB is extended to include the effect of sustainability and brand image of Fry's.

The research focuses on the following objectives:

- To determine the effect of attitudes, subjective norms and perceived behavioural control on South African consumers purchase intentions of plant-based alternatives as proposed in TPB
- To extend the model of TPB to include sustainability and Fry's brand image for investigating South African consumers purchase intentions of plant-based alternatives.
- To understand consumer purchase decisions for plant-based alternatives.
- To examine the food purchasing behaviours of flexitarian consumers.
- To use the findings of the study to make suggestions for Fry's brand strategies

1.2. Preliminary literature review

The purpose of this chapter is to present an overview and analysis of previous literature on plant-based alternatives, sustainability and consumer purchase intention, specifically focused on South African consumers.

Ajzen's (1991) TPB was developed in 1985 as an extension to the Theory of Reasoned Action (TRA) by Fishbein and Ajzen (1975). TRA was first developed by Fishbein in 1967 to understand the relationship between attitude and behaviour (Fishbein & Ajzen, 1975) According to Ajzen and Fishbein (1975), TRA assumes that people are rational and make systematic use of available information. As a result, people consider the implications their actions and their implications prior to deciding on whether to perform

a given behaviour or not. TRA was developed to predict volitional behaviour, based on logical and reasoned thought processes (Suntornsan, Chudech & Janmaimool, 2022:4) and claims that an individual's intention to perform a behaviour is the most immediate and predictive determinant of that behaviour (Ajzen & Fishbein, 1980). Intentions consist of motivational factors that influence behaviour and are in essence the effort taken to perform the behaviour (Ajzen, 1991:182). According to TRA, intention is the immediate determinant of behaviour and when an appropriate measure of behaviour has been obtained, it will provide the most accurate prediction of that behaviour. The direct determinant of people's behavioural intentions are their attitudes towards the behaviour and the subjective norm associated with the behaviour. TRA hypothesizes that people have higher intentions to perform a behaviour when they have a positive attitude towards the behaviour and when there is perceived greater social pressure to do so (Ajzen, 1985). Ajzen extended TRA by adding perceived behavioural control (PBC) in an effort to account for factors outside a person's control that may affect his/her intentions and behaviour. PBC therefore refers to people's assessment of how easy or difficult it will be for them to perform that behaviour (a measure of self-efficacy) (Ajzen, 1991). Ajzen, (1991:187) indicates that intentions influence behaviour; whilst intentions are influenced by an individual's attitudes, subjective norms, and perceived behavioural control, making the TPB a framework that is useful for determining behaviours related to purchase intentions of plant-based alternatives. TPB hypothesizes that with positive attitudes, greater subjective norms and higher perceived behavioural control, individuals are more likely to perform behaviours (Ajzen, 1991). In the context of this study, it is proposed that South African consumers purchase intentions of plant-based alternatives will be affected by sustainability and brand image of Fry's. Brand image builds brand equity, which results in higher stock values, higher prices because of higher perceived value, greater social impact because of the brand name and the ability to extend the brand through product and service line extensions (Keller, 2005). Due to its relatively simple design and the ability to predict consumer intention and behaviour, TPB has received considerable attention and successful application in consumer research, particularly in food consumption intentions (Navarré, 2017).

Behavioural beliefs refer to beliefs concerning the anticipated outcomes of engaging

in a behaviour, therefore impacting an individuals' attitudes toward that behaviour based on the perceived consequences and the value associated with the resulting outcomes (Bosnjak *et al.*, 2020; Ferguson, Hair, Silver & Mollah, 2017). Behavioural beliefs and attitudes can be favourable or unfavourable, however people with a positive attitude towards a behaviour are more likely to intend to perform the behaviour (Suntornsan *et al.*, 2022). Consumers' attitudes towards purchasing plant-based alternatives are shaped by their beliefs about the environmental and health benefits. Positive attitudes can significantly increase the intention to purchase plant-based alternatives with research indicating that plant-based diets are more sustainable and less taxing on the environment as compared to animal-based diets; this includes lower greenhouse gas emissions, reduced land and water usage, and decreased biodiversity loss (Sabaté & Soret, 2014; Spendrup & Hovmalm, 2022). Plant-based diets are also associated with a lower risk of chronic diseases such as heart disease, diabetes, and certain cancers resulting in these health benefits contributing to the perceived positive outcomes of adopting such diets. (Sabaté & Soret, 2014).

Normative beliefs stem from societal expectations and perceived social pressures, influencing individuals to behave in accordance with perceived subjective norms (Bosnjak *et al.*, 2020; Ferguson *et al.*, 2017). Subjective norms are the personal beliefs about what society, friends and family think about a behaviour, which will influence the decision to perform the behaviour (Carmona, 2022). An individual's intention to purchase plant-based alternatives may be affected by their associations or the beliefs held by the society around them. This is further amplified by the engagement of individuals on social media platforms. Social media is largely impacting the dissemination of virtual information and contributes towards influencing awareness around environmental sustainability amongst individuals (De Leo, Gravili & Miglietta, 2018). Holmgren (2017) indicates that social media is used for the dissemination of information relating to plant-based diets and suggests that individuals are more likely to alter their behaviour in response to content that was emotionally impactful.

Control beliefs pertain to an individual's perceptions of their ability to engage in a given behaviour, considering the factors that hinder or aid behaviour execution, shaping individuals' perceived self-control and effectiveness; consequently, individuals are

more likely to act on their intentions if they perceive the necessary resources to be available (Bosnjak *et al.*, 2020; Ferguson *et al.*, 2017). Perceived behavioural control directly affects behavioural intention and performance of a behaviour (Ajzen, 1991). Therefore, an individual with high perceived behavioural control will be more likely to have the intention to purchase plant-based alternatives should they perceive availability and accessibility for their purchase.

The levels of prediction are not perfect for all behaviours and contexts (Brandão & Goncalves da Costa, 2021), which prompted researchers to consider other constructs for the model to increase the predictability of sustainable purchase intentions. Purchase intention refers to a subjective customer judgment, which is expressed in the purchase of a product or service after an in-depth evaluation (Pinasthika, Suroso & Wulandari, 2021). According to Keller (1993), consumer interest is how likely consumers are to buy a brand or how likely the consumer is to move from one brand to another. Previous studies have shown that product knowledge and brand image have a positive influence on attitude, which causes increased intention towards purchase intention (Pinasthika *et al.*, 2021). The growing demand for plant-based alternatives has influenced Fry's to partner with LiveKindly Co. to increase distribution and availability (Agrawal, 2021). Additionally, the brand has an extensive retail distribution with a comprehensive list of prominent retail stores that stock their brand (Fry's Family Food, 2024).

1.3. Research design and methodology

1.3.1. Research paradigm

Quantitative research is grounded in the positivist paradigm, which indicates that reality is objective and can be measured and understood through empirical observation and statistical analysis (Creswell, 2009:72). Bryman (2015:28) indicates that positivism emphasises the importance of using scientific methods to test hypotheses and theories, ensuring that the research is based on empirical evidence. Therefore, the positivism paradigm aligns with the aim of this research and the researcher will attempt to quantify the findings through statistical analyses (Bryman & Bell, 2014:10)

1.3.2. Research design

Quantitative research involves methodologies for empirical inquiry that focus on the collection, analysis, and presentation of data in a numerical form (Given, 2008:713). Bryman and Bell (2014:31) highlights that quantitative research focuses on data collection and analysis to identify a relationship between theory and research; the principal orientation to the role of theory in relation to the research is deductive thus the study is quantitative in nature. A correlational study will be undertaken, a correlational design study examines the relationship between two or more variables to determine if a statistical association exists, without manipulating any variables (Bryman, 2012). This design is useful in identifying potential relationships and predicting outcomes (Creswell, 2009).

1.3.3. Data collection

The primary data collection method will involve a structured online survey distributed. The survey will utilise a Likert scale format to gauge participant responses, allowing for standardised and easily quantifiable data. The distribution of the survey online will enable wider reach and accessibility, ensuring diverse demographic representation. The population is defined as the total universe from which the sample will be derived from (Bryman, 2015:187). The target population for this study consists of South African consumers above the age of 18 years. The sample is defined as the portion of segment of the selected population that is being investigated, non-probability convenience sampling will be utilised based on respondents' availability, accessibility and voluntary willingness to participate. Convenience sampling involves the selection of individuals based on their availability and readiness to participate in the study thus allowing for easy inclusion into the study, thus it prioritises simplicity and availability (Given, 2008:562; Bryman 2015:201). Due to time and cost limitations, the study aims to have at least 100 participants, which will ensure that the findings can still yield useful insights.

A closed-ended survey which will be constructed after extensive review of the literature and aligned with Ajzen's questionnaire construction. The study will use online surveys as the primary data collection instrument. By leveraging digital platforms, the researcher can reach a substantial number of participants with minimal cost, which

aligns with the convenience sampling strategy where participants are selected based on their availability and readiness to participate. A Google form link will be posted on the researchers' social media platforms. The survey will consist of a demographics section where data related to respondents' socio-demographic characteristics will be asked. This survey aims to collect information from plant-based individuals as well as non-plant-based individuals; this aligns to the emerging trend of flexitarian consumers.

1.3.4. Data analysis

Descriptive statistics will be conducted to summarise and describe the characteristics of the sample. This provides a comprehensive overview of the sample's demographic profile, including variables such as age, gender, income, education level, and other relevant factors. Descriptive statistics involve the use of measures such as frequencies, percentages, means, medians, modes, standard deviations, and ranges to summarise the data (Creswell, 2009; Bryman, 2012). These statistics are essential for understanding the distribution and central tendency of the data (Given, 2008). Descriptive statistics also allow the researcher to identify any potential biases or outliers in the data that could affect the validity and reliability of the research findings (Bryman & Bell, 2014).

Scale data will be analysed using correlation analysis to determine the relationships between the hypothesised variables; correlation analysis is a statistical method used to evaluate the strength and direction of the linear relationship between two continuous variables (Bryman & Bell, 2014). This type of analysis is particularly useful when the goal is to understand how variables are related without implying causation.

1.3.5. Reliability and validity

In quantitative research, generalisability refers to the extent to which the findings of a study can be applied to broader populations beyond the sample used; assessing generalisability typically involves examining the study's sampling procedures and performing statistical analyses to determine the likelihood that the results occurred by chance (Given, 2008:372). Although there is limited opportunity to generalise the findings, the findings may be reflective of a specific consumer segment. Bryman (2015:169) highlights that reliability refers to the consistency undertaken when

measuring a concept and thus involves the degree that the same results can be obtained with repeated trials; reliability has three main facets which are: stability, internal reliability and inter-observer consistency.

1.3.6. Limitations

- Due to time and cost limitations, the intended sample size for this research is 100 participants.
- The study uses non-probability convenience sampling.
- The use of online surveys may exclude individuals without internet access

1.3.7. Delimitations

- The study specifically focuses on South African consumers.
- The research is delimited to understanding the influence of sustainability on the purchase intentions towards plant-based alternatives, specifically Fry's.
- The study employs standardised closed-ended surveys to ensure objective and unbiased data collection which helps in maintaining consistency but may limit the depth of responses obtained.
- The study will specifically examine attitudes, subjective norms, perceived behavioural control, product knowledge, and purchasing behaviour related to sustainability, narrowing the focus to these factors only.
- The study utilises online surveys, allowing for broad reach and easy data collection but excluding those without internet access.

1.3.8. Ethical considerations

Ethical issues involving both the researcher and respondents will be considered in order to ensure that the research study is of a professional standard whilst adhering to all ethical principles which are essential for the practice of research. Ethical principles in research are important to ensure that no harm is done to respondents, there is no lack of informed consent, no invasion of privacy and there is no deception regarding the research and the use of its findings (Bryman & Bell, 2014:120).

1.3.9. Anticipated contributions

This research aims to expand the understanding of the TPB in the context of

sustainability and consumer behaviour by providing empirical evidence on the influence of sustainability on purchase intentions amongst South African consumers.

1.4. Proposed chapter outline

- Chapter 1: This chapter focuses on the background to the research, rationale, problem statement, research aim, research questions and research objectives.
- Chapter 2: This chapter focuses on the underlying theories, key concepts and review of the literature.
- Chapter 3: This chapter focuses on the research design and methodology proposed for the study, hypotheses, data collection and analysis, sample, and ethical considerations.
- Chapter 4: This chapter will focus on data analysis and presentation of findings.
- Chapter 5: This chapter will focus on the conclusions, recommendations and areas for further research.

1.5. Time horizon

	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov
Research proposal										
Literature review										
Methodology										
Data collection										
Data analysis										
Compile and submit										

For this research study a cross-sectional design will be used indicating that the data is collected at a single point in time, this will therefore provide a “snapshot” of South African consumers at the time of the survey (Setia, 2016).

1.6. Conclusion

With environmental concerns, including climate change and resource scarcity, underscoring the need for more sustainable food production, plant-based diets present

a viable alternative that aligns with global and local sustainability goals. This research highlights the importance of targeted strategies that address the unique needs and concerns of South African consumers, particularly those adopting flexitarian diets as a bridge to more sustainable consumption patterns. The next chapter aims to provide an in-depth literary investigation based on existing and current academic literature relating to the topics discussed in this study.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

Chapter 2 provides an overview and critical analysis of existing. This chapter will set the foundation for new studies by identifying key theories, findings, and gaps in the field. In this chapter, we will explore current research on plant-based alternatives, sustainability, and consumer purchase intentions, with a particular focus on South African consumers. By reviewing established theories, such as the TPB, and examining studies on consumer attitudes and behaviours towards sustainable products, this literature review will highlight the motivations, barriers, and market potential for plant-based foods in South Africa.

2.2. Sustainability and food production

The United Nations Brundtland Commission (1987), defines sustainability as the ability to meet current needs without impacting future generation's ability to meet their needs, highlighting the need for ecological balance in the pursuit of economic and social development whilst considering the long-term consequences of current actions on future generations. The pursuance of sustainability is the creation and maintenance of conditions that allow for humans and nature to productively exist in harmony in a way that supports present and future generations, incorporating a perspective of integration of environmental considerations into decision-making processes (United Nations Brundtland Commission, 1987).

Sustainability involves the maintenance and enhancement of environmental systems that are essential to the well-being and health of both current and future generations, highlighting the intrinsic value of ecosystems and biodiversity in supporting sustainable development (United Nations Brundtland Commission, 1987). Therefore, sustainability is the ability to meet current needs without compromising the ability of future generations to meet their needs, by creating and maintaining conditions where humans and nature can exist in productive harmony, and by enhancing the environmental systems essential for the well-being and health of present and future generations.

Aiking (2014) highlights that food sustainability and security are increasingly prominent and interconnected, with projections indicating a need to nearly double food production within the next four decades, thus there is a greater need for a reduction in the consumption of animal protein; with the increasing demand for food projected to double by 2050, there is an urgency to reduce the impacts of food production on the environment. There is a direct link between dietary patterns and environmental sustainability, Tilman and Clark (2014:518) highlight the challenge of meeting food production in relation to an increasing global population whilst still attempting to minimise the resulting environmental impact; the current food system is heavily weighted to animal-based products which significantly contribute to environmental degradation, water pollution and greenhouse gas emissions. Therefore, due to the current environmental decline and its impact of societal and economic transformation, sustainability is a growing consideration that has emerged as a global priority driven by environmental concerns (Lubin & Esty, 2010).

Cote (2020) highlights that consumers are increasingly becoming aware of the environmental issues prevalent in society resulting in increased focus being placed on environmental sustainability; businesses further operate in highly saturated environment, thus achieving brand equity through sustainable perceptions is of great importance. Consumers are placing greater emphasis on environmental sustainability in their purchase decisions and therefore their sensitivity of environmental concern and emphasis on sustainability contribute to shaping market dynamics and influencing corporate strategies (Deloitte, 2019:22).

Sustainability has become a crucial factor in consumer decision-making. Environmental concerns drive consumers to seek products that minimise their ecological footprint are more likely to consider sustainability in their purchasing decisions (Nielsen, 2018). Therefore, incorporating environmental sustainability into corporate strategies is crucial for long-term viability and competitiveness; sustainable practices not only mitigate environmental impacts but also enhance corporate reputation and attractiveness to stakeholders (Lubin & Esty, 2010). The current food production system can be seen as unsustainable. Herrero, Gerber, Vellinga, Garnett, Leip, Opio, Westhoek, Thornton, Olesen, Hutchings, Montgomery, Soussana,

Steinfeld and McAllister (2006) highlight the significant impact of animal agriculture in greenhouse gas emissions, deforestation, and water pollution. Similarly, Agrawal (2021) and Sabaté and Soret (2014:478) indicate that animal-based food significantly impacts global emissions.

Meat provides 18% of the calorie intake of the world yet accounts for 83% of the use of farmland (Agrawal, 2021). Animal agriculture requires large amounts of resources such as land, water, and feed resulting in substantial deforestation to create space for grazing lands and cultivating feed crop; this leads to habitat loss, biodiversity depletion, and increased carbon emissions (Foley *et al.*, 2005). Gerber *et al.* (2013), highlights that animal agriculture severely contributes to global warming due to greenhouse gas emissions, particularly methane and nitrous oxide.

2.3. Green purchases

Sustainability is seen as a megatrend, referring to the development of societal and economic shifts due to the impact of environmental issues on the ability of a business to generate value for stakeholders (Lubin & Esty, 2010). Cote (2020) highlights that consumers are increasingly becoming aware of the environmental issues prevalent in society resulting in increased focus being placed on environmental sustainability; businesses further operate in highly saturated environment, thus achieving brand equity through sustainable perceptions is of great importance.

Green purchasing refers to the buying of products and services that have minimal environmental impact and therefore involves the consideration of the environmental attributes of products and manufacturing practices in the purchasing decision; these purchases consider resource efficiency, reduction of pollution and waste, and sustainability throughout the product lifecycle (Peattie, 2001:138). Sabate and Soret (2014:478) highlight that plant-based diets have lower environmental footprints compared to diets that are rich in animal products; further animal agriculture impacts land use, water consumption, and greenhouse gas emissions. Thus, the purchase of plant-based alternatives is seen as a green purchase and a shift towards plant-based alternatives can reduce pressure on natural resources and mitigate environmental degradation (Sabate & Soret, 2014:478).

Consumers are placing greater emphasis on environmental sustainability in their purchase decisions (Deloitte, 2019:22). Thus, emphasis is placed on the creation of brand equity in a tough economic climate by positioning a business for success and competitive advantage through its association with environmental sustainability (Aaker, 2013). Agrawal (2021) indicates that there is a shift towards conscious consumerism as more individuals worldwide recognise the potential benefits of supplementing plant-based meals into their diets, both for personal health and environmental sustainability, without necessarily eliminating meat.

Both Agrawal (2021) and Sabaté and Soret (2014:478) highlight that animal-based food significantly impacts global emissions. Whilst meat provides 18% of the calorie intake of the world it accounts for 83% of farmland (Agrawal, 2021). Thus, a plant-based diet is associated with lower greenhouse gas emissions compared to omnivorous diets, with estimates ranging from 22% to 48% reduction (Sabaté & Soret, 2014:478).

2.4. Plant-based diets

plant-based diets have emerged as a sustainable alternative with lower environmental footprints, a plant-based diet is associated with lower greenhouse gas emissions compared to omnivorous diets, with estimates ranging from 22% to 48% reduction (Sabaté & Soret 2014:478). Springmann *et al.* (2018), indicate that a shift to plant-based alternatives can reduce an individual's ecological footprint by minimising land use, water consumption, and greenhouse gas emissions associated with food production; similarly Poore and Nemecek (2018), highlight the inefficiencies of animal agriculture, through the comparison of various food production, animal agriculture results in the highest emissions of greenhouse gases, land use, water use and loss of biodiversity. Based on these, Poore and Nemecek (2018) recommend a shift to plant-based diets.

Beyond reduced resource consumption and emissions, plant-based diets have the potential to reduce pressure on ecosystems and wildlife habitats by minimising the demand for agricultural land and reducing deforestation rates (Tilman & Clark,

2014:523). Versace, Hawkin and Abssey (2020) indicate that there has been rapid growth of the plant-based food sector with retail sales of plant-based foods growing by 11.4% in 2019 in USA despite economic challenges posed by the COVID-19 pandemic. The European market has seen almost double its growth for meat substitutes between 2014 and 2019, indicating a broader global trend towards plant-based eating (Versace *et al.*, 2020).

2.5. Cost of plant-based alternatives

Gonzalzo, Nackeeran, Mouzannar and Blachman-Braun (2022) report that people with a lower socioeconomic status tend to consume less of plant-based diet, indicating that socioeconomic disparities may hinder access to healthier food options, potentially exacerbating the prevalence of adverse health conditions within specific population groups. Whilst there has been a some level of shift and consideration to more environmentally friendly purchase options in the last five years amongst all consumers, sustainability remains a larger concern for those with higher income levels due to their increased purchasing power; sustainable alternatives often come at a premium and therefore the prioritisation of sustainability into purchasing decisions is seen as a discretionary spend making it more relevant to affluent consumers (Gonzalzo *et al.*, 2022).

Individuals with higher incomes tend to consider environmentally friendly products due to their ability to absorb higher costs associated with sustainable alternatives; as indicated by Granato, Fischer and Trijp (2022:2) in their study on sustainable packaging, it was evident that higher-income individuals often have more disposable income, which can make sustainable packaging options; they are ultimately more willing to pay a premium for products with sustainable packaging, as they can afford the higher upfront costs associated with eco-friendly materials or production processes. Whilst plant-based is positioned as the solution to sustainability, concerns relating to cost are driving the instability of the industry (Warner, 2024:1). Price is the determining factor and is therefore a large influence of consumer preferences; this results in plant-based alternatives struggling to compete due to their higher cost compared to meat equivalents (Warner, 2024:2). Whilst environmental, ethical and health concerns may have been drivers of plant-based alternatives, there is an

emergence of price sensitivity in food purchases that is driving consumer behaviour (Warner, 2024:5). Lower income consumers tend to prioritise price and convenience over sustainability, therefore limited financial resources may be a constraint for lower-income individuals to prioritise sustainability in their consumption choices (Granato *et al.*, 2022:8). Ultimately whilst income is not a measure of an individual's level of environmental concern, higher-income consumers have the financial means to act on their environmental values through their purchasing decisions and therefore may be inclined to align their consumption habits with their environmental beliefs, even if it means paying a higher price (Granato *et al.*, 2022:2). Versace *et al.* (2020), thus highlights that the cost of plant-based foods remains a barrier for many consumers, plant-based alternatives are often more expensive than animal-based products; achieving competitiveness is essential for making plant-based foods accessible to more people.

2.6. Education level

Granato *et al.* (2022:3) highlight that higher-income individuals typically have greater access to information and education about sustainability issues, which can influence their awareness and understanding environmental consequences; thus, they may be more inclined to seek out sustainable products and make informed decisions based on their knowledge and values. Meyer (2015) highlights that individuals with higher education levels often have greater awareness of environmental concerns resulting in a correlation between educational and behaviours that are pro-environmental; individuals with higher levels of education are more likely to adopt environmentally friendly practices and demonstrate greater awareness of environmental issues.

Ainhoa Irazusta-Garmendia (2023) found a positive association between education level and a pro-environmental behaviour, individuals with higher levels of education are more likely to engage in environmentally friendly practices and express greater support for environmental policies. This increased awareness for environmental sustainability can motivate individuals to adopt plant-based diets to reduce their environmental impact.

Yang and Battocchio (2020:1177) highlight that consumers seek brands that reflect

their own values; transparent communication allows consumers to see whether a brand's actions align with their personal values, thereby strengthening the perception of authenticity; this impacts the consumers attitude and behaviour. Consumers value authenticity and transparency in brand communications and seek genuine connections with brands that align with their values (Yang & Battocchio, 2020).

2.7. Creating brand equity

Brand equity can be assessed through various lenses, such as financial, employee, or customer perspectives (Farjam & Hongyi, 2015). Among these, understanding brand equity from a customer viewpoint holds significant importance, as a brand's value ultimately hinges on its relationship with its customer base (Farjam & Hongyi, 2015). Keller (2013), highlights that creating strong brand equity is essential for fostering consumer trust and loyalty. The concept of brand equity goes beyond financial metrics, emphasizing the need for brands to derive value and meaning from their customers to create a foundation for sustainable growth (Faryam & Honyi, 2015:14).

Brand image, as defined by Kapferer (2008), is the external stakeholders' perceptions of a brand. Keller (2005) underscores the pivotal role of brand image in shaping brand equity, emphasizing that consumers' associations and perceptions profoundly influence a brand's standing. Particularly relevant to this research is the impact of a brand's image as environmentally sustainable on South African consumers' purchasing decisions, which can significantly sway a brand's equity either positively or negatively. When effectively managed, brand equity can confer enduring competitive advantages to businesses (Aaker, 2013). Consumers forge connections with brands based on perceived attributes (Keller, 2005) and wield considerable influence through their purchasing decisions (Cote, 2020). With the escalating demand for environmentally sustainable products among consumers cognizant of environmental crises (Zein, Shelnutt, Colby, Vilaro, Zhou, Greene, Olfert, Riggsbee, Morrell, & Mathews, 2019), brands failing to meet these expectations risk jeopardising their competitive edge and brand equity. Therefore, positioning Fry's as a sustainable brand presents an opportunity to not only enhance its brand equity but also to solidify its competitive advantage in the market.

Emphasising sustainability can be particularly effective in targeting the preferences of environmentally conscious consumers who prioritise sustainability and ethical considerations in their purchasing decisions (Benson-Rea & Fielding, 2020). Therefore, positioning a plant-based brand with sustainability aligns with the values and preferences of this consumer segment, potentially leading to increased brand affinity and market share. Berens, van Riel, and van Bruggen (2005), highlight that the alignment of brand positioning with consumer values can enhance brand perception and strengthen consumer-brand relationships; therefore, the leveraging sustainability in the positioning of plant-based brands can potentially attract environmentally conscious South African consumers as well as foster long-term loyalty and brand advocacy.

Sustainability in relation to brand positioning is no longer an option, but rather it is of great importance due to the growth in awareness of environmental issues and the increased demand for eco-friendly products (Martins, 2024). As consumers become more educated and socially responsible, brands that demonstrate a commitment to sustainability stand a greater opportunity to gain a competitive edge in the market.

Positioning Fry's as a sustainable brand could positively impact its brand equity. Faryam and Honyi (2015:14), highlight the need to brand equity from a customer perspective, indicating that brands need to gain value and meaning from their customers in order to create value for other stakeholders. Keller (2005:9) highlights that brand image is a vital element in the creation of brand equity as it relates to the perceptions held by consumers regarding a brand's associations; based on this concept, the brand image of Fry's as an environmentally sustainable brand may influence consumers purchase decisions, which could thus either increase or decrease the brands equity. Brand equity, when strategically managed as an asset, can result in long-term competitive advantage for a business (Aaker, 2013).

2.8. Consumer demographic

Environmental consciousness is closely linked to influencing consumer choices towards sustainability, consumers that have environmental concerns are more likely

to consider purchasing sustainable products (Verain *et al.*, 2015). Tobler *et al.* (2011), further indicate that consumers prioritising sustainability are more inclined to opt for plant-based alternatives, highlighting the correlation between sustainability concerns and consumer preferences, wherein sustainability considerations increasingly shape purchase decisions

Francis and Hoefel (2018) highlight the high level of concern that Gen Z (born between 1997–2012) has for environmental consciousness and activism, often motivated by a sense of urgency to address climate change, which they see as a critical challenge. Gen Z consumers are often well-informed about sustainability issues, partly due to social media and increased access to information on environmental impacts (Francis & Hoefel, 2018). First insight (2024) reports that Gen Z consumers are more likely to make purchasing decisions based on a brand's sustainability practices, with many willing to pay a premium for eco-friendly products; they frequently consider factors like carbon footprint, ethical sourcing, and recyclable packaging when purchasing, indicating a strong preference for brands that demonstrate genuine environmental responsibility.

Similarly, Millennials (born between 1981–1996) are highly committed to environmental sustainability and are often viewed as pioneers in integrating sustainability into mainstream consumerism (Nielsen, 2018). Nielsen (2018) further indicate that millennials exhibit strong pro-environmental attitudes, particularly regarding reducing waste, choosing organic or natural products, and supporting eco-friendly brands; this has led to the popularisation of plant-based diets, driven by environmental concerns, health benefits, and animal welfare by millennials.

Deloitte (2021) reports that millennials are generally willing to pay more for sustainable products, though their commitment to sustainability can be influenced by price and product availability. Millennials tend to balance sustainability with practicality, meaning they often prioritise eco-friendly choices when convenient and affordable. This generation is also drawn to brands that openly communicate their sustainability efforts, as transparency and brand authenticity are highly valued.

Grace, Mukarati and Springer (2023) report that millennial consumers seek purpose resonant brands and are inclined to green brands with the majority indicating a preference to purchase from environmentally responsible companies. The cost of environmentally sustainable products, however, largely influences millennials purchase decisions (Grace *et al.*, 2023). Benson-Rea and Fielding (2020) highlight that there is a growing consumer preference for sustainable brands. Millennial consumers are driving the demand for sustainable products; this generation has a distinct inclination towards sustainable food options due to their heightened environmental consciousness and have shown a greater propensity towards embracing sustainable food alternatives (Dagevos & Voordouw, 2013; Watson *et al.*, 2020).

Social media influencers and online communities play a significant role in shaping attitudes and behaviours towards food consumption (Hollebeek *et al.*, 2019). Younger generations are digital natives who actively engage with online platforms and social media. These digital channels serve as avenues for the dissemination of information about sustainable food options, fostering a culture of experimentation and exploration among this Gen Z and millennials (McKinsey, 2024; Chang & Chang 2023).

In comparison to Millennials and Gen Z, Generation X (born between 1965 – 1980) consumers are somewhat less influenced by sustainability messaging and more by product quality, durability, and value for money (Deloitte, 2021). While many Generation X individuals recognise the importance of sustainability, they may be less willing to pay a premium solely for eco-friendly products. Generation X is more receptive to sustainability initiatives that provide practical benefits, such as energy-saving appliances or cost-effective recycling options (Deloitte, 2021).

Additionally baby boomers (born between 1946–1964) generally display awareness of environmental issues, but this awareness does not always translate into sustainability-driven purchasing behaviour; this generation grew up during a period when environmental issues were less emphasised, which can affect their purchasing priorities (Nielsen, 2018). Factors such as price, convenience, and brand loyalty often take precedence over sustainability in baby boomers consumer decisions (Nielsen, 2018).

2.10. Plant-based alternative product knowledge

Providing information about the benefits of plant-based diets may increase the likelihood of consumers adopting these diets. Plant-based products, particularly those that serve as alternatives to traditional animal-derived foods, often face significant legal challenges related to naming conventions; these challenges stem from regulatory frameworks that govern food labelling and marketing practices; the primary issue lies in whether plant-based products can use terms traditionally associated with animal-based products, such as "milk," "meat," and "sausage" (Food Compliance , 2023). In 2022, the South African government, through the Department of Agriculture, Land reform and Rural Development (DALRRD) issued a ban requiring that plant-based products not use names traditionally associated with animal-based products; this directive sparked significant controversy and debate within the industry (Southey, 2022). The South African Meat Processors Association (SAMPA) supported the directive, arguing that that these labelling is misleading and incorrect and the ban on naming plant-based products will protect consumers and maintains clarity in the marketplace (Southey, 2022). The opposition arguments made by plant-based manufacturers include Fry's indicate that the notion is baseless and results in a major step back in addressing environmental issues such as climate change, Fry's further highlight that they have been producing plant-based products for over 30 years in South Africa and at no point did their product name cause any confusion amongst consumers (Southey, 2022). In 2024 after a two-year battle, the South African court ruled against the proposed plan on banning plant-based products with meat like names; this was seen as a major win for the plant-based industry in driving consumer awareness going forward (Selby, 2024).

2.11. Flexitarian consumer

There is an increased adoption of plant-based diets; according to a report by Nielsen, nearly 39% of Americans are actively trying to eat more plant-based foods, indicating a significant segment of the market (Nielsen, 2018). This increased focus is driven by individuals that are considered as flexitarians; flexitarians these consumers are not entirely vegan and still consumer meat products; however, their attempts to cut down meat consumption is motivated by various drivers such as health or environmental concerns (Osaka, 2023). Fraser (2023), highlights that there is a shift to offer more

plant-based alternatives in South African retailers to projected market increase, despite growth affordability remains a key consideration for consumers, particularly with plant-based proteins often perceived as costly. The popularity and acceptance of a flexitarian diet has increased, and individuals are continuing to seek ways to incorporate more plant-based meals into their weekly consumption; thus, a greater need is eminent for efforts that make plant-based options more accessible and cost-effective for consumers, reflecting the increasing demand for sustainable and healthier food choices.

Nielson IQ (2019) reports that whilst 5% of U.S. households are strictly vegan or vegetarian, nearly 60% of consumers believe in balancing animal and plant foods in their diet; thus, indicating that a significant proportion of meat alternative buyers also purchase meat, spending more on average than typical meat buyers. Therefore, flexitarians play a crucial role in the market dynamics of plant-based and traditional meat industries. Understanding the shift to a flexitarian consumer is an important aspect of understanding key attributes that plant-based alternatives need to deliver; flexitarian consumers represent a significant portion of the global population with one in four consumers globally identify as flexitarians, surpassing vegans, vegetarians, and pescatarians in number (Beneo, 2021). These consumers are increasingly looking for ways to reduce their meat consumption due to their environmental and health concerns. However, they seek products that are close to the experience of eating meat, thus they are looking for plant-based products without sacrificing the taste and appeal of meat (Beneo, 2021, Nardella, 2023). Versace *et al.* (2020), indicates that a challenge for plant-based alternatives is achieving consumer acceptance, particularly regarding taste and texture; whilst improvements and innovations have progressed the quality of plant-based products, there is still a gap in replicating the sensory experience of animal-based foods, overcoming this challenge is crucial for broader consumer adoption. Flexitarians are a key group for future growth within the plant-based industry. However, this consumer group has high expectations of what the texture and taste of plant-based food should be in comparison to meat derived products, as such there is greater expectations than that of vegan and vegetarians (Nardella, 2023).

2.12. Impact of a flexitarian diet on climate change

The 1.5°C target of the Paris Agreement is an ambitious goal set by the international community to limit global warming to 1.5 degrees Celsius; this is based on scientific evidence that shows the severe impacts of climate change become increasingly dangerous beyond this threshold (United Nations, 2024). Based on a scientific study by Humpnoder, Popp, Merfort, Luderer, Weindl, Benjamin, Bodirsky, Stevanovic, Klein, Rodrigues, Bauer, Dietrich, Lotze-campen and Rockstrom (2024), a flexitarian diet has been identified to have a significant contribution to reducing carbon emissions in line with meeting the 1.5C Paris agreement. Poore and Nemecek (2018), strongly advocated for a shift to a flexitarian diet as a critical strategy for reducing the environmental impacts of food production; this shift is essential for achieving sustainability and climate goals, making plant-based diets a preferred choice for both environmental and health reasons. Poore and Nemecek (2018), found that animal-based diets have higher environmental impacts across all measured indicators compared to plant-based diets and transitioning to plant-based diets can dramatically reduce land use, greenhouse gas emissions, freshwater use, and contributions to eutrophication and acidification. By reducing or eliminating animal products, food-related emissions can be reduced by up to 73%.

2.13. Plant-based alternatives as a shared value model

Historically, society and businesses have often been viewed as competitors, with the prevailing belief that businesses contributing to societal benefits would see their economic success diluted due to increased costs and reduced profits (Porter & Kramer, 2011). Kramer and Pfizer (2016), highlight that shared value is the pursuit of financial success in a way that simultaneously yields societal benefits. Porter and Kramer (2011), further highlight that businesses can undertake to create economic value whilst co-creating value for society; thereby simultaneously addressing consumer needs and challenges. A business can create economic value while simultaneously co-creating value for society by addressing consumer needs, and tackling societal challenges (Porter & Kramer, 2011).

Plant-based alternatives exemplify this by aligning business success with societal and environmental benefits. As identified, animal agriculture largely contributes to the

increased environmental issues prevalent in societies whilst adopting a plant-based diet is seen to significantly contribute to reaching international environmentally sustainable goals. Martins (2024) highlights that brands can promote sustainable consumer behaviour whilst simultaneously addressing pressing environmental challenges, the environmental impact of plant-based diets is significantly lower than that of traditional meat-based diets; with livestock production being a major contributor to greenhouse gas emissions, deforestation, and water use, plant-based food production is seen as a more sustainable alternative.

Businesses that offer plant-based alternatives provide products that have an integrated sensitivity towards environmental issues and results in reduced overall meat consumption; this allows businesses to fundamentally operate with a mission to create shared value alongside profitability (Porter & Kramer, 2011). As Fry's positions itself as a champion of sustainability, it not only can profitably enhance its brand equity but also contributes to larger societal efforts towards environmental conservation. Transitioning to a shared value creation model has the potential to enhance a company's competitiveness and financial success through policies and practices that also improve societal economic and social conditions (Kramer & Pfitzer, 2016). Chladek (2019), argues that environmentally sustainable businesses do not necessitate sacrificing profits for environmental benefit; instead, the success of a business and environmental sustainability are interdependent; a business cannot implement better environmental practices if it is not performing well economically. Further application of this model can be achieved by considering the environment as a stakeholder (Willard, 2019). Viewing the environment as a stakeholder allows businesses to create value for the environment itself while pursuing business value, ultimately benefiting society.

2.14. Health as a driver for plant-based alternatives

Osaka (2023) highlights that health, and environmental concerns are the two main reasons individuals attempt to cut down meat consumption. Adopting a plant-based diet is associated with numerous health benefits, including lower risks of heart disease, hypertension, type 2 diabetes, and certain cancers (Tuso *et al.*, 2013). Tuso *et al.* (2013), further highlights plant-based diets and their impact on health, concluding that

such diets are associated with lower body mass index, lower blood pressure, and reduced incidence of chronic diseases. Similarly, Garwood (2024), indicates that consumers are increasingly prioritising health and sustainability in their food choices; this shift is evident in the rising demand for plant-based proteins, which are perceived as healthier than animal-based proteins.

Despite results indicating that there are various health benefits with adopting a plant-based diet, there is not enough evidence that indicates that plant-based alternatives contribute to these health benefits additionally there is a lack of clarity regarding plant-based diets and plant-based alternatives, which often are ambiguously used interchangeably. McManus (2024), highlights that a plant-based diet focuses on eating foods predominantly derived from plants, such as fruits, vegetables, nuts, seeds, oils, whole grains, legumes, and beans. Whilst plant-based alternatives are derived from these ingredients, it is often viewed as a highly ultra-processed product and may contain additives like sodium, sugars, and artificial colourings, which can detract from their health benefits additionally through processing beneficial nutrients found in whole plant foods can be stripped away (Shafer, 2023). This could be the reason that despite the benefits of plant-based diets, plant-based alternative protein has experienced declines in the recent years; Osaka (2023) reports that despite the increased focus on environmental issues and reduced meat consumption, plant-based alternatives are not performing as well as expected.

2.15. Conclusion

Chapter 2 highlights the critical role of sustainability in modern consumer behaviour and food production, emphasising the urgent need for sustainable practices in response to environmental challenges. Research shows that food production, particularly animal agriculture, has a significant environmental impact, contributing to deforestation, water pollution, and greenhouse gas emissions (Tilman & Clark, 2014; Herrero *et al.*, 2006). Consumers are increasingly aware of these impacts, prompting a shift towards plant-based diets, seen as a more sustainable and eco-friendlier alternative to traditional meat consumption (Aiking, 2014; Poore & Nemecek, 2018). This shift is not only driven by environmental concerns but also by ethical and health

motivations, with plant-based diets linked to numerous health benefits (Tuso *et al.*, 2013).

The literature also reveals that consumer preference for sustainability is reflected in purchasing behaviours, with green purchasing and brand equity linked to environmental sustainability, especially among younger generations (Cote, 2020; Nielsen, 2018). Overall, this review establishes a solid foundation for understanding the factors that influence South African consumers' purchase intentions toward sustainable food options, particularly in the context of Fry's plant-based products and highlights the market's potential for growth.

The next chapter will outline the research methodology employed in this study. This chapter will detail the research design, approach, and data collection methods used to investigate South African consumers' purchase intentions toward plant-based products.

CHAPTER 3: RESEARCH METHODOLOGY

3.1. Introduction

The research methodology chapter outlines the approach and methods used to investigate the factors influencing South African consumers' purchase intentions towards plant-based alternatives. This chapter begins by discussing the research paradigm and design, establishing the quantitative framework that guides this study. A cross-sectional survey methodology is employed, aligning with the study's objective to capture a "snapshot" of consumer attitudes, beliefs, and behaviours at a specific point in time.

The chapter also details the sampling strategy, data collection methods, and survey design, which are grounded in the TPB and extended to include sustainability and brand image. Through a structured questionnaire distributed to a representative sample of South African consumers, this methodology seeks to quantify the relationships among key variables, such as attitudes, subjective norms, perceived behavioural control, and sustainability beliefs. Finally, the data analysis techniques are outlined, including descriptive statistics and correlation analysis, to identify patterns and relationships that inform consumer purchase intentions. This methodological foundation is crucial for ensuring the reliability and validity of the study's findings, ultimately contributing valuable insights to the field of sustainable consumer behaviour.

3.2. Conceptual framework & hypotheses

Based on the findings of the literature review in chapter two, the conceptual framework and hypotheses for this study could be identified. A hypothesis is a prediction or tentative statement about the relationship between variables, a set of hypotheses are typically presented in quantitative research when there is sufficient prior research to make a prediction (Given, 2008:408). TPB positions that there are three kinds of considerations that guide human behaviour: behavioural beliefs, normative beliefs and control beliefs (Bosnjak *et al.*, 2020:254). The research aims to test specific hypotheses derived from TPB (Ajzen, 1991), extended to include sustainability as a variable influencing purchase intention. Quantitative research provides the methodological rigor needed to empirically test these hypotheses through statistical

analysis (Ajzen, 2020).

Figure 3.1: conceptual framework for the study is based on the TPB with extended factors relating to sustainability and brand image. Each arrow represents the hypothesized direction of influence between factors.

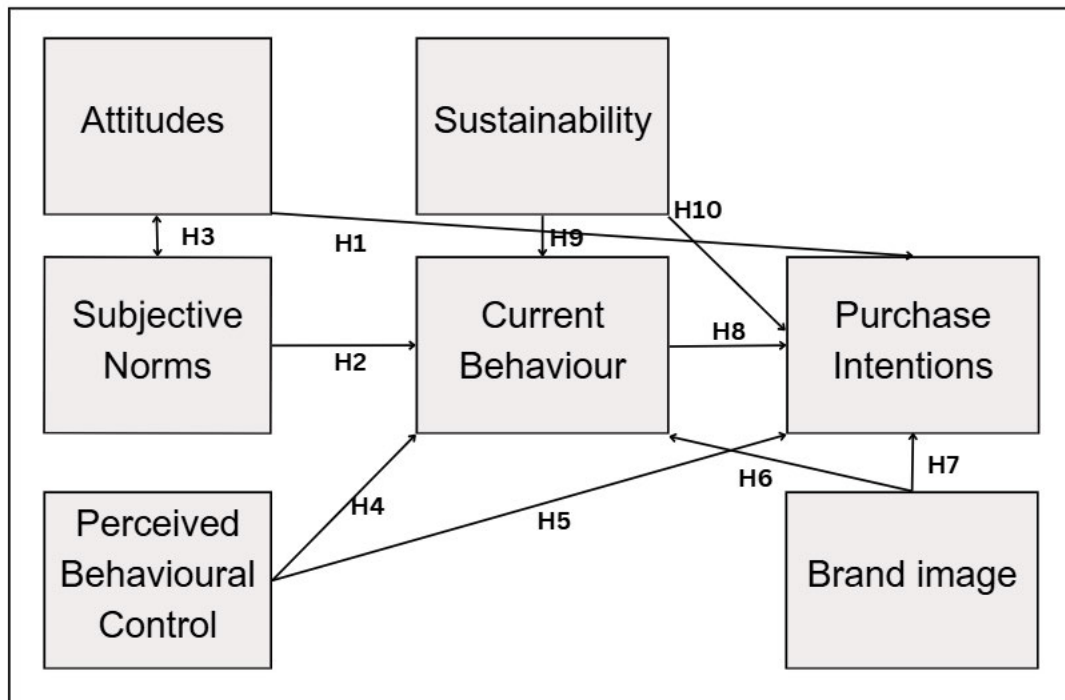


Figure 3.1: Conceptual framework for the study

Based on this framework the following hypotheses are derived:

H1: Attitudes will positively affect the purchase intentions of South African consumers towards plant-based alternatives.

H2: Subjective norms will positively affect the current behaviour of South African consumers towards plant-based alternatives.

H3: There is a statistically significant relationship between attitudes and subjective norms .

H4: Perceived behavioural control will positively affect the current behaviour of South African consumers.

H5: Perceived behavioural control will positively affect South African consumers intention to purchase plant-based alternatives.

H6: Brand image will positively affect South African consumers intention to purchase plant-based alternatives.

H7: Brand image will positively affect the current behaviour of South African consumers.

H8: Current behaviour will positively affect South African consumers intention to purchase plant-based alternatives.

H9: Sustainability will positively affect the current behaviour of South African consumers

H10: Sustainability will positively affect the intention to purchase of South African consumers

3.3. Research paradigm

Comte (1853) proposed that the positivism paradigm in research is rooted in scientific inquiry focusing on observable, measurable phenomena and that knowledge could be developed only through empirical observation and logical analysis. This paradigm emphasises the use of scientific methods, which involve hypothesis testing, replicability, and objectivity, to produce reliable knowledge. According to Bryman and Bell (2015), positivist research seeks to minimise researcher bias and focuses on data that can be quantified.

Quantitative research is grounded in the positivist paradigm, which indicates that reality is objective and can be measured and understood through empirical observation and statistical analysis this allows for the testing of relationships between predefined variables influencing South African consumers' intentions to purchase plant-based alternatives (Creswell, 2009:72). Bryman (2016:28) indicates that positivism emphasises the importance of using scientific methods to test hypotheses and theories, ensuring that the research is based on empirical evidence. Positivism holds that objective reality exists independently of human perceptions and beliefs, making it suitable for studies that seek to quantify and analyse human behaviour in a structured way (Bryman, 2016).

Given (2008:646) describes positivism as focusing on objectivity, replicability, and the use of scientific methods to test hypotheses and theories. Creswell (2009:24) further

highlights that positivism focuses on objective observation and measurement, where researchers aim to generate knowledge through the collection of quantifiable data and the testing of hypotheses, which seeks to discover principles that can explain and predict phenomena. The positivism paradigm is relevant to this study as it aligns with the objective of empirically testing the hypotheses derived from the Theory of Planned Behaviour. By adopting a positivist approach, the researcher focuses on collecting quantifiable data through surveys and applying statistical methods to test the relationships between variables. This approach ensures that the findings are based on empirical evidence. Researchers in positivist studies play a limited role, primarily focused on collecting and objectively interpreting data, devoid of personal values; therefore, the positivism paradigm aligns with the aim of this research and the researcher will attempt to quantify the findings through statistical analyses (Bryman & Bell, 2014:10).

The selection of a positivist paradigm is appropriate for this research as it allows for the examination of objective, quantifiable relationships between variables within the TPB. The structured nature of TPB, positivism is ideal for guiding this research, as it enables the study to systematically test hypotheses and measure relationships between these constructs and consumer intentions toward plant-based alternatives.

In the positivist paradigm, the researcher assumes an independent, detached stance, focusing on gathering objective data to test hypotheses without personal influence or bias (Given, 2008). This neutrality is crucial in quantitative research, where the aim is to ensure that results are reproducible and not subject to the researcher's interpretations this is undertaken through the use of closed-ended survey questions with Likert scales, which standardise responses and enable statistical analysis free from subjective interpretation. An online survey further ensure that each participant receives the same questions under similar conditions, allowing for consistency in responses. This approach is essential for generating reliable and valid data, as it minimises variation and bias (Creswell, 2009).

Furthermore, the statistical methods used in positivist research, such as correlation analysis and descriptive statistics, align well with the paradigm's goals of discovering

patterns and predicting relationships between variables. The quantitative methods chosen for this study allow for hypothesis testing within the TPB framework, providing an objective analysis of how attitudes, subjective norms, perceived behavioural control, and additional factors like sustainability impact South African consumers' purchase intentions.

3.2. Ontology and epistemology

Ontology refers to the nature of reality or what can be said to exist. An objectivist ontological stance is adopted, consistent with the positivist paradigm. Objectivism asserts that reality exists independently of human perceptions and can be measured objectively (Bryman, 2016). The study's design approach factors such as attitudes, subjective norms, and perceived behavioural control as entities that can be quantified through structured survey responses. This is consistent with objectivism, where constructs are seen as existing independently of individual interpretation, and the research aim is to measure these constructs accurately rather than explore subjective interpretations. Creswell (2009) indicate that positivist research often aligns with objectivist ontology because it relies on quantifiable variables and empirical data to represent reality. Thus, the objective reality of consumer attitudes and intentions is assumed to be stable and measurable across individuals, aligning with objectivist views in ontology.

Epistemology concerns the nature of knowledge and how it can be acquired. The epistemological stance is positivist indicating that knowledge is seen as verifiable through empirical observation and quantifiable data. Positivism positions that knowledge is obtained by observing facts and establishing relationships through scientific methods, free from the researcher's subjective influence (Creswell, 2009). Under a positivist epistemology, this study relies on structured, quantifiable data collection to gain knowledge about consumers' intentions. Positivist epistemology is reinforced by the study's use of statistical analysis, which allows the researcher to identify significant patterns without subjective interpretation. Hypotheses are tested, and findings are evaluated against a threshold of statistical significance, providing a basis for accepting or rejecting claims based on empirical evidence (Bryman & Bell, 2015). Creswell (2009) further emphasise that positivist research aims to produce

objective, value-free findings that are replicable.

Axiology is the study of values, including the role of the researcher's values in the research process. In a positivist framework, the research is expected to be value-neutral, meaning the researcher's values should not influence the study design, data collection, or interpretation. Positivist research aims to maintain an objective stance, focusing on minimising bias and ensuring that findings are based solely on observable data (Given, 2008). The researcher's personal beliefs or values do not affect the data collection or analysis, ensuring that the study remains impartial. Bryman (2016) asserts that in positivist research, the researcher's role is primarily to observe, measure, and analyse data without interference from personal values. A value-neutral approach ensures that results are based solely on empirical data, lending credibility to the findings.

3.4. Research design

Quantitative research involves methodologies for empirical inquiry that focus on the collection, analysis, and presentation of data in a numerical form (Given, 2008: 713). Bryman and Bell (2014:31) highlights that quantitative research focuses on data collection and analysis to identify a relationship between the theory and research; the principal orientation to the role of theory in relation to the research is deductive thus the study is quantitative in nature. This study examines how attitudes, subjective norms, and perceived behavioural control, as defined by the Theory of Planned Behaviour, influence South African consumers' intentions to purchase plant-based alternatives. Quantitative research is relevant as it allows the researcher to objectively measure these variables and test the hypotheses derived from the theory.

According to (Creswell, 2009:59) quantitative research is suitable when the objective is to examine relationships between variables and to test theories or hypotheses through statistical analysis; this approach provides a structured and systematic way to collect data, ensuring objectivity and reliability in the findings. Creswell (2009) highlights that quantitative research is suited to studies that aim is to test theories or models, as in this case with TPB, where structured measurement and statistical analysis can confirm or refute the hypothesised relationships. This theory-driven

design allows the research to be grounded in a widely accepted theoretical model, enhancing both the study's rigor and relevance. It also allows for hypothesis testing within the structured TPB framework, which provides insights into the relative influence of each variable on consumer intentions to purchase plant-based alternatives (Bosnjak *et al.*, 2020).

A cross-sectional design is used indicating that the data is collected at a single point in time; this design provides a “snapshot” of South African consumers at the time of the survey. Due to time constraints in data collection, the cross-sectional nature of the study provides an advantage as it allows for the efficient collection of data from a large group within a limited time frame; It is particularly suitable for understanding current consumer behaviour patterns (Setia, 2016).

A structured, self-administered online survey is used as the primary data collection method, consistent with the quantitative and cross-sectional nature of the study. This format ensures that data collection is standardised, which is essential for reliability and validity in quantitative research (Bhandari, 2023). The survey is designed with closed-ended questions and Likert-scale. Questions are based on TPB constructs and extended to include items on sustainability and brand image specific to plant-based alternatives. This structured format minimises variability in responses, allowing for a clear interpretation of results and supporting statistical analysis.

3.5. Research approach

The relationship between the theory and research informs whether the research is deductive or inductive in its approach, a deductive approach requires that the research is guided by the theory whereas the inductive approach results in the theory as an outcome of the research (Bryman, 2015:19). Based on the known theories in a particular domain, a hypothesis or multiple hypotheses are determined, these hypotheses will encompass the theoretical concepts that are to be reconceptualised into researchable entities; lastly these hypotheses are then empirically scrutinised (Bryman, 2015:24). For this study the research approach is deductive based on the TPB.

Creswell (2009:64) and Given (2008) highlight that deductive research moves from a general theory to specific observations and conclusions, aiming to confirm or refute the initial hypothesis. This method is systematic and structured, ensuring that the research process is guided by existing theoretical frameworks; this approach contrasts with inductive research, which starts with observations and develops a theory as an outcome of the research process. Bryman (2015:24) emphasises that quantitative research is particularly suited for studies where the objective is to test hypotheses derived from theoretical frameworks through statistical analysis.

The deductive approach is identified through the grounding of the research with the general premises provided by TPB. Based on this theory, the hypotheses are developed relating to how each TPB construct, along with added variables such as sustainability and brand image, might influence purchase intentions among South African consumers. Through the testing of these predefined hypotheses, the study can provide conclusive, theory-based insights rather than exploratory findings, aligning with the structured nature of quantitative research (Creswell, 2009). There is a structured flow from theory to observation, therefore each question is developed through the guidance of the TPB. This structured flow from theory to data collection ensures that all observed data directly address the research questions and hypotheses. This theory-driven method also supports the quantitative approach's goal of collecting objective, replicable data by providing a clear, logical pathway from theoretical assumptions to observable results (Given, 2008).

Explanatory research is focused on testing relationships between variables and providing insights into how and why certain factors impact specific outcomes (Creswell, 2009). Through the application of the TPB this study aims to clarify these relationships in a structured, hypothesis-driven manner. The hypotheses are derived from TPB and further integrates additional variables like sustainability and brand image, expanding on TPB to explain consumer motivations more comprehensively (Bosnjak *et al.*, 2020). This focus on hypothesis testing aligns with the purpose of explanatory research, which seeks to clarify the direction and strength of relationships between variables (Bryman, 2016). Deductive reasoning is particularly suited to explanatory research, as it provides a clear pathway from theoretical assumptions to

data-driven conclusions, enhancing both the rigor and relevance of findings (Creswell, 2009). Exploratory research, by contrast, is generally used when little is known about a topic and aims to uncover new insights without rigid hypotheses or predefined theoretical frameworks (Given, 2008).

3.6. Population

The population is defined as the total universe from which the sample will be derived (Bryman, 2015:187). The target population for this study consists of South African consumers. The study is geographically limited to South Africa, focusing on consumers within this national context. The study targets consumers of varying age groups, as age can significantly influence attitudes toward plant-based products and sustainability. Younger consumers tend to show higher awareness and preference for sustainable and ethical products compared to older generations (Nielsen, 2018); however, including a broad age range allows the study to capture variations in awareness and acceptance of plant-based alternatives across generational lines. The population includes individuals with varying dietary habits and preferences - omnivores/flexitarians, vegetarians, carnivores and vegans

This population of South African consumers is selected based on the research objective to understand factors influencing purchase intentions within a specific cultural and economic context.

3.7. Sampling

The sample is defined as the portion of segment of the selected population that is being investigated, which can be either probability sampling – where each unit selected has an equal chance of selection- or non-probability sampling -where the sample is selected on a non-random basis- (Bryman, 2015:187). Sampling is required due to the large population; additionally, there is cost and time limitations and therefore a sample is necessary for this study (Aaker, Kumar, Leone & Day, 2013). The ability to generalise findings beyond the sample is often associated with quantitative research, it becomes difficult to obtain the involvement of the entire population of the study (Bryman, 2015:176).

Non-Probability sampling involves any respondent that meets the criteria for the population to be selected and thus may be statistically inappropriate to generalise the findings; respondents will be selected based on their availability, accessibility to the survey and willingness to participate. Non-probability sampling does not use random selection, meaning each member of the population does not have an equal chance of being selected. Instead, participants are chosen based on accessibility or other characteristics relevant to the research. Non-probability sampling is often used when researchers have limited time, resources, or access to the full population (Creswell, 2009). Convenience sampling is the selection of participants who are readily accessible to the researcher and therefore allows for rapid data collection from South African consumers who are accessible online (Etikan, Musa, & Alkassim, 2016).

Theoretically, simple random sampling is an ideal method as it allows for an equal opportunity to every unit of the population to be included (Given, 2008:725). However, this method is not feasible as a comprehensive list of all South African s will be challenging to obtain. Whilst this method allows for a level of generalisation, it is not absolute, as the randomly selected sample does not guarantee representation of the total population researched (Given, 2008:725). Stratified sampling is ideal for the research as it allows for the comparative analysis of results based on specified characteristic identified, however this method requires detailed knowledge of the population to create the various strata (Given, 2008:799).

Convenience sampling is selected due to its efficiency and feasibility. Given the diverse and widely distributed South African population, reaching every consumer segment would require substantial resources. Convenience sampling allows the researcher to gather a reasonably large sample that can still provide valuable insights into purchase intentions, especially when distributed through digital channels like social media (Etikan *et al.*, 2016).

Due to time and cost limitations, non-probability convenience sampling techniques are selected for this study. Convenience sampling involves the selection of individuals based on their availability and readiness to participate in the study thus allowing for easy inclusion into the study, thus it prioritises simplicity and availability (Given,

2008:562, Bryman 2015:201).

Although generalisability would be beneficial and useful for a quantitative study, this is not the focus of the research. However, the results may be reflective of a similar demographic. Bryman (2015:205) highlights that even when probability sampling is employed the findings can be generalised to the selected population from which the sample was obtained; therefore, in order to generalise the findings to South African consumers a complete defined population needs to be considered which would require a census to be conducted.

Convenience sampling is time-efficient, enabling researchers to collect data quickly and with fewer resources. This is particularly useful in studies involving digital surveys, where data can be gathered from accessible respondents, allowing the research to reach a sizeable number of South African consumers without extensive logistical demands (Bryman, 2016). Convenience sampling can provide useful, initial insights. It enables researchers to test hypotheses and identify preliminary patterns that may guide further, more rigorous studies (Creswell, 2009).

A study which aims for the generalisability of its insights across a large, diverse population like South African consumers would employ a probability sampling method, however, probability sampling methods, such as stratified or random sampling, are cost intensive as they require a large representative sample and logistical support for random selection (Etikan, 2016). Given budget constraints, this study uses non-probability convenience sampling instead. Conducting surveys across diverse, geographically dispersed areas in South Africa can be financially prohibitive, particularly if face-to-face or telephone surveys are involved. Instead, an online survey format is used, which has minimal costs but requires internet access and digital literacy among participants. This choice reduces financial strain but restricts the sample primarily to individuals who are digitally connected. Additionally, this cross-sectional research is time-bound and limited to a short period of 6 weeks for data collection. A longer data collection period could allow for a larger sample.

Given the tight time frame, convenience sampling allows for quicker access to

respondents, particularly through digital channels, compared to probability sampling. The study aims to achieve at least 100 participants of South African consumers above the age of 18 years and achieved a total of 101 participants, which ensured that the findings yield useful insights.

3.8. Research instrument

Quantitative research uses structured instruments and numerical data to ensure consistency and objectivity (Bhandari, 2020). Structured instruments, such as surveys, will be utilised to ensure objective and unbiased data collection; this approach enhances the reliability of the data and facilitates accurate comparison and analysis. Objective measurement of data is crucial to ensure accuracy, reliability, and validity of the findings. Given (2008:372) highlights that objective data collection minimises biases and allows for the statistical analysis of relationships between variables; therefore, objective measurement is necessary to accurately capture the attitudes, norms, and behaviours of South African consumers towards the intention to purchase plant-based alternatives. Bryman (2016) indicates that quantitative research is particularly suited for studies where the objective is to test hypotheses derived from theoretical frameworks through statistical analysis. Quantitative research relies on the use of instruments and procedures that produce consistent and reproducible results, which are essential for testing hypotheses and drawing valid conclusions (Creswell, 2009). The deductive approach of quantitative research usually advises that existing surveys are adapted thereby ensuring validity and reliability, however Ajzen does not provide standardised survey questions but rather focuses on the scales used in measuring each TPB factor. Therefore, the survey questions derived from literature and recommendation from Ajzen on how to structure the questions.

The researcher will objectively measure data using structured instruments such as closed-ended surveys. These surveys will include demographic questions and questions related to attitudes, subjective norms, perceived behavioural control, brand image and sustainability. By using a survey, the researcher can collect consistent and quantifiable data from participants. The data will then be analysed using statistical techniques to test the hypotheses and examine relationships between variables.

3.9. Data collection

The study makes use of a closed ended, self-administered online survey, which will be constructed after extensive review of the literature and aligned with Ajzen's questionnaire construction of TPB. A Google form link will be posted on the researcher's social media platforms, namely Instagram, LinkedIn, Facebook and WhatsApp status. The Survey consists of a demographics section where data related to respondents' socio-demographic characteristics will be asked. The survey will include questions related to the extended TPB factors consisting of statements regarding the attitudes, subjective norms, perceived behavioural control, sustainability and brand image of Fry's. Respondents will be asked to rate their level of agreement with each statement on a 5-point Likert scale, where 1 = Strongly Disagree and 5 = Strongly Agree.

3.10. Data analysis

Descriptive statistics will be conducted to summarise and describe the characteristics of the sample. This provides a comprehensive overview of the sample's demographic profile, including variables such as age, gender, income, education level, and other relevant factors. Descriptive statistics involve the use of measures such as frequencies, percentages, means, medians, modes, standard deviations, and ranges to summarise the data (Creswell, 2009; Bryman, 2012).

These statistics are essential for understanding the distribution and central tendency of the data (Given, 2008). Descriptive statistics also allow the researcher to identify any potential biases or outliers in the data that could affect the validity and reliability of the research findings (Bryman and Bell, 2014).

Scale data will be analysed using correlation analysis to determine the relationships between the hypothesised variables; correlation analysis is a statistical method used to evaluate the strength and direction of the linear relationship between two continuous variables (Bryman and Bell, 2014). This type of analysis is particularly useful when the goal is to understand how variables are related without implying causation.

Correlation analysis helps to validate the hypothesised relationships in the research model by showing whether and how strongly pairs of variables are related (Bryman and Bell, 2014). In the context of this research, correlation analysis will be used to examine the relationship between variables and purchase intention,

3.11. Reliability and validity

Reliability is an important factor in ensuring the consistency, stability and replicability of research. The use of quantitative methods with closed-ended questions enhances the potential for reliable data. A structured closed-ended survey with Likert scale questions was used to support the reliability of this research; this allowed for the use of consistent response options which minimised variability in interpretation among respondents thereby allowing the research to obtain consistent data across respondents (Bhandari, 2023).

To enhance reliability, a pilot survey instrument was conducted prior to data collection. This allowed for the refinement of any ambiguous or confusing questions, ensuring that respondents interpret questions consistently. Pre-testing further helped assess internal consistency, particularly for constructs within the TPB, by confirming that individual survey items are coherent and measure the same underlying factor (Bryman & Bell, 2014). Internal reliability relates to the consistency of results across the questionnaire; if a respondent scores in a particular way for one indicator, then the score should be related to other similar indicators (Bryman, 2014:169).

The use of an online, self-administered survey that was distributed across standardised social media channels ensured uniformity in the data collection process. A consistent method for survey distribution reduces potential biases that could arise from variable survey formats; all participants therefore encountered the same online questionnaire. This standardisation contributed to the elimination of situational variability, enhancing the stability and replicability of the findings (Creswell, 2009). Closed-ended, Likert-scale format further allows for reducing measurement errors, as it limits open-ended interpretations. This reduces the likelihood of random errors in data entry or interpretation, which could otherwise affect the consistency of the results.

Additionally, using well-defined constructs based on TPB, such as attitudes and subjective norms, helps ensure that each question consistently reflects the intended measure, increasing the reliability of the survey's findings (Bryman, 2015).

The use of statistical such as correlation and descriptive statistics enhanced the reliability of the findings by producing objective, replicable data. These methods allow for precise comparisons by examining relationships between variables (Bryman, 2015). Bryman (2015:169) highlights that reliability refers to the consistency undertaken when measuring a concept and thus involves the degree that the same results can be obtained with repeated trials; reliability has three main facets which are: stability, internal reliability and inter-observer consistency.

Stability refers to how consistent results can be replicated over time when the same conditions are applied (Bryman, 2014:169). If the survey is reliable, respondents should provide consistent answers if surveyed again at a different time; consistent results will suggest high stability. Inter-observer consistency is another aspect of reliability that refers to various items within the same test measure the same concept which can be statistically tested using measures like Cronbach's Alpha (Creswell, 2009).

In the context of the attached research report, validity is key to ensuring that the study accurately measures South African Millennials' purchase intentions toward plant-based alternatives and that its findings are meaningful and applicable to real-world settings. Validity encompasses several aspects, including content validity, construct validity, and external validity. Below are the specific measures the research report undertakes to ensure validity.

Content validity is the extent the survey items cover all relevant aspects of the constructs being measured (Creswell, 2009). To ensure content validity the questionnaire is developed based on the TPB model. This allows for the alignment of critical factors such as attitudes, subjective norms, and perceived behavioural control. Additionally, the survey includes items on sustainability and brand image.

Construct validity assesses how well the survey items represent the theoretical concepts they are intended to measure (Bryman & Bell, 2014). To achieve construct validity the survey is structured around the established constructs in TPB using Likert scales, this ensures alignment with the theoretical framework (Bryman & Bell, 2014). The use of straightforward, clear language allows for respondents to easily comprehend the questions, increasing the likelihood that their responses accurately reflect their true intentions and attitudes towards plant-based alternatives (Given, 2008).

External validity relates to the degree to which the findings can be generalised. The study uses a convenience sampling technique, which limits the ability to generalise the findings to all South African consumers however may still provide insights applicable to similar demographic segments interested in sustainability and plant-based alternatives (Bryman, 2016).

3.12. Limitations

- Due to time and cost limitations, the intended sample size for this research is 40 participants. This small sample size may reduce the power and precision of the findings thus the ability to generalise the results to the broader population of South Africans is diminished.
- The study uses non-probability convenience sampling. This may introduce bias as it relies on the availability and willingness of participants, potentially limiting the representativeness of the sample.
- The use of online surveys may exclude individuals without internet access, potentially biasing the sample towards more tech-savvy or younger people.

3.13. Delimitations

- The study specifically focuses on South African s, chosen for their increased purchasing power and sensitivity to sustainability issues.
- The research is delimited to understanding the influence of sustainability on the purchase intentions towards plant-based alternatives, specifically Fry's.
- The study employs standardised closed-ended surveys to ensure objective and unbiased data collection which helps in maintaining consistency but may limit the

depth of responses obtained.

- The study will specifically examine attitudes, subjective norms, perceived behavioural control, product knowledge, and purchasing behaviour related to sustainability, narrowing the focus to these factors only.
- The study employs online surveys, allowing for broad reach and easy data collection but excluding those without internet access.

3.14. Ethical considerations

Ethical considerations are fundamental to the integrity of research, ensuring that participants' rights are respected and that the study adheres to principles of transparency, fairness, and respect for all involved. Ethical issues involving both the researcher and respondents will be considered in order to ensure that the research study is of a professional standard whilst adhering to all ethical principles which are essential for the practice of research. Ethical principles in research are important to ensure that no harm is done to respondents, there is no lack of informed consent, no invasion of privacy and there is no deception regarding the research and the use of its findings (Bryman & Bell, 2014:120).

Informed consent is a critical aspect of ethical research, ensuring that participants are fully aware of the study's purpose, procedures, potential risks, and their rights before agreeing to take part (Creswell, 2009). It involves providing participants with clear, understandable information about what their participation entails, allowing them to make an informed decision. Given the digital nature of the survey, the first question requests electronic consent without which the respondents are unable to progress further. Respondents are required to acknowledge they have read and understood the consent information before proceeding. This step ensures that participants are aware that their participation is voluntary and that they have the right to withdraw at any stage without penalty. According to Bryman and Bell (2015), this type of transparent communication helps to build trust between the researcher and the participants, which is crucial in online research where direct interaction is limited.

As part of the questionnaire, the researcher will ensure that participants are issued with a consent form, to obtain informed permission for use of their responses in this

research study. The following will be supplied:

- An explanation regarding the purpose of the research and the use of the data obtained.
- Participation in the study is completely voluntary, and participants will not be coerced nor incentivised for their participation.
- The confidentiality and anonymity of participants would be maintained throughout the duration of the study, they would therefore be referred to in the study by their participant number.
- Participants would be able to withdraw at any point of the study or refuse to answer any questions posed to them in the interview.
- Permission to use their responses will be obtained.

Confidentiality refers to the protection of participants' identities and personal information, ensuring that the data provided cannot be linked back to individual participants (Given, 2008). Data will be kept confidential and properly stored; personal identifiers such as their names and contact information will not be collected in order to protect the privacy of respondents for the purpose of this research data will be securely kept for a minimum of 5 years.

Voluntary participation means that participants choose to be part of the study without coercion or undue pressure, and they retain the right to withdraw their participation at any time without facing any negative consequences. This ensures that participants feel free to participate or not, respecting their autonomy and freedom of choice (Creswell, 2009). The principle of voluntary participation is a critical aspect of this research. It was communicated that respondents may choose not to complete the survey or wish to stop at any point, they can do so without any consequence. This ensures that the data collected reflects genuine and voluntary responses, increasing the reliability of the findings.

Avoiding harm means that researchers have an obligation to protect participants from physical, emotional, or psychological distress that might result from their participation in the study (Resnik, 2020). This is particularly important in studies that ask for personal opinions or attitudes, as sensitive topics could potentially cause discomfort

or anxiety. The risk, however, related to this research is relatively low compared to more intrusive research methods, although consideration had been taken to ensure that questions are worded sensitively and that participants do not feel judged or uncomfortable sharing their opinions.

Transparency involves providing a clear and honest account of the research process, including data collection methods, analysis, and potential conflicts of interest. Integrity in reporting ensures that findings are presented accurately, without manipulation or bias, reflecting the true nature of the data collected (Bryman, 2016). Transparency is critical in both the data analysis and the reporting of findings. The methodology, sampling methods, and data limitations should be clearly reported in the final study to allow readers to evaluate the validity of the findings (Resnik, 2020). Such transparency is essential for maintaining the credibility of the research within the academic community.

This research study required the approval from the IIE Institutes ethics committee to ensure that the study adheres to ethical standards. This process involves a review of the study's ethical considerations, participant protections, and compliance with applicable regulations. Since this research study required the collection of data from human participants, obtaining ethical clearance is essential to ensure that the research design meets established standards for participant protection. To secure the ethical approval for this study is obtained, the researcher submitted a comprehensive ethics application outlining the study's purpose, methods, consent process, and measures for protecting participant data. This approval not only ensured that the study meets ethical standards but also provides credibility when presenting findings.

The Belmont Report (1979) highlights the three fundamental guiding principles to be adhered to for ethical research, they are:

1. Respect for persons which requires treating individuals as autonomous agents capable of decision-making, necessitating fully informed consent from participants and safeguarding those with diminished autonomy through exclusion or protection measures. This will be achieved by ensuring participants receive clear, comprehensive information about the study and informed,

voluntary consent is obtained. Additionally, transparency will be maintained, and thorough documentation of the consent process will be kept.

2. Beneficence requires researchers to do no harm and prioritise minimising potential harm and maximising potential benefits. This will be achieved by obtaining approval from an ethical committee to ensure all measures are adequate, identifying and minimising any potential risks to participants and ongoing monitoring to address any emerging risks throughout the study.

3. Justice necessitates that researchers consider who benefits from the research and who bears its burdens, ensuring that benefits are not solely enjoyed by privileged individuals and that the burdens, such as inclusion in samples, are not unfairly borne by those unable to opt out or decline participation. This is achieved by ensuring the research benefits are accessible to all and allowing all participants the ability to opt out without any negative consequences.

3.15. Time horizon

	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov
Research proposal										
Literature review										
Methodology										
Data collection										
Data analysis										
Compile and submit										

For this research study a cross-sectional design will be used indicating that the data is collected at a single point in time, this will therefore provide a “snapshot” of South African consumers at the time of the survey (Setia, 2016).

3.16. Conclusion

The positivist paradigm, rooted in scientific inquiry and empirical observation enables the objective measurement and analysis of South African consumers' purchase intentions toward plant-based alternatives. By focusing on observable and quantifiable data, the positivist approach minimises researcher bias and prioritises replicability and objectivity in testing hypotheses derived from the TPB. Through structured survey responses and statistical analysis, this paradigm provides a reliable foundation for understanding relationships between attitudes, subjective norms, perceived behavioural control, and additional factors such as sustainability and brand image. This objective stance allows for a systematic examination of consumer intentions, ensuring that findings are based on empirical evidence, enhancing the validity and rigor of this research. The next chapter will present the results obtained from the data collection.

CHAPTER 4: DATA ANALYSIS

4.1. Introduction

Chapter 4 presents the data analysis and interpretation of the results obtained from the survey conducted with South African consumers regarding their intentions to purchase plant-based alternatives. This chapter begins with an overview of the sample demographics, providing context for the participants' profiles. The analysis then explores key variables based on the extended TPB framework.

Using descriptive statistics, factor analysis and correlation analysis, this chapter examines the relationships between these variables and consumers' intention to purchase plant-based alternatives. The findings will offer insights into how these factors collectively influence consumer behaviour, highlighting trends and patterns relevant to the research objectives. This analysis provides a foundation for interpreting the results within the study's theoretical framework, setting the stage for the discussion of implications in the next chapter.

4.2. Descriptive statistics

The following section presented the descriptive statistics for the sample respondents. Percentages have been rounded to the nearest 1% for the presentation of the demographic profile of respondents.

4.2.1. Lifestyle

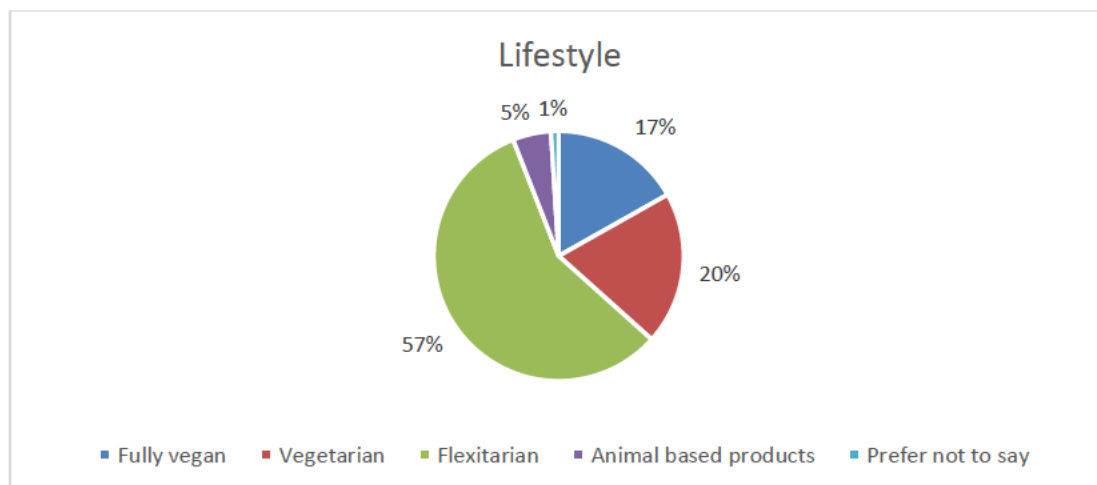


Figure 4.1: Lifestyle

From figure 4.1 it can be identified that the majority of respondents followed a flexitarian lifestyle (57%), followed by vegetarian (20%) and fully vegan (17%). The predominance of flexitarian respondents reflects broader trends toward flexible, plant-based eating habits, where individuals aim to reduce meat consumption without fully eliminating it. This lifestyle appeals to consumers who prioritise environmental sustainability, health benefits, or ethical considerations but prefer to maintain some flexibility in their diets.

The relatively lower percentages of vegetarian and vegan respondents indicate that while there is a growing interest in plant-based diets, complete abstinence from animal products remains less common. Flexitarians represent a significant consumer segment for plant-based alternatives as they often seek products that closely mimic the taste and texture of meat, aligning with their preference for balance over exclusivity in food choices. This insight underscores the importance of targeting flexitarians in marketing and product development for plant-based brands like Fry's, as they represent a key demographic driving the growth and acceptance of plant-based alternatives.

4.2.2. Age

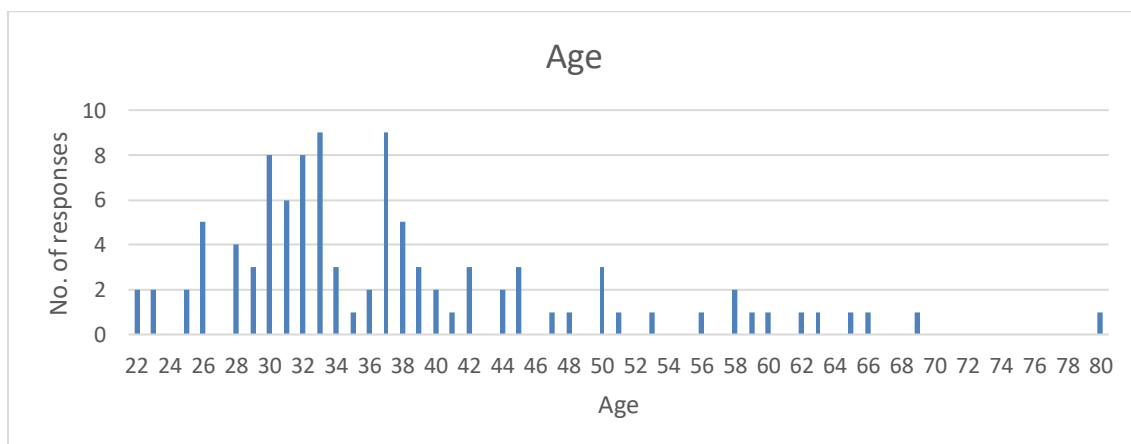


Figure 4.2: Age

Figure 4.2 shows that the majority of respondents were between 26 and 42 years old. This aligns with findings of the literature, which suggest that millennials and younger generations are more concerned about sustainability and health-conscious eating habits (Nielsen, 2018). Studies show that millennials, in particular, exhibit strong environmental awareness and are more likely to support brands aligned with their

ethical and sustainability values (Nielsen, 2018). This age group has been at the forefront of driving demand for plant-based alternatives due to their heightened concern for environmental issues, animal welfare, and personal health (Deloitte, 2021).

As reflected in previous research, these consumers often seek out brands that demonstrate transparency and authenticity in their sustainability practices (Yang & Battocchio, 2020). Therefore, there is a strong representation of this age group within the study's sample that suggests younger consumers are instrumental in the growing acceptance and popularity of plant-based products. This demographic's purchasing decisions are increasingly influenced by their desire to make positive environmental and health impacts, making them an essential focus for brands like Fry's aiming to capitalise on the shift toward sustainable consumer behaviour.

4.2.3. Gender

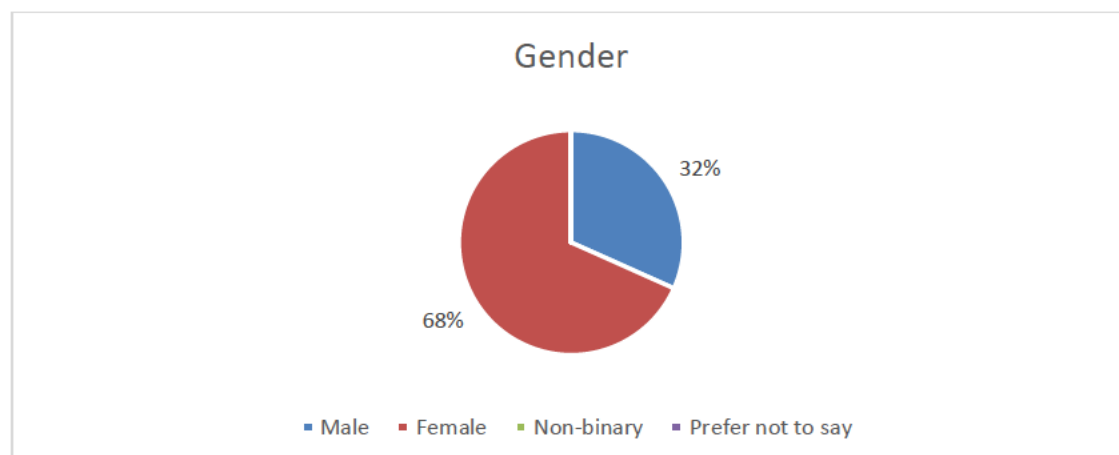


Figure 4.3: Gender

It can be identified from Figure 4.3 that there were more female respondents (69%) than males (32%). This could indicate that there is a greater degree of concern amongst female respondents regarding plant-based alternatives, as such the results presented in this research report are focused towards the concerns of females and what they identify as important. Previous research indicates that women are generally more likely to adopt sustainable and plant-based dietary practices and tend to prioritise health, ethical, and environmental considerations in their food choices more than men, making them a key demographic for plant-based products (Nielsen, 2018; Dagevos &

Voordouw, 2013). Additionally, women are often more receptive to dietary changes for health and environmental reasons, aligning with the motivations behind flexitarian, vegetarian, and vegan lifestyles.

This trend highlights the importance of considering gender when targeting plant-based consumers, as women are not only more likely to adopt plant-based diets but also influence household food purchases. For brands like Fry's, these insights can inform marketing strategies that resonate with female consumers' values, emphasising health, ethical, and environmental benefits in messaging and product positioning.

4.2.4. Occupation

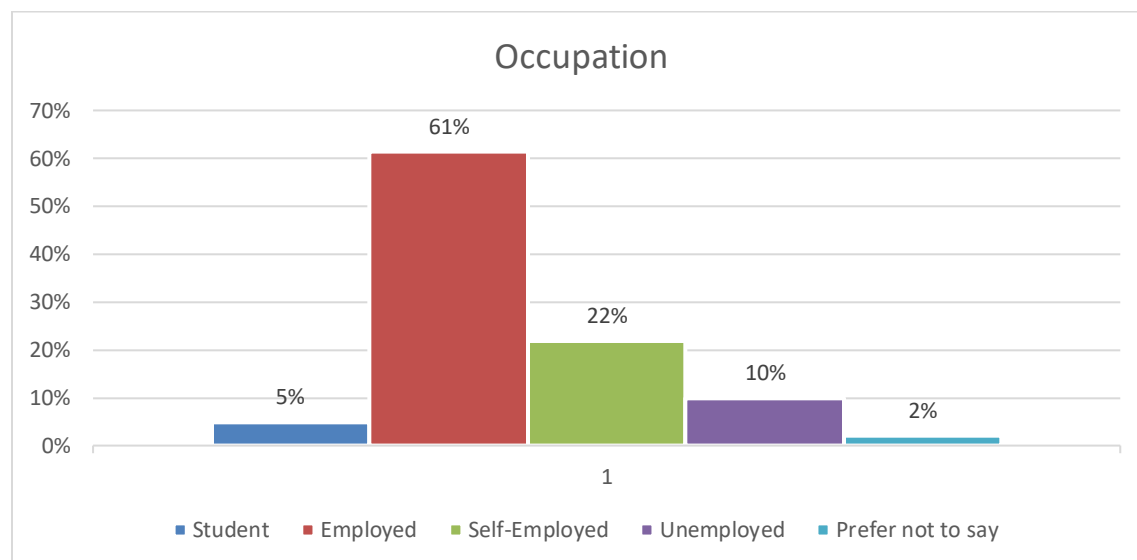


Figure 4.4: Occupation

As can be seen in Figure 4.4 majority of respondents are employed (61%) or self-employed (22%) which directly correlates to the high income and education level. 10% of respondents were unemployed, whilst (5%) were students and (2%) preferred not to say.

The high proportion of respondents who are employed or self-employed correlates with higher income (Figure 4.6) and education levels (Figure 4.5), as these factors are often linked to greater awareness and adoption of sustainable practices. Previous research suggests that individuals with higher income and education levels tend to prioritise sustainability in their purchasing decisions, as they have both the financial means and informational resources to support environmentally conscious choices

(Granato, Fischer & Trijp, 2022). This demographic is more likely to purchase plant-based products due to an increased understanding of the environmental and health impacts of their food choices (Meyer, 2015).

The smaller percentages of unemployed respondents (10%) and students (5%) may indicate limited financial resources, which can be a barrier to purchasing plant-based products that often come at a premium (Warner, 2024). These insights underscore the importance of targeting marketing efforts toward employed and financially stable consumers who are more likely to prioritise sustainable food options, as well as considering affordability strategies for reaching broader consumer segments

4.2.5. Education

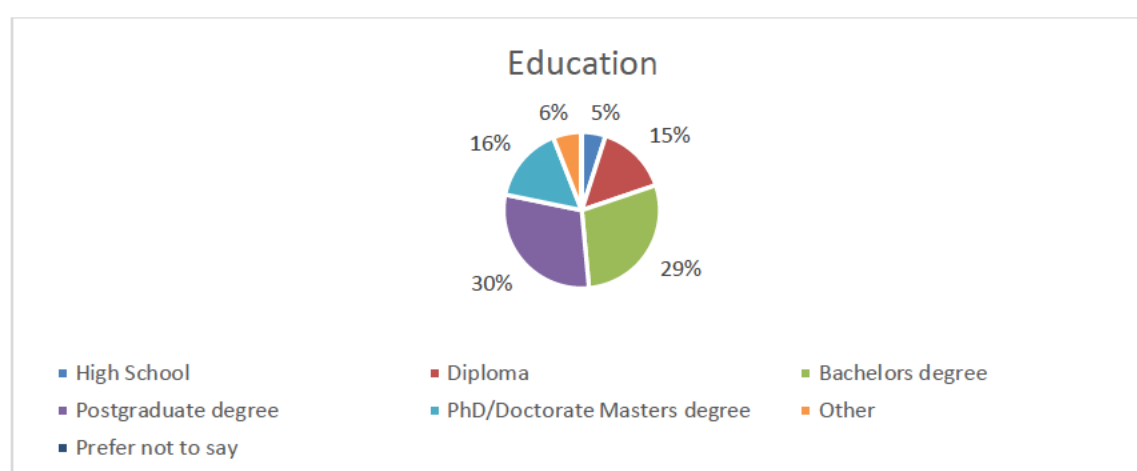


Figure 4.5: Education

From Figure 4.5, it can be identified that the majority of respondents (90%) were well educated, with tertiary qualifications, namely, 16% with doctorates and/or master's degrees, 30% with postgraduate degrees, 29% with bachelor's degrees, and 15% with diplomas. Only 5% of respondents had indicated that their highest education level was a high school pass.

The high level of education among respondents (90% holding tertiary qualifications) is consistent with research suggesting that education positively influences awareness and adoption of sustainable practices. Educated consumers are generally more informed about the environmental, health, and ethical implications of their food choices and are thus more likely to adopt plant-based diets (Meyer, 2015; Granato *et al.*, 2022). Higher education often correlates with a greater understanding of sustainability issues

and an increased likelihood to engage in pro-environmental behaviour, as individuals are more aware of the long-term impacts of their consumption choices (Ainhoa Irazusta-Garmendia, 2023).

This finding reinforces the importance of educational background in shaping attitudes toward sustainability and plant-based diets. Brands like Fry's can leverage this insight by targeting campaigns toward educated consumers, who are more receptive to sustainability messaging. Additionally, the high level of educational attainment in the sample suggests that the audience may be particularly receptive to detailed, informative marketing that emphasises the health and environmental benefits of plant-based products.

4.2.6. Income

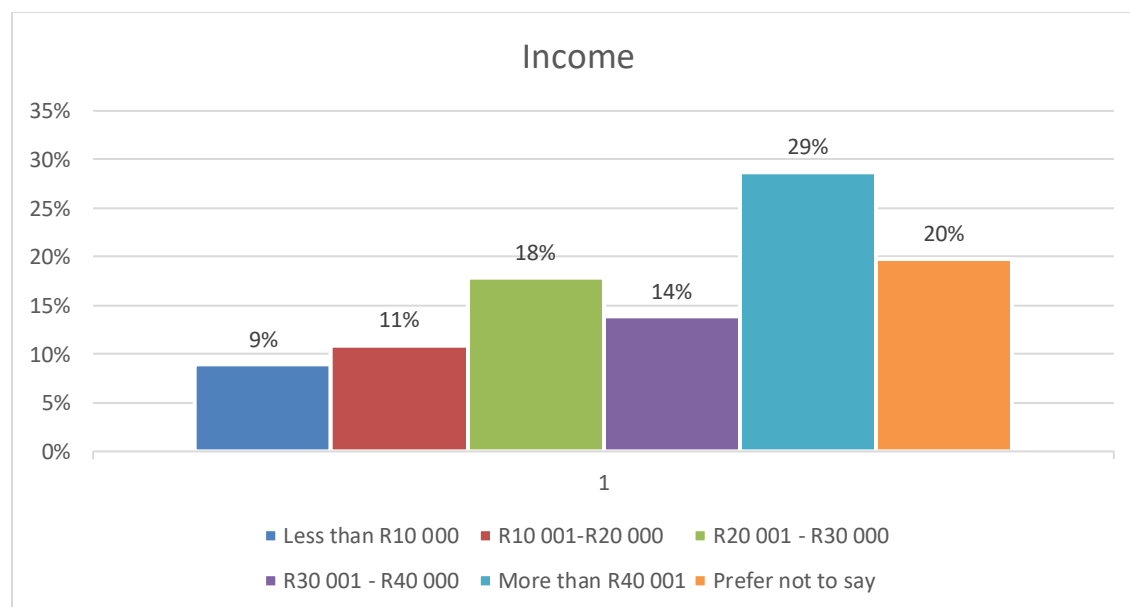


Figure 4.6: Income

Figure 4.6 indicates that the majority of respondents (29%) earned more than R40 001; this was followed by 20% of respondents who indicated that they preferred not to say. The high-income level of respondents directly relates to the high level of education of respondents as higher educational attainment (Figure 4.5) is frequently associated with higher income. This relationship is consistent with findings in the literature, which suggest that individuals with greater income are more likely to prioritise sustainability in their purchasing decisions due to their increased purchasing power and access to information (Granato, Fischer & Trijp, 2022). Higher-income

consumers are more inclined to purchase premium products, including plant-based options, which are often priced higher than conventional animal-based foods (Warner, 2024). The 20% of respondents who preferred not to disclose their income level may reflect privacy concerns or a diverse range of income among respondents. For brands like Fry's, this insight highlights an opportunity to target financially stable, educated consumers who may be more receptive to plant-based products marketed on the basis of health and environmental benefits.

4.3. Factor analysis

This section explores the perceived importance of factors related to the intention to purchase plant-based alternatives.

4.3.1. Extended TPB factors

A principal components analysis (PCA) was run on a 23-question questionnaire that measured the purchase intention of 101 participants. Inspection of the correlation matrix showed that all variables had at least one correlation coefficient greater than 0.3. The overall Kaiser-Meyer-Olkin (KMO) measure was 0.79 with individual KMO measures all greater than 0.7, classifications of 'middling' to 'meritorious' according to Kaiser (1974). Bartlett's Test of Sphericity was statistically significant ($p < .005$), indicating that the data was likely factorisable.

PCA revealed six components that had eigenvalues greater than one and which explained 36,2%, 11,6%, 9,6%, 6,3%, 5,9% and 4,6% of the total variance, respectively. Visual inspection of the scree plot indicated that six components should be retained (Cattell, 1966). This was further supported by the results of a Parallel Analysis, which showed only six components with eigenvalues exceeding the corresponding criterion for a randomly generated data matrix of the same size values in addition, a six-component solution met the interpretability criterion. As such, six components were retained.

The six-component solution explained 74.2% of the total variance. Direct Oblimin with Kaiser Normalization was employed to aid interpretability. The interpretation of the data was consistent with the purchase intention attributes the questionnaire was designed to measure with strong loadings of 'attitudes' items on Component 1, 'current

behaviour' items on Component 2, 'subjective norms' items on Component 3, 'perceived behaviour control' on component 4, 'brand image' on component 5 and 'sustainability' items on Component 6.

The results of the PCA are presented in Table 4.1 below.

Table 4.1: Principal Component Analysis for TPB survey items

Plant-based alternative purchase intention	Factor Loadings					
Factor Label	Attitude	Current behaviour	Subjective Norms	Perceived behavioural Control	Brand Awareness	Sustainability
Attitude						
Buying PBA is acceptable	0,841					
Buying PBA is the better choice	0,816					
Buying PBA is a good idea	0,805					
Buying PBA is when shopping would be pleasant	0,775					
PBA are more sustainable than meat based products	0,729					
PBA are the way of the future for the environmental sustainability of the world	0,667					
Current behaviour						
I am aware of Fry's		0,928				
I can easily recognise Fry's		0,904				
I currently purchase PBA		0,630				
I have previously purchased PBA		0,615				
Subjective norms						
My friends think that I should purchase PBA			-0,805			
The people in my life whose opinions I value purchase PBA			-0,781			
My family thinks I should purchase PBA			-0,765			
The people in my life whose opinions I value approve of me purchasing PBA			-0,711			
Perceived behavioural control						
Purchasing PBA is up to me				-0,340		
PBA are not too expensive for me				-0,797		
I can find PBA easily in shops				-0,706		
Brand image						
I prefer to purchase Fry's					0,867	
Fry's PBA are of high quality					0,800	
Sustainability						
I prefer to purchase products that are sustainable						0,850
A sustainable lifestyle is important to me						0,837
I can cook PBA easily						0,546

Eigenvalue	7.968	2.558	2.108	1.387	1.283	1.107
Cronbach's alpha reliability coefficient	0.934	0.818	0.878	0.531	0.778	0.683
Mean value (Standard deviation)	4.13 (±0.917)	4.41 (±0.917)	3.31 (±0.917)	3.81 (±0.917)	3.49 (±0.917)	4.43 (±0.917)

A survey was employed to measure different, underlying constructs. Component 1, 'attitudes', consisted of six questions. The scale had a high level of internal consistency, as determined by a Cronbach's alpha of 0.934. Component 2, 'current behaviour', consisted of four questions. The scale had a high level of internal consistency, as determined by a Cronbach's alpha of 0.818. Component 3, 'subjective norms', consisted of four questions. The scale had a high level of internal consistency, as determined by a Cronbach's alpha of 0.878. Component 4, 'perceived behavioural control', consisted of three questions. The scale had a medium level of internal consistency, as determined by a Cronbach's alpha of 0.531. Component 4, 'brand image', consisted of two questions. The scale had a high level of internal consistency, as determined by a Cronbach's alpha of 0.775. Component 5, 'sustainability', consisted of three questions. The scale had a high level of internal consistency, as determined by a Cronbach's alpha of 0.663.

The component correlation matrix in Table 4.2 below depicts the correlations between each variable and a component. The correlation between components is moderate and justifies retention of the results because only five of the correlations exceed the value of .25 (Sabharwal & Pandey, 2017).

Table 4.2: Component Correlation Matrix

Component Correlation Matrix						
Component	Attitude	Current behaviour	Subjective norms	Perceived behavioural control	Brand image	Sustainability
Attitude	1,000	0,288	-0,416	-0,246	0,071	0,346
Current behaviour	0,288	1,000	-0,116	-0,217	0,197	0,154
Subjective norms	-0,416	-0,116	1,000	0,149	-0,156	-0,128
Perceived behavioural control	-0,246	-0,217	0,149	1,000	-0,146	-0,034
Brand image	0,071	0,197	-0,156	-0,146	1,000	-0,035
Sustainability	0,346	0,154	-0,128	-0,034	-0,035	1,000

4.4. Correlations

The following section explores correlations between factors identified. A Pearson Correlation was run to assess the relationship between ‘attitudes’, ‘subjective norms’, ‘perceived behavioural control’, ‘brand image’, ‘sustainability’, ‘current behaviour’ and purchase intention of plant-based alternatives. There were 101 respondents recruited. The results of the correlation analysis are presented in Table 4.3 below.

Table 4.3: Pearson Correlation Analysis

		Intention to purchase in future	Attitude	Current behaviour
Lifestyle	Correlation Coefficient	-.410**		
	Sig. (2-tailed)	0,000		
Gender	Correlation Coefficient	-0,006		
	Sig. (2-tailed)	0,956		
Occupation	Correlation Coefficient	0,051		
	Sig. (2-tailed)	0,613		
Qualification	Correlation Coefficient	-0,087		
	Sig. (2-tailed)	0,389		
Income	Correlation Coefficient	-0,150		
	Sig. (2-tailed)	0,137		
Attitude	Correlation Coefficient			.495**
	Sig. (2-tailed)			0,000
Current behaviour	Correlation Coefficient	.676**		
	Sig. (2-tailed)	0,000		
Subjective norms	Correlation Coefficient		.472**	.258*
	Sig. (2-tailed)		0,000	0,011
Perceived behavioural control	Correlation Coefficient	.365**		.333**
	Sig. (2-tailed)	0,000		0,001
Brand image	Correlation Coefficient	0,063		0,188
	Sig. (2-tailed)	0,536		0,063
Sustainability	Correlation Coefficient	.325**		.229*
	Sig. (2-tailed)	0,001		0,022

** Correlation is significant at the 0.01 level (2-tailed)

A moderate negative relationship exists between ‘Lifestyle’ and ‘Intention to purchase plant-based alternatives’ ($r=-0.410$; $p\leq 0.05$), however no further relationships exist between sociodemographic elements and intention to purchase plant-based alternatives. A moderate positive relationship exists between ‘attitudes’ and ‘subjective norms’ ($r=0.472$; $p\leq 0.05$). ‘Current behaviour’ presented a moderate positive relationship with ‘attitudes’ ($r=0.495$, $p\leq 0.05$) and weak positive relationships with ‘subjective norms’ ($r=0.258$, $p=0.011$), ‘perceived behaviour control’ ($r=0.333$;

$p=0.001$) and 'sustainability' ($r=0.229$; $p=0.022$). Statistically significant positive relationships were found between 'intention to purchase plant-based alternatives' and 'current behaviour' ($r=0.676$; $p\leq 0.05$), which was a strong relationship, 'perceived behavioural control' ($r=0.365$; $p\leq 0.05$), a weak relationship and 'sustainability' ($r=0.325$, $p=0.001$) a weak relationship. Interestingly, 'brand image' did not result in statistically significant relationships with either 'current behaviour' nor 'intention to purchase plant-based alternatives.'

4.5. Conceptual framework and hypotheses

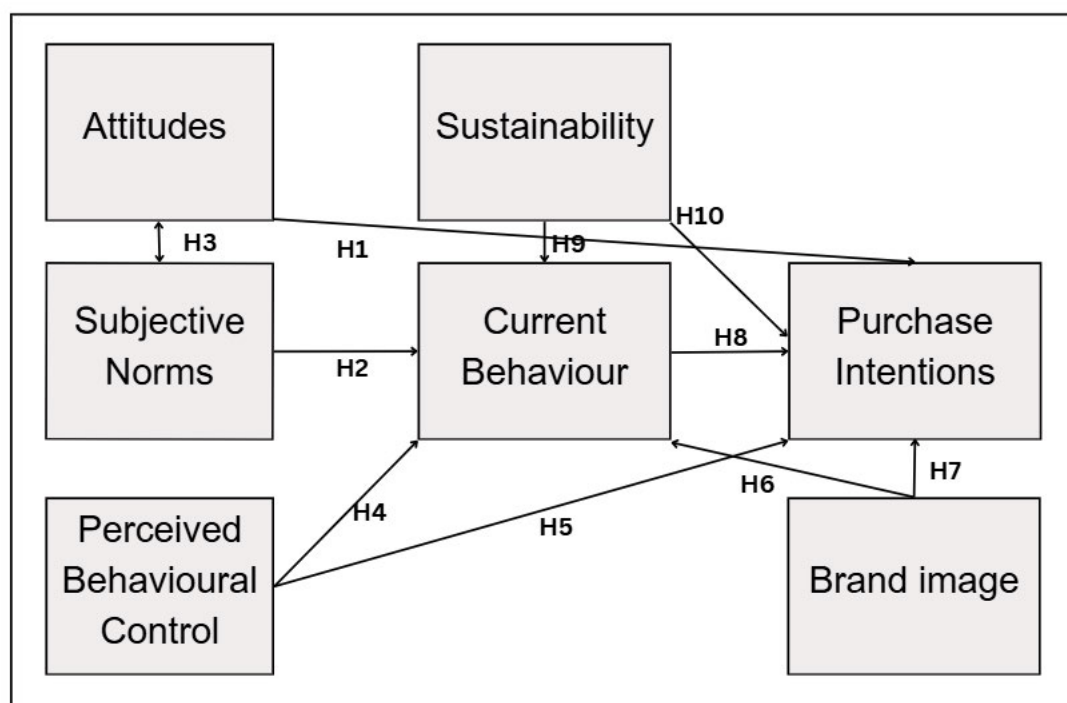


Figure 4.7: Conceptual framework for extended TPB.

Figure 4.7 presents the conceptual model based on the extended TPB. Based on the model a set of hypotheses were derived and tested through factor analysis (as presented in Chapter 3). Table 4.4 below presents the outcome of hypotheses.

Table 4.4: Outcome of hypotheses

Hypothesis	Null hypothesis	Outcome
H1: Attitudes will positively effect the purchase intentions of South African consumers towards plant-based alternatives.	H01: There is no statistically significant relationship between attitudes and the purchase intentions of South African consumers towards plant-based alternatives.	Reject null hypothesis and accept alternative hypothesis.
H2: Subjective norms will positively effect the current behaviour of South African consumers towards plant-based alternatives.	H02: There is no statistically significant relationship between subjective norms and South African consumers current behaviour towards plant-based alternatives.	Reject null hypothesis and accept alternative hypothesis.
H3: There is a statistically significant relationship between attitudes and subjective norms.	H03: There is no relationship between attitudes and subjective norms.	Reject null hypothesis and accept alternative hypothesis.
H4: Perceived behavioural control will positively affect the current behaviour of South African consumers.	H04: There is no statistically significant relationship between perceived behavioural control and South African consumers current behaviour towards plant-based alternatives.	Reject null hypothesis and accept alternative hypothesis.
H5: Perceived behavioural control will positively effect South African consumers intention to purchase plant-based alternatives.	H05: There is no statistically significant relationship between perceived behavioural control and South African consumers intention to purchase plant-based alternatives.	Reject null hypothesis and accept alternative hypothesis.
H6: Brand image will positively effect South African consumers intention to purchase plant-based alternatives.	H06: There is no statistically significant relationship between brand image and South African consumers intention to purchase plant-based alternatives.	Fail to reject null hypothesis
H7: Brand image will positively effect the current behaviour of South African consumers.	H07: There is no statistically significant relationship between brand image and South African consumers current behaviour.	Fail to reject null hypothesis
H8: Current behaviour will positively effect South African consumers intention to purchase plant-based alternatives.	H08: There is no statistically significant relationship between current behaviour and South African consumers intention to purchase plant-based alternatives.	Reject null hypothesis and accept alternative hypothesis.
H9: Sustainability will positively effect the current behaviour of South African consumers	H09: There is no statistically significant relationship between sustainability and South African consumers current behaviour.	Reject null hypothesis and accept alternative hypothesis.
H10: Sustainability will positively effect the intention to purchase of South African consumers	H010: There is no statistically significant relationship between sustainability and South African consumers intention to purchase plant-based alternatives.	Reject null hypothesis and accept alternative hypothesis.

H1 was confirmed thereby supporting the hypothesised relationship between attitude and purchase intentions of South African consumers. This was supported by a standardised path coefficient of .495 ($p=000$), indicating a moderately positive relationship. Therefore, we can reject the null hypothesis and accept the alternative hypothesis.

H2 was confirmed thereby supporting the hypothesised relationship between subjective norms and current behaviour of South African consumers. This was supported by a standardised path coefficient of .258 ($p=0.11$), indicating a weak positive relationship. Therefore, we can reject the null hypothesis and accept the alternative hypothesis.

H3 was confirmed thereby supporting the hypothesised relationship between attitude and subjective norms of South African consumers. This was supported by a standardised path coefficient of .472 ($p=0.00$), indicating a moderate positive relationship. Therefore, we can reject the null hypothesis and accept the alternative hypothesis.

H4 was confirmed thereby supporting the hypothesised relationship between attitude and subjective norms of South African consumers. This was supported by a standardised path coefficient of .333 ($p=0.01$), indicating a weak positive relationship. Therefore, we can reject the null hypothesis and accept the alternative hypothesis.

H5 was confirmed thereby supporting the hypothesised relationship between attitude and subjective norms of South African consumers. This was supported by a standardised path coefficient of .365 ($p=0.00$), indicating a weak positive relationship. Therefore, we can reject the null hypothesis and accept the alternative hypothesis.

H6 Brand image did not affect current behaviour. Fry's has no effect on purchase behaviour. No statistically significant relation. Fail to reject the null hypothesis.

H7 Brand image did not affect intention to purchase. Fry's has no effect on purchase behaviour. No statistically significant relation. Fail to reject the null hypothesis.

H8 was confirmed thereby supporting the hypothesised relationship between current behaviour and intention to purchase of South African consumers. This was supported by a standardised path coefficient of .676 ($p=0.00$), indicating a strong positive relationship. Therefore, we can reject the null hypothesis and accept the alternative hypothesis.

H9 was confirmed thereby supporting the hypothesised relationship between sustainability and current behaviour of South African consumers. This was supported by a standardised path coefficient of .325 ($p=0.01$), indicating a weak positive

relationship. Therefore, we can reject the null hypothesis and accept the alternative hypothesis

H10 was confirmed thereby supporting the hypothesised relationship between sustainability and current behaviour of South African consumers. This was supported by a standardised path coefficient of .229 ($p=0.022$), indicating a weak positive relationship. Therefore, we can reject the null hypothesis and accept the alternative hypothesis

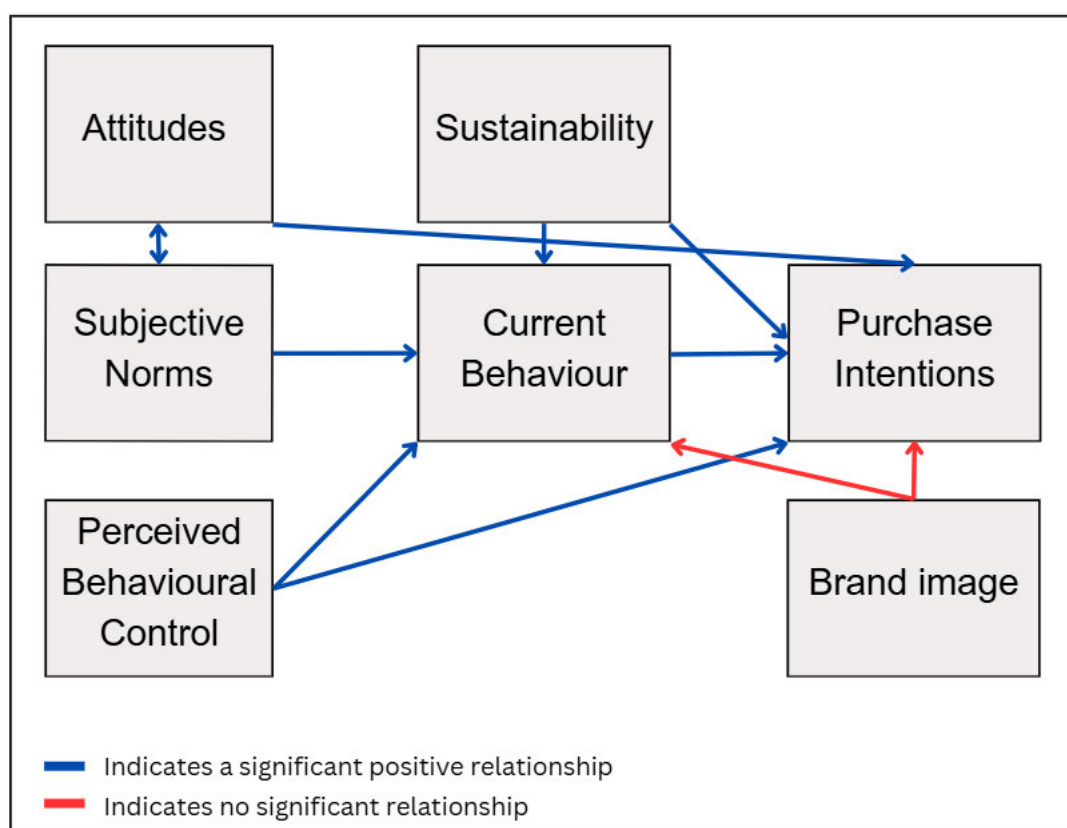


Figure 4.8: Relationship between extended TPB factors and intention to purchase plant-based alternatives

4.6. Conclusion

Chapter 4 provides an analysis of the survey data collected from South African consumers. It examines their intentions to purchase plant-based alternatives with grounding in the TPB. This chapter used descriptive statistics to present demographic insights, highlighting the sample's predominantly flexitarian lifestyle, which aligns with

global trends in reducing meat consumption without fully committing to excluding it. The analysis showed that majority of respondents were younger, educated, and predominantly female, reflecting the demographic segments most inclined toward sustainable food choices.

Factor analysis validated the TPB constructs alongside the additional variables of sustainability and brand image. Six primary components were identified, with strong internal consistency across the majority of constructs, confirming the questionnaire's reliability and the alignment of survey items with intended factors.

The correlation analysis revealed key relationships, underscoring that attitudes and current behaviour significantly impact purchase intentions, while brand image alone did not a significant influence purchase intention. The hypothesis testing supported several extended TPB relationships, with sustainability and current behaviour showing positive effects on purchase intentions, validating the importance of environmental consciousness in influencing consumer choices. Notably, the study found that brand image alone did not significantly affect purchase intention, suggesting that brand image must align with other motivational factors, such as health benefits and sustainability, to drive consumer interest.

CHAPTER 5: RECOMMENDATIONS

5.1. Introduction

The study used a closed ended, self-administered online survey distributed on social media platforms. The survey was developed with grounding in the TPB and extended to include sustainability and brand image. Convenience sampling was employed, with a target of reaching 100 South African consumers above the age of 18. This sample was chosen to provide insight into the South African consumer landscape while acknowledging budget and time limitations. 101 responses were collected, achieving the target sample size for analysis. Descriptive statistics were used to outline the demographic characteristics of the sample and correlation analysis examined the relationships between the TPB constructs and additional variables like sustainability and brand image. Factor analysis was conducted to verify the validity of constructs within the extended TPB framework. The factor analysis supported the underlying structure of the TPB model. The factor loadings confirmed that survey items designed to measure each TPB construct were indeed aligned, contributing to the reliability and construct validity of the study's findings.

Chapter 5 will present and discuss some of the key findings of the literature and study offering recommendations for brand strategy based on these key elements. This chapter will also address the limitations of the study and suggest potential areas for future research, ensuring that the study's insights contribute to both academic knowledge and practical applications.

5.2. Findings from Existing Literature

Sustainability and environmental impact of food production:

- Currently the food production system heavily impacts the environment contributing to deforestation, water pollution and greenhouse gas emissions; this is largely driven by animal agriculture.
- Resultingly sustainable practices such as a shift towards plant-based alternatives are increasingly viewed as essential for mitigating these environmental issues.
- Environmental issues have gained an international focus with policies and laws being developed to curb its long term impact. Sustainability has therefore

gained popularity to ensure that future generations are able to meet their needs without being compromised processes that meet current needs.

Shift toward plant-based diets:

- Environmental, ethical, and health concerns are driving consumer interest in plant-based diets, which are considered more sustainable and eco-friendlier than traditional meat consumption.
- The rise of flexitarian diets among consumers represents a transition toward reducing meat consumption and embracing plant-based alternatives. This contributes to the sustainability focus and the reduction of the environmental footprint associated with animal agriculture.
- Consumers are also considering the health benefits associated with plant-based diets such as lower risk of chronic diseases, such as heart disease and diabetes.

Consumer preferences for sustainable purchases:

- Sustainability and green purchasing behaviours are increasingly influencing consumer choices and brand loyalty.
- There is a notable shift in consumer behaviour, driven by younger consumers, toward supporting brands with strong environmental credentials.

Demographic findings associated with purchasing plant-based alternatives:

- Gen Z consumers show high environmental consciousness, motivated by a sense of urgency to address climate change. This demographic often base purchasing decisions on a brand's sustainability practices and may pay a premium for eco-friendly products.
- Millennials consumers are seen as the pioneers of mainstream sustainable consumerism, millennials prioritise eco-friendly choices when affordable and convenient. They tend to support brands with transparent sustainability efforts, are drawn to plant-based diets for environmental and health benefits.
- Higher levels of education are positively associated with environmental awareness and pro-environmental behaviour. Educated consumers tend to understand the impact of their choices on sustainability, making them more

likely to support eco-friendly products.

- Higher-income consumers are more likely to afford and choose sustainable products despite higher costs, as their purchasing power allows them to prioritise eco-friendly options. This contrasts with lower-income consumers, who may prioritise price and convenience over sustainability, often viewing eco-friendly products as discretionary rather than essential spending.
- Plant-based alternatives are often priced higher than its associated meat equivalent, this poses a barrier for some consumers.
- Socioeconomic disparities can limit access to plant-based foods for lower-income individuals, reinforcing a divide where sustainable choices are more accessible to affluent consumers, impacting broader adoption across all income levels.
- Cost sensitivity remains a significant factor that can hinder the widespread adoption of plant-based diets, especially in price-sensitive markets like South Africa.
- Consumers with higher levels of education are more inclined to consider the environmental impact of their purchases and opt for plant-based alternatives.

Brand equity and consumer demographics:

- Building brand equity through sustainability is essential for companies like Fry's, as brand image and perceived environmental responsibility enhance consumer loyalty and purchasing intentions.
- Flexitarian diet is gaining popularity, flexitarians often seek products that mimic the taste and texture of meat, creating opportunities for brands to innovate in taste and quality while emphasizing sustainability.
- Shifting consumer diets toward plant-based alternatives contributes to reducing climate change by decreasing the demand for resource-intensive animal agriculture.
- Brands need to align their strategies with climate action goals, which can enhance their appeal to environmentally conscious consumers.
- Brands that effectively communicate their sustainability efforts, like Fry's, could capitalize on this trend by enhancing brand equity and market share within the growing market for sustainable, plant-based products.

5.3. Findings from the data

Demographics:

- Younger consumers, especially Millennials and Gen Z, showed a stronger interest in plant-based products, correlating with their higher environmental awareness and concern for sustainability. Older generations, particularly Baby Boomers, exhibited less interest, often due to lower environmental concern or less awareness of plant-based benefits. This finding correlates to current literature.
- Women were more likely to purchase plant-based alternatives than men, influenced by both health and environmental concerns. This trend aligns with research that suggests women generally exhibit more pro-environmental behaviours than men.
- Higher education levels correlated with increased awareness of sustainability issues and stronger purchase intentions for plant-based alternatives, suggesting that educated consumers may better understand the environmental impact of their choices. This correlated to existing literature.
- Consumers with higher incomes showed a greater willingness to purchase plant-based alternatives despite higher costs, correlating to the literature that indicated affordability remaining a barrier for lower-income consumers in adopting these products.

5.4. Findings based on the proposed Hypotheses

- Attitudes:
 - Positive attitudes significantly influenced purchase intentions, supporting Hypothesis H1. Consumers with favourable views of plant-based alternatives, often due to perceived health benefits, were more likely to express purchase intentions
 - Consumers who value health and sustainability, plant-based alternatives align with these personal values, creating a positive position toward the products. When a product resonates with an individual's core values, they're more likely to hold a favourable view of it and intend to support it

through their purchasing behaviour.

- Subjective norms
 - Social influence positively impacted consumer intentions, aligning with Hypothesis H2. Consumers were more inclined to consider plant-based alternatives if they perceived social acceptance or encouragement from family, friends, or influencers.
 - Subjective norms reflect the perceived social pressures to engage in a behaviour. When consumers feel that others expect them to make environmentally or health-conscious choices, they experience an internalised pressure to meet those expectations. This influence aligns their intentions with perceived social expectations.
- Perceived behavioural control
 - The ease or difficulty of accessing plant-based options affected purchase intentions, confirming Hypothesis H3. Greater perceived control increases the likelihood of purchasing plant-based products.
 - Perceived behavioural control reflects consumers' assessment of the ease or difficulty of performing a behaviour. When plant-based options are accessible, consumers feel they have greater control over their choices.
- Sustainability
 - Sustainability motivations had a notable positive impact on purchase intentions, confirming Hypothesis H5. Environmentally conscious consumers, especially those aware of the ecological benefits of plant-based diets, showed higher intentions to purchase Fry's products.
 - Sustainability serves as an additional motivational factor that positively influences attitudes toward plant-based products. Consumers motivated by sustainability have a stronger positive attitude towards these products, bolstering their intention to buy. Moreover, perceived social norms around sustainability further support consumer intent, as purchasing plant-based products becomes a socially supported action.

The sustainability variable played a crucial role, showing that consumers who prioritised environmental conservation were more inclined toward plant-based purchases. This aligns with global trends emphasising sustainable consumption. The research illustrates that emphasising the environmental benefits of plant-based products can enhance purchase intentions among environmentally aware consumers

- **Brand Image**
 - The brand image of Fry's did not have any significant influence on purchase intentions thereby rejecting hypothesis H6. Therefore, brand image alone is an ineffective strategy to encourage purchase intention.
 - Consumer decisions about plant-based products often involve a combination of factors, including health benefits, ethical considerations, environmental impact, and price. While a positive brand image can enhance trust, it may not be sufficient to influence purchase intentions unless it aligns with these other important motivations.

5.6. Serendipitous findings

- **Socio-Demographic influence**
 - Interestingly gender, occupation, qualification and current monthly income did not have an effect on intention to purchase plant-based alternatives.
 - Lifestyle choices relating to vegan/vegetarian diets indicated that the more inclined to vegan/vegetarian the stronger the agreement to purchase plant-based alternatives. Carnivores are less likely to purchase plant-based alternatives as they would have no interest in these products.

5.7. Anticipated contribution

5.7.1. The theory of planned behaviour

The findings strongly support the TPB framework, with all three constructs—attitude, subjective norms, and perceived behavioural control—showing significant effects on

purchase intentions. Positive attitudes, supportive subjective norms, and higher perceived behavioural control contributed directly to increased purchase intentions for plant-based alternatives.

Through the application of the TPB in the context of plant-based alternatives, this study supports the utility of TPB in understanding environmentally motivated behaviours. It confirms that the core constructs—attitude, subjective norms, and perceived behavioural control—significantly affect purchase intentions for plant-based products. This adaptation of TPB strengthens its applicability to behaviours influenced by both personal and social motivations, particularly in emerging markets like South Africa where sustainability is gaining traction.

The study demonstrates that a favorable attitude toward plant-based products, often driven by perceived health and environmental benefits, are strong predictors of purchase intention. This aligns with TPB's assertion that positive attitudes toward a behaviour increase the likelihood of engaging in that behaviour, affirming that TPB is suitable for analysing health and environmental attitudes in consumption.

The study highlights the strong influence of subjective norms on intentions to purchase plant-based products, showing that social acceptance and encouragement play a significant role in consumer decisions. This underscores TPB's claim that social influences shape behavioural intentions.

Perceived behavioural control and accessibility: The study's findings emphasise that perceived behavioural control significantly impact consumer intentions. This supports TPB's position that perceived ease or difficulty of performing a behaviour can enhance or deter intention, indicating that market accessibility and distribution strategies are crucial for the plant-based food industry.

5.7.2. Extending the TPB

The TPB's applicability is further strengthened by extending it to include sustainability and brand image, providing a more comprehensive understanding of consumer behaviour toward plant-based products in a South African context. From a theoretical

perspective this research study advances the TPB to include factors such as sustainability and brand image by providing empirical evidence on the influence of these factors on purchase intentions. This study adds to the growing body of literature on sustainability and consumer behaviour, especially in emerging markets.

5.7.3. South African perspective

Whilst research studies have been conducted internationally, there is limited focus on South African consumers, as such this research study solely focuses this unique geographic segment of consumers. Existing research on sustainability-focused purchasing has focused on developed economies, there is less literature on consumer sustainability attitudes and behaviours in emerging markets like South Africa. This research will contribute empirical insights specific to South African consumers, enriching global understandings of how cultural, social, and economic factors influence sustainable purchasing decisions.

5.7.4. Fry's branding and communication

Through the examination of brand image, the researcher aims to understand the influence of brand image on purchase intentions, with particular focus on Fry's. The findings of this study offer insights for Fry's. By identifying the factors that drive South African consumers' intentions to purchase plant-based products, businesses can tailor their marketing strategies to better appeal to this audience. Understanding the influence of demographics and psychographics on consumer behaviour toward plant-based products enables businesses to adopt targeted marketing strategies. Segment-specific strategies derived from insights can enhance brand resonance and market penetration. Data-driven insights allow businesses to design products that meet the specific needs and preferences of the South African market, increasing the likelihood of adoption and repeat purchases.

5.7.5. Sustainable food production

South Africa, like many countries, face environmental challenges linked to food production and consumption. By identifying the factors that influence consumers to choose plant-based products, this study can support the promotion of sustainable eating habits. By providing insights into the motivations behind sustainable

purchasing, this study contributes to broader social efforts to promote conscious consumerism. Educating consumers about the environmental impact of their choices is critical to fostering long-term shifts toward more sustainable lifestyles.

Shifting consumer behaviour toward plant-based alternatives can reduce the demand for resource-intensive animal agriculture, contributing to climate change mitigation efforts. By identifying factors that increase consumer willingness to adopt plant-based products, this study indirectly supports environmental goals aimed at reducing greenhouse gas emissions and preserving natural resources. The research aligns with international environmental priorities, demonstrating how consumer behaviour studies can contribute to larger, collective environmental goals.

5.8. Recommendations

There is limited influence of brand image directly related to increasing purchase intentions. Consumers do not necessarily buy plant-based alternatives because of the Fry's brand. Rather there are other motivational factors that influence purchase. To increase consumer purchase intentions, Fry's should focus on other factors such as:

5.8.1. Brand positioning

- Emphasise health advantages of plant-based alternatives. Since consumers with positive attitudes towards plant-based options are often driven by perceived health benefits, marketing campaigns should emphasise the benefits of plant-based products.
- Emphasise environmental messaging. Since sustainability motivations significantly influence purchase intentions, emphasise the environmental impact of plant-based options. Campaigns could showcase the reduced carbon footprint and water savings associated with plant-based diets compared to animal-based foods.
- Align the brand image with core values. Highlight Fry's commitment to sustainable sourcing and ethical production processes. Transparent labelling and information about ingredient sourcing can build trust and enhance brand image, particularly among environmentally conscious consumers.
- Engage influencers and brand ambassadors. Since subjective norms and

social influences were strong predictors of purchase intention, work with influencers, particularly those who promote sustainable and health-conscious lifestyles. Their endorsements can make plant-based products more appealing to consumers.

- Since respondents were inclined to purchase based on what their friends and family would think, it is recommended that Fry's encourages existing customers to share their experiences on social media. This can enhance brand credibility and influence other consumers to try the products based on peer recommendations.

5.8.2. Target consumer segments

- Given that younger consumers (Gen Z and Millennials) are more inclined toward sustainable purchases, create campaigns that resonate with their values. Highlighting the brand's commitment to sustainability and ethical practices can attract these demographics and foster loyalty.
- For consumers with higher income and education levels, focus should be placed on informative and educational content that connects plant-based choices to larger issues, like climate change and global food security. This segment appreciates in-depth knowledge and values the ethical aspects of sustainable consumption.
- Figure 5.1 highlights that the focus should be on increasing intention to purchase plant-based alternatives of flexitarian consumers. Given that flexitarian consumers seek plant-based products that closely resemble meat, investing in R&D to enhance taste and texture can increase appeal. Product innovation focused on creating a satisfying sensory experience similar to meat will help retain flexitarian consumers.

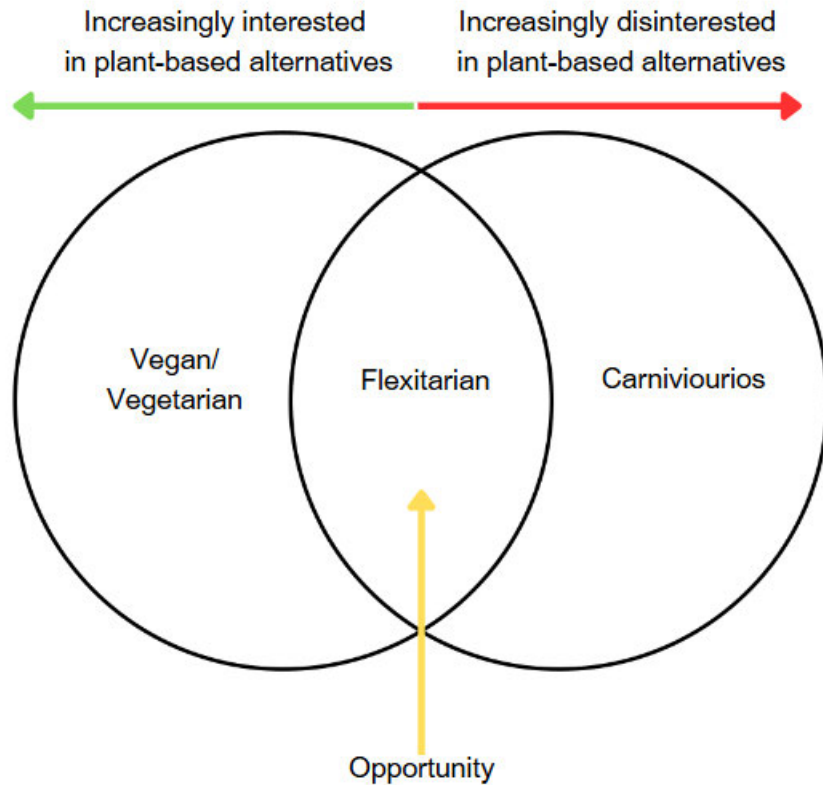


Figure 5.1: Opportunity to capture market segment (Authors own).

Vegetarians and vegan consumers already purchase plant-based alternatives. Meat based diets have no inclination or interests in plant-based alternatives. Therefore, focus should be on targeting flexitarian consumers to purchase Fry's plant-based alternatives.

5.9. Limitations

- The study utilised convenience sampling, which may limit the generalisability of the results to the broader population, however the findings are representative of similar demographics.
- Since participants were recruited primarily through online channels, the sample may not fully represent all South African consumers, particularly those without internet access or lower digital literacy.
- Data were collected through self-reported surveys, which are susceptible to social desirability bias. Participants may have been inclined to a pro-environmental attitude or intention to present themselves favorably, which could lead to an overestimation of positive attitudes and purchase intentions.

- The study's sample may not fully represent lower-income consumers, who often face greater barriers to purchasing plant-based products due to cost. This socioeconomic limitation could mean that the study findings are more applicable to middle- or higher-income segments within South Africa.
- The study focused on Fry's brand image but may not have fully accounted for how competing brands or alternatives impact consumer choice.

5.10. Further research opportunities

- Further research can omit vegan, vegetarian and carnivores. Vegan and vegetarians are inclined to plant-based alternatives whilst carnivores have no interest at all. Therefore, further studies should focus on a flexitarian consumer.
- Opportunity to include other plant-based brands to achieve greater insights into purchase intentions of plant-based products.
- Opportunity for the study to be brand agnostic and focus solely on product knowledge of plant-based products in general.

5.11. Conclusion

Chapter 5 provides strategic recommendations based on the data analysis and literature review findings to enhance Fry's market positioning in the plant-based industry. Emphasis is on leveraging the key motivations that influence consumer purchase intentions, such as health benefits, sustainability, and social influence. The chapter highlights the importance of aligning Fry's brand image with consumer values around health and environmental responsibility while utilising targeted marketing strategies to appeal to specific demographic segments, such as younger and educated consumers. Additionally, the study addresses the limitations and provides suggestions for further research opportunities, the chapter aims to foster continued investigation into sustainable consumer behaviour and the plant-based market landscape, particularly within South Africa.

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