
# Millennials' Attitudes Towards Organic Personal Care Products in South Africa: An Application of the Theory of Planned Behaviour

by

**Mongezi Lupindo (LPNMON003)**

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Supervisor:

**Nkosivile Madinga**

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**Student Number:** LPNMON003

**Student Name:** Mongezi Lupindo

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## ABSTRACT

The organic products market has grown worldwide in recent years. Increasing demand for products that are less harmful to the environment and health is one of the factors driving this phenomenon. Consumers are becoming more conscious than ever before about the environmental effects of the products they consume. Specifically, millennials have become environmentally responsible consumers. Although earlier studies have provided insights into factors influencing attitudes towards organic products in various contexts, there is limited research into organic products in the South African context, specifically research focusing on organic personal care products among millennials. Millennials are influential consumers who are environmentally conscious and digitally savvy. Recently, social media has gained increased attention for its ability to amplify environmental concerns and promote sustainable behaviour among young people. As a result, understanding how young consumers develop their purchasing behaviours towards organic personal care products is necessary. Therefore, this study investigated millennials' attitudes towards environmental issues and health consciousness, and the effects of their attitudes, social norms, and perceived behavioural controls on their willingness to pay for organic personal care products.

The study followed a descriptive, quantitative research design using an online self-administered survey. A non-probability virtual snowball sample of 433 Facebook users, aged between 18 and 25 years who live in South Africa, was followed. Out of the 433 questionnaires that were collected, 377 were included for analysis. Data were analysed using Structural Equation Modelling (SEM). The results reveal that South African millennials' environmental concern and health consciousness had a significantly positive influence on their attitudes towards organic personal care products. The results also showed that attitude towards organic personal care products had a significant positive effect on subjective norms, and attitude was the strongest significant predictor of willingness to pay for organic personal care products.

The results provide marketers with insights into how millennials ' attitude and willingness to buy organic personal care products can be influenced. Specifically, marketers should develop marketing strategies that incorporate environmental concerns, health awareness, and social influence to increase customer willingness to pay for organic personal care products. The findings also help policymakers understand the level of customer concern about the environment and their health, develop effective environmental policies necessary to achieve sustainability, and boost green purchasing through legislation. In addition, policymakers should be more constructive to promote ecologically conscious consumer behaviour. Collaborating with the private sector in various campaigns would help to enhance consumers' attitudes regarding the environmental concern.

**Keywords**

Organic products, attitudes, environmental concern, health-consciousness, and social media.

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# CHAPTER 1: INTRODUCTION AND BACKGROUND

## 1.1 Introduction

Consumers today have a growing global consciousness and care for social and environmental responsibility (Amberg & Fogarassy, 2019). Consumers realise that their purchasing behaviour affects the environment and their health directly and indirectly (Smith & Brower, 2012). Additionally, environmental concerns and health awareness have proved to be a significant primary antecedent for organic products attitudes (Eltayeb, Zailani & Jayaraman, 2010). Paul, Modi, and Patel (2016) have shown that customers who care about sustainability favour businesses that incorporate environmental sustainability into their business strategies. This has led to the creation of green-alternative solutions that could boost the company's competitiveness because of changing consumer preferences (Hsu, Chang & Yansritakul, 2016). Consumers often take different qualities into account when comparing organic products. According to Vermeir and Verbeke (2008), consumers distinguish not only between processes but also between the quality and safety features of organic products.

Earlier research suggests that millennial consumers spend a significant portion of their income on organic and green products (Smith, 2010). The millennial generation is aged 18-35 and includes 20.4 million South Africans (StatsSA, 2019). The millennial cohort is considered particularly important because they will play an active role in the future global economy (Anvar & Venter, 2014). Additionally, millennials are a growing segment purchasing organic products (Unilever, 2016).

Some studies have demonstrated that health impacts attitude towards intentions to buy organic products (Michaelidou & Hassan, 2008; Akhondan, Johnson-Carroll & Rabolt, 2015; Wang, Pacho, Liu & Kajungiro, 2019). Consumers' health consciousness has spread from the food industry to the beauty industry (Lin, Yang, Hanifah & Iqbal, 2018). Matić and Puh (2016) argue that the cosmetics industry is particularly important, and the use of personal care products and cosmetics has always been an essential part of

everyday hygiene. According to Kline Group (2016), the demand for organic personal care products has a higher growth opportunity in developing economies compared to the non-green personal care sector. As a result, it becomes critical to study how the consumer feels about these products − with regards to the effects these products have on the environment, as well as the impact on their wellbeing.

Green marketing strategies can influence consumer purchases (Minton, Lee, Orth, Kim & Kahle, 2013). Social media has emerged as a tool for promoting the consumption of environmentally friendly products (Biswas & Roy, 2014). Social media has also been linked to influencing various aspects of consumer behaviour (Bolton, Parasuraman, Hoefnagles & Migchels 2013). On social media, consumers have self-selected themselves into lifestyle groups that make targeted marketing much easier (Minton et al., 2013). Wang et al. (2019) report that although social media knowledge contributed to the enhancement of consumer buying intentions, consumers cannot differentiate the attributes of organic products from conventional products.

It is necessary to gain an understanding of the attitudes and behaviours of consumers towards organic products to enable better conditions and development for the market of organic products, even though consumer indications of positive attitudes towards environmental issues do not necessarily lead to an actual buying behaviour that is environmentally friendly (Gan, Wee, Ozanne & Kao, 2008). The Theory of Planned Behaviour (TPB) has been applied to understand consumer behaviour (Groening, Sarkis & Zhu, 2017). Earlier studies have used the TPB model to examine the factors that influence purchase intention for green products without factoring in the impacts of environmental concerns and health consciousness (Anvar & Venter, 2014; Paul et al., 2016).

The following section provides the context of the study, followed by the question that guided this research. Research aims and research questions are clearly outlined. The researcher briefly outlines the methodological approach used to examine the research problem and explain the purpose of the current study.

## 1.2 Background of study

This section provides context for the key issues that inform this study, namely: organic products, millennials, social media, as well as the theory of planned behaviour.

## 1.3 Organic product consumption

Consumers realise that their current consumption behaviour affects future generations (Smith & Brower, 2012). Moreover, evidence supporting the growth of eco-friendly consumer behaviour is the growing number of individuals willing to pay more for organic products (Maichum, Parichatnon & Peng, 2016). In response, businesses have begun to make their service and product offerings more environmentally friendly (Sharma & Bansal, 2013). However, Ottman (2011) argues that consumers are unlikely to sacrifice traditional product qualities such as consistency, convenience and availability, price, and cost −which means that organic products must compete with non-organic products for consumer acceptance.

Several comparisons exist between customers purchasing organic foods and organic personal care products (Cervellon & Carey, 2011; Kim & Chung, 2011; Ghazali, Soon, Mutum & Nguyen, 2017). Lin, Yang, Hanifah, and Iqbal (2018) note that the food market is rapidly impacting the personal beauty industry as people are extending their knowledge of what they eat to what they put on their skin to ensure a healthy lifestyle. Matic and Puh (2016) state that the skincare industry is essential, and the use of skincare and personal care products has always been a vital part of consumers' lives. According to Kline Group (2016), the market for organic personal care products has higher growth potential in developing economies compared to the non-green personal care sector. In the South African context, the Department of Trade and Industry (2019) also reported strong demand for organic cosmetics and supported the sector's import replacement. The Global Natural and Organic Personal Care Products Market Report (2018) reports that South Africa's organic skincare segment is expected to grow at a CAGR of 7.4% over the forecast period (2019-2024). The Grand View Research (2019) predicts that the shift in

consumer preference towards natural and organic goods coupled with the increasing use of environmentally friendly products would drive market development.

### 1.4 Sustainability and social media

Social media changed how people interact and communicate, convey, and share ideas and engage with products, brands, and organisations (Duffett & Wakeham, 2016). The growth and increasing popularity of social media have taken us into the Web 2.0 era, which creates communities that promote user-generated content (UGC). Also, nearly 60% of the world's population is already online, and trends suggest that by mid-2020, more than half of the world's total population will use social media (Kemp, 2020).

Ioanăs and Stoica (2014) point out that social media has become a primary source for customers seeking reliable information. Consumers regularly review products and services on their terms and are motivated by peer reviews and third-party blogs (Bill, 2012). Chen, Hsieh, Chang, and Chen (2015) found that when the information provided by blogs meets the psychological needs of users, customers are willing to engage in consumer citizenship activity related to friends or family. Kanter and Fine (2010), demonstrate how social networks can actively promote ecological awareness and sustainable practice in their study focusing on the value of using social media to increase interest in environmental initiatives to help communicate sustainability issues. Therefore, to benefit from social media, marketers should identify and understand the motives of consumer interaction and analysis on social media.

### 1.5 Problem statement

Demand for organic products is growing globally in a variety of industries, including food, apparel, and cosmetics (Cervellon & Carey, 2011). In particular, the interest in organic cosmetics has grown remarkably as consumers become more health-conscious and adjust their consumption toward more natural products (Matic & Puh, 2016). Moreover, individual consuming decisions are primarily influenced by the attitudes of friends, family members, and other groups important to the consumer (Tarkiainen & Sundqvist, 2005). The effect of social media on consumer green choice behaviour can serve as a useful

tool for green promotion (Biswas, 2016). A growing body of research has examined several factors influencing attitudes toward organic products (Paul et al., 2016). However, there is limited research focusing on attitudes towards organic personal care products (Kim & Chung, 2011; Matic & Puh, 2016), especially those of millennials in the South African context (Anvar & Venter, 2014; Scott & Vigar-Ellis, 2014). Anvar and Venter (2014) argue that, given that the African millennial segment makes up 84% of the South African market, they are an essential consumer market for the green movement and are still under-researched, especially concerning their attitudes towards environmental issues. Paul et al. (2016) also argue that consumers from developed countries are more concerned about the environment than those from developing countries. The current study applies the TPB to understand millennials' attitude towards organic personal care products. Furthermore, this study seeks to establish an extended TPB model to study the effect of environmental concern and health consciousness on TPB constructs to gain a better understanding of millennials' willingness to pay for organic personal care products. Therefore, in the context of South Africa, it is necessary to gain insight into factors affecting consumer buying willingness towards organic products.

## 1.6 Aim and objectives of the study

#### 1.6.1.1 Aim of the study

The aim of this study is to determine the factors that influence millennial consumers' attitudes towards organic personal care products in South Africa.

### 1.6.2 Theoretical objectives

To address the primary aim of the study, the theoretical objectives are to review the literature on:

- The Theory of Planned Behaviour (TPB)
- The factors influencing organic products purchase intentions
- Green marketing
- Organic products
- Social media and its impact on consumer behaviour

- Social media networks, with a focus on Facebook
- The millennial cohort

### 1.6.3 Empirical objectives of the study

The objectives of this study are as follows:

- To identify the motivating factors that influence the purchase of organic personal care products.
- To determine the impact of subjective norms on the purchase intentions of organic personal care products.
- To study the relationship between environmental concern and attitude towards organic personal care products.
- To study the relationship between health consciousness and attitude towards organic personal care products.
- To determine the impact of perceived quality on purchase intention of organic personal care products.
- To determine the impact of attitude towards organic personal care products on consumers' willingness to pay.
- To determine the impact of attitude towards organic personal care products on perceived behavioural control.
- To determine the impact of attitude towards organic personal care products on consumer's purchase intentions.

## 1.7 Theoretical framework

The current study uses the Theory of Planned Behaviour (TPB) to determine the factors influencing consumers' willingness to pay for organic personal care products. The TPB's extended model includes additional consumer variables of environmental concern, health consciousness, and quality perceptions to predict the purchase intention of organic products. TPB is commonly used to understand important human behaviour. TPB is an extension of the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980). The TPB as shown in Figure 1 shows that one's actions can be influenced by behavioural intentions that can be predicted by certain socio-cognitive variables, such as attitudes, social norms,

and perceived behaviour regulation (Ajzen, 1991). As such, for TPB, attitude towards target behaviour, subjective behavioural norms and perceived behavioural control are thought to influence intentional and organic product-buying behaviour (Ajzen, 1991).

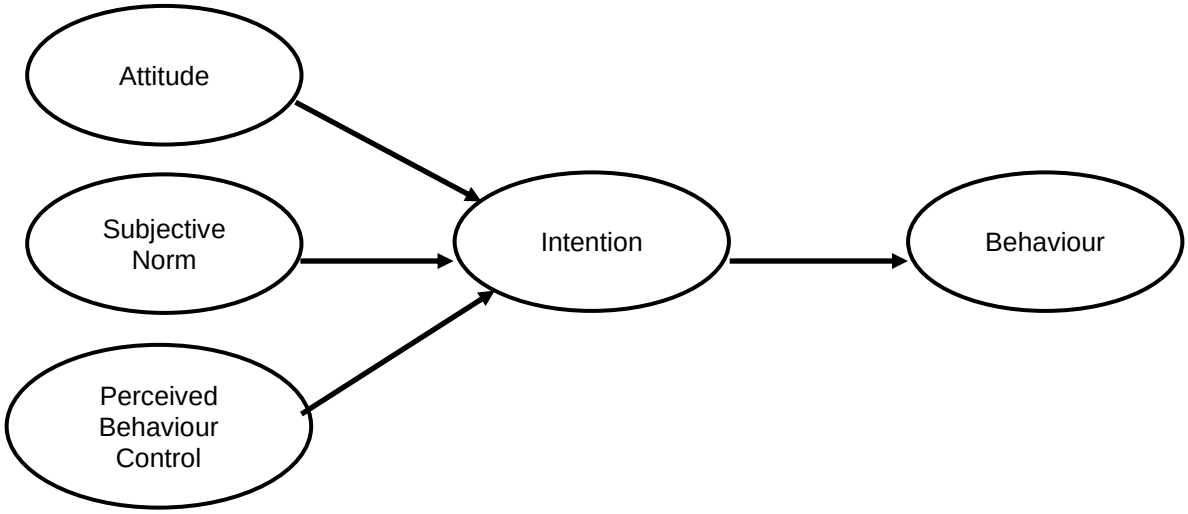



**Figure 1. 1: Theory of Planned Behaviour (TPB) (Azjen,1991)**

Earlier studies have used the TPB and the extended TPB model successfully in various contexts (Groening et al., 2018; Hsu et al., 2016). The TPB in its various forms has been used to predict green purchase behaviour, such as green hotels (Chen & Tung, 2014), skincare (Kim & Chung, 2011) as well as general organic products (Paul et al., 2016). Therefore, the TPB was considered suitable for assessing the factors influencing the purchasing intention of organic products as it was successfully applied to different green product contexts.

### 1.7.1 Environmental concern

Environmental concern is described as “the degree to which people are aware of problems regarding the environment and support efforts to solve them and or indicate the willingness to contribute personally to their solution” (Hu, Parsa & Self, 2010:5). Hartmann and Apaolaza-Ibáñez (2012) argue that consumers engage in environmental behaviour because they are concerned about the environment and society. Earlier studies showed

a strong connection between environmental concern and a positive attitude towards organic products. Kim and Chung (2011) found that environmental issues have a positive influence on organic personal care attitudes in the United States. Paul et al. (2016) established the direct and indirect effect of environmental concern through attitudes towards India's green behavioural intentions. In addition, Hartmann and Apaolaza-Ibáñez (2012) determined that consumers view energy conservation more favourably as their intrinsic environmental concern increases, and they develop a positive attitude towards green energy and become amenable to paying a premium for green energy. Thus, environmental concern is considered an important antecedent of attitude and a clear motivator for organic products purchase intention (Maichum et al., 2016)

### 1.7.2 Health consciousness

Health consciousness is defined as the degree to which health concerns are integrated into an individual's daily activities (Akhondan et al., 2015). Increasingly, more consumers are aware of health risks associated with the use of conventional products (Pino, Peluso & Guido, 2012). Excessive use of cosmetics with harmful chemicals has long - term side effects, such as headaches, eye damage, acne, hormonal imbalance, and premature ageing (Amberg & Fogarassy, 2019). Such harmful chemicals have even been linked to cancer and type II diabetes (Witorsch & Thomas, 2010; Trasande, Spanier, Sathyanarayana, Attina & Blustein, 2013). In choosing organic personal care products, a consumer avoids the stress and uncertainty of harmful, artificial products and invests in their long-term health and beauty (Kriwy & Mecking, 2011).

Consequently, health-conscious customers who are mindful of their well-being and are driven to preserve their health and quality of life, avoid ill health by engaging in healthy behaviours (Kim & Chung, 2011). Earlier studies have confirmed that health consciousness predicts a variety of healthy attitudes and behaviours (Kriwy & Mecking, 2011; Matic & Puh, 2015). In addition, several studies highlight the influence of health consciousness on consumers' purchase intention towards organic food (Akhondan et al., 2015; Hsu et al., 2017; Wang et al., 2019). Considering increasing consumer demand for health and safety products, and the fact that natural products are seen as promoting a

healthy lifestyle, consumer purchasing behaviour between organic food and natural personal care products should be similar (Kim & Chung, 2011).

### 1.7.3 Attitude

Attitude is an antecedent of behavioural intentions in the TPB (Ajzen, 1991). Attitude towards a behaviour refers to the degree to which a person has a favourable or unfavourable evaluation of the behaviour in question (Ajzen, 1991). Furthermore, attitude includes judgment on whether the behaviour under consideration is good or bad, and whether the actor wants to do the behaviour (Paul et al., 2016). According to Hsu et al. (2017), attitude can predict purchase intentions toward purchase behaviour. Chen and Tung (2014) argue that attitude is the psychological emotion transmitted by customer assessments, and when positive, behavioural motives are more favourable. Attitudes also inform behaviour (Young, Hwang, McDonald & Oates, 2010). Several studies reported a positive association between attitude and willingness to buy organic products. For example, Paul et al. (2016), identified attitude as a critical determinant of behavioural intentions among Indian consumers. Anvar and Venter (2014) determined that the effect of attitude on buying behaviour towards organic products was also positive among South African millennials. In addition, the association between attitude and behavioural intentions has been established across diverse cultures (Mostafa, 2007).

### 1.7.4 Subjective norms

Subjective norms are another precedent of intent in the TPB, referring to perceived social pressure to perform a behaviour or not (Ajzen, 1991). Such social influences are sometimes based on how much a person thinks activity occurs among others, and the perception of other people's approval or disapproval of behaviour (Ajzen, 1991). Sanne and Wiese (2018) explain that subjective norms are influenced by both personal references (like family and friends) and societal references (like mass media or social media). Additionally, consumers with more subjective behavioural norms than behavioural expectations are more likely to be positive (Han et al., 2010). Many studies have found a positive relationship in various settings between subjective norms and intentions, including engaging in Facebook advertising (Sanne & Wiese, 2018), organic

personal care products (Kim & Chung, 2011) and green hotel reviews (Chen & Tung, 2014). If consumers believe that their significant others embrace green purchasing behaviour, they are more likely to adopt these behaviours (Paul et al., 2016). Therefore, they are likely to follow group practices such as purchasing green products (Paul et al., 2016).

### 1.7.5 Perceived behavioural control

The term ‘perceived behavioural control' refers to "the perceived ease or difficulty of performing the behaviour" (Ajzen, 1991) and reflects past experiences and predicted obstacles (Paul et al., 2016). Ajzen (1991) compares perceived behavioural control to Bandura's concept of perceived self-efficacy (Bandura, 1997). Therefore, those who perceive a higher degree of personal control tend to have stronger behavioural intention to engage in a behaviour (Ajzen, 1991). Vermeir and Verbeke (2006) believe that the relationship between a consumer's attitude and intention is inconsistent because factors such as price may influence purchase intention for organic foods. Some researchers have concluded that confidence in the ability of the individual to control their behaviour shows a positive relationship with purchase intention (Olsen, 2004; Baker, Gahtani & Hubona, 2009). Additionally, perceived behavioural control had been associated with purchase intention in green hotels (Hu et al., 2010), organic foods (Tarkiainen & Sundqvist, 2005) and green products (Moser, 2015).

### 1.7.6 Perceived quality

Perceived quality is defined as the consumers' judgment about an entity's services containing overall excellence or superiority (Zeithaml, 1988, as cited in Marakanon & Panjakajornsak, 2017:25). Wang, Lo, and Yang (2004) explain that consumers use quality indicators to judge the value of a product and then use that evaluation to determine its purchase intention. Perception of consumer quality is characterised by the following attributes: performance features, conformance, reliability, durability serviceability, aesthetic and quality perceived by the customer (Sweeney & Soutar, 2001). Product quality is considered a key determinant of a business’ competitiveness and may provide an opportunity for differentiation (Hidalgo-Baz, Martos-Partal & González-Benito, 2017).

However, Harbaugh (2011) points out that ambiguity about what makes a product organic may prevent consumers from recognising its quality and therefore prevent them from adopting and using such products. It is therefore expected that higher perceived quality would enhance consumer purchase intentions to purchase organic products.

### 1.7.7 Willingness to pay more for organic products

Li and Meshkova (2013:451) define Willingness to pay (WTP) as the "maximum amount of money a consumer may be inclined to pay for a product under certain circumstances before switching". Consequently, the adoption of environmentally friendly practices, including green purchase behaviour, depends on consumers' willingness to pay the green price premium (Biwas, 2016). Some studies show that consumers are willing to pay more for organic products (Kanga, Steinb, Heoc & Lee, 2012; Trudel & Cotte, 2008; Sriwaranun Gan, Lee, Cohen, 2015). Sriwaranun (2015) claim that consumers are generally willing to pay a premium of 10% to 40% for organic products. Similarly, D'Souza et al. (2006) found that strong environmental motivations may result in a greater willingness to pay a price premium of up to 10%. In a study investigating consumers' purchase intention of green products in Malaysia, the results showed that willingness of consumers to pay more for organic products was moderating the relationship between environmental attitudes and purchase intention (Ling, 2012). By contrast, other research suggests that while consumers are willing to purchase organic products, this is usually conditional upon price, convenience, accessibility, and perceived quality (D'Souza et al., 2006; Vermeir & Verbeke, 2006). Engaged environmentalists, however, ignore price as a factor in determining their behaviour (Anvar & Venter, 2014). D'Souza et al. (2006) argue that customers are not tolerant of lower quality and higher prices of green products. Therefore, customers expect all products offered to be environmentally safe without compromising quality and paying higher prices for the convenience.

## 1.8 Hypothesis statements

Based on the theoretical context and literature, the research proposed eight hypotheses to illustrate the different dimensions and relationships under investigation. The following hypotheses were expressed:

**H1:** Environmental concern (EC) positively influence attitude toward organic personal care products (ATT OPP).

**H2**: Health concern (HC) positively influence attitude toward organic personal products (ATT OPP).

**H3**: Millennial consumers' attitudes towards organic personal care products (ATT OPP) influence purchase intentions (PI).

**H4**: Millennial consumers' subjective norms (SN) have a positive influence on their intentions (PI) to buy organic personal care products.

**H5:** The greater the perceived behavioural control (PBC) is, the stronger the positive relationship between attitude (ATT OPP) and intention to buy (PI) organic personal care products.

**H6:** Perceived quality (PQ) has a positive effect on purchase intention (PI) for organic personal care products.

**H7:** Positive attitude towards organic personal care products (ATT OPP) significantly influences the willingness to pay more (WTP).

### 1.8.1 Hypothetical model

Based on the preliminary literature provided in this study, a hypothetical model and hypotheses were developed. The following model was proposed for the study.

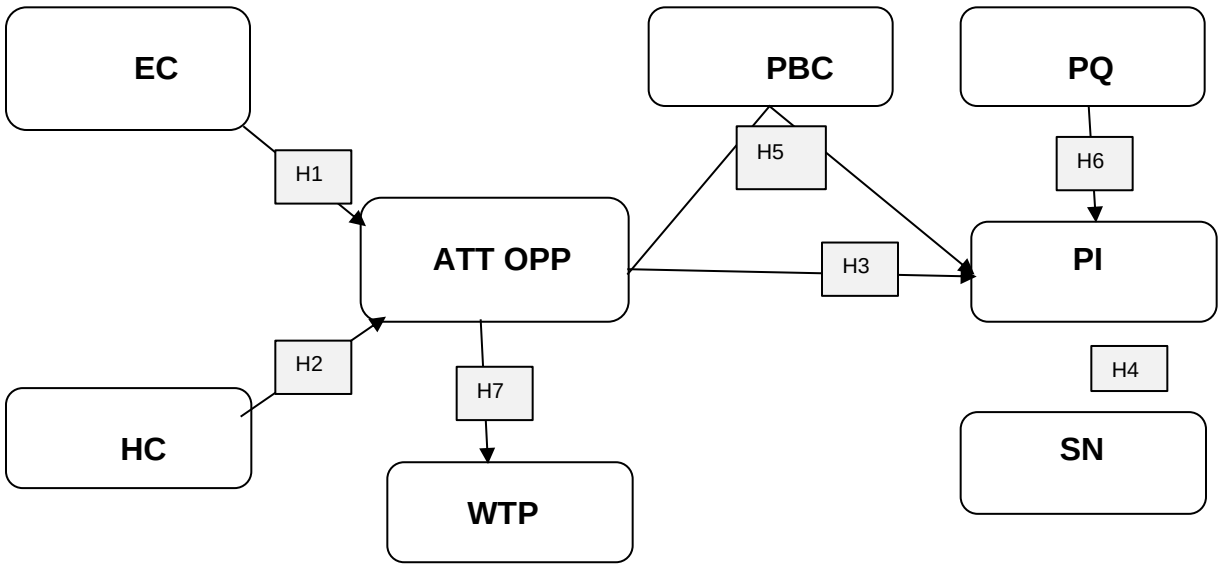



**Figure 1. 2: Hypothetical model**

## 1.9 Research methodology

This study follows a deductive research method in which the researcher examines established hypothesis, or phenomenon, and examines whether that theory is true under certain conditions (Wilson, 2010), in which the researcher examines the TPB.

## 1.10 Research paradigm

In order to critically analyse and predict human behaviour, a constructive model has been implemented (Schiffman & Kanuk, 2009). This study employed a positivist paradigm because the findings are compared to the hypotheses. The positivist approach helps researchers to establish information critically, gather facts on the social world and then create an explanation for social life by organising these facts into a chain of causes (Baltar & Brunet, 2012). This research looks to explain attitudes, environment, and health as a way of predicting future consumer behaviour.

## 1.11 Research design

The current study is descriptive and used a survey method to collect data. Descriptive research explains the features of groups and people (Salkind, 2012). Survey methods are typically associated with descriptive research (Hair, Sarstedt & Ringle, 2019). The survey design enabled indirect observation using structured interviews and questionnaires and a broad overview of a sample of a larger population (Mouton, 2010), which enabled a larger number of millennials to be included in the study – and which was appropriate for collecting information.

## 1.12 Research approach

This study is quantitative, where the research design maximises objectivity by using numbers, statistics, structure, and control (Creswell, 2014). Additionally, due to the large sample size and methodological rigour, the quantitative analysis provides an advantage in terms of generalisability, reliability, and validity (Salkind, 2012).

## 1.13 Target population

The study target population consisted of active Facebook users aged between 18 and 25 years who live in South Africa. This group was targeted due to their high social media usage (Duffett & Wakeham, 2016), and their sustainable consumption trend (Smith & Brower, 2012).

### 1.13.1 Sample size

The research sample size includes 377 participants. The sample size was considered adequate for this research as earlier studies using sample sizes between 200 and 400 participants tested similar constructs (Anvar & Venter, 2014; Dehghani & Tumer, 2015; Dondolo, 2014; Sanne & Wiese, 2018). For this study, the researcher selected a non-probability sampling method, specifically, convenience and snowball sampling. Snowballing has accumulated data through existing social structures (Baltar & Brunet, 2012).

## 1.14 Data collection

A structured self-administered questionnaire was used to collect the required data for this study. A self-administered survey allowed respondents to complete the survey instrument along with the benefits of reducing interviewer bias, the ability to reach large research populations, and a reasonable response rate (Duffett, 2015). Previously validated scales have been adapted and used for the empirical part of this study. To measure the levels of attitude social media influence on organic products (six items) were adapted from Minton et al. (2013). Attitude toward buying organic personal care products was measured using three items adapted from Laroche et al. (2001). Subjective norm was measured on four items, which were adapted from Paul et al. (2016). To measure perceived behavioural control, three items from Paul et al. (2016) were used. Strength of participant intention to purchase organic personal care products was assessed with three items adapted from Paul et al. (2016). Four different items measured levels of environmental concern. Three items were adapted from Paul et al. (2016), and one item was adapted from Laroche et al. (2001). Health consciousness was measured three using items from Michaelidou and Hassan (2008). Willingness to pay more for organic personal care products was measured on two items adapted from Sweeney and Soutar (2001). In addition, two items measuring perceived quality were adapted from Sweeney and Soutar (2001).

The questionnaire contained three sections. The first section (Section A) was designed to gather the participants' demographic data and social media usage. The second section (Section B), assessed the participants' level of attitude on Facebook influence on organic products. The third section (Section C), measured the factors influencing purchase intention of organic personal care products, namely environmental concern, health consciousness, attitude, subjective norm, perceived behavioural control, perceived quality, willingness to pay more and intentions to purchase organic personal care products. The questions in these three sections were structured on dichotomous, multiple-choice and ranking-order scales. All scaled responses were measured on a five-point Likert scale ranging from strongly disagree (1) and strongly agree (5). The questionnaire was provided with a cover letter explaining the study's purpose.

Before gathering the data for this study, ethical approval was obtained. A self-administered questionnaire using the online survey method was used to gather data. This study made use of an online survey site (Qualtrics) to collect primary data. A study invitation was posted via a Facebook advert with a link to the online survey. To find a sample close to the South African millennial population, participants were selected based on their location, age, and interests. Because this research consisted of an online population, this data collection technique was considered appropriate for the study (Baltar & Brunet, 2012).

### 1.15 Data analysis

The questionnaires have been carefully reviewed and edited. The data was entered in Statistical Package for Social Sciences (SPPS) version 26. Reliability and validity were also addressed. Reliability was used to test the consistency of the measuring instrument. Internal consistency reliability was measured using Cronbach alpha coefficient above 0.70 (Salkind, 2012). Validity was also tested. The type of validity examined provided content validity, criteria validity, and construct validity. Descriptive data were analysed for core pattern and variability measurements, including a measure of central tendency, standard deviation and measures of shape were analysed. Data descriptive analysis was vital as it helped establish distribution normality. Specific statistical methods and techniques have been used for data analysis. Correlation analysis was done to explain how far variables influence other variables. Structural Equation Modelling (SEM) was performed to check the relationship between study-based and independent variables.

### 1.16 Ethical considerations

The researcher considered ethics throughout the research process. The current study was regulated by the University of the Cape's provision that requires studies concerning human participation to request for human research ethics committee's approval before a study could be conducted. This study was approved by the University of Cape Town's commerce ethics committee. All participants were informed about the purpose and requirements of the study. They were asked for their consent before taking part in the study. The consent

form assured confidentiality of their results, reminding them that they participate voluntarily and could withdraw from the study at any time, and lastly, that they understood that their results would be used as part of a bigger group of results and not on an individual level.

### 1.17 Justification for the study

The current study contributes to the growing research on millennials and green consumption behaviour. It provides useful insights into the behaviour of South African millennial consumers regarding organic personal care products by analysing factors that influence consumers' attitudes towards buying organic personal care products and consumer purchasing intentions for the products. Therefore, this research extends the TPB's application by examining the factors that influence millennials' attitudes towards organic personal care products in South Africa. The need to understand green buying behaviour is particularly relevant due to advances in the environment, science, and communication fields − such as the internet and social media − and consumer awareness and concern about environmental issues (Cohen, 2014). Marketers, retailers, and policymakers may also find the findings and recommendations useful in bridging theory and practice gaps.

This study may be useful to marketers of organic personal care products looking to target millennials by providing practical insights to understand millennials' attitudes better and purchase intentions towards organic personal care products. Given the growth of social media and consumer-to-consumer communications, this study provides additional insights on how to use these platforms better to promote organic products. Additionally, steering consumers toward green consumption needs diverse strategies, including policy initiatives. The government has set various environmental consumer standards, such as content recycling and environmental performance measures, which can help build stronger consumer perceptions of product environmental effects, leading to higher buying intentions and behaviours (Groening et al., 2017). Furthermore, this study is conducted in South Africa, a developing economy where environmental and sustainable issues are growing and deserve to be recognised.

## 1.18 The organisation of the study

Chapter 1 introduced the topic and provided the background of the study. In this chapter, the problem statement in which the research questions were formulated was outlined. The chapter briefly described the method used in the study and concluded with a justification for the current study.

Chapter 2 provides a thorough understanding of the key issues in this study. Each section in this chapter includes a discussion on existing studies that try to describe study variables.

Chapter 3 provides a detailed discussion of the study's methods. The chapter addresses research design, population sampling, data collection and data analysis. Ethical considerations and trustworthiness measures are also discussed.

Chapter 4 presents the results and analysis of the study, the compilation of the questionnaire and the results and analysis of the quantitative findings of the study. The findings are also discussed based on earlier research findings and available literature to identify similarities and differences between this study and previous studies and literature.

Chapter 5 provides a discussion of the main findings, as well as the implication of the findings. Answers to the research questions are provided in this chapter. Finally, the contributions of the study are discussed based on theoretical, methodological, and practical approaches, and concludes with suggestions for future research.

## 1.19 Conclusion

In summary, this chapter described the critical issue of this study. This chapter highlighted the need to examine millennials' attitudes towards organic personal care products. The growing trend towards environmental and health issues was addressed briefly. The uses of social media as a platform to reinforce and encourage sustainable actions among millennials was also addressed. As a theoretical model, the extended TPB was introduced

to examine consumer behaviour in terms of green purchasing behaviour, with environmental, health consciousness, and perceived quality being the extended attitude variables. Quantitative analysis is applied to address the research question. Facebook is used as a tool to overcome obstacles found in other online research methods.

# CHAPTER 2: LITERATURE REVIEW

## 2.1 Introduction

The purpose of this chapter is to provide context to the key issues of this study. This chapter deals with the theoretical framework for the factors that influence consumer attitudes towards organic products in South Africa. Millennials are increasingly spending more time on social media (Etgar & Tamier, 2020). Moreover, social media is gaining a sizable part of the marketing promotional mix (Appel, Grewal, Hadi & Stephen, 2020; Mangold & Faulds, 2009). It is, therefore, critical to understanding social media's impact on millennials' purchase behaviour. In this study, the TPB is used as the theoretical framework to assess the context of intention to buy organic personal care products. The proposed model involves attitude, social norms, perceived behavioural control and behavioural intentions. In addition, this study also argues that millennials are not only looking for product quality but are also becoming conscious about health and environmental issues (Sumi & Kabir, 2018). The impact of TPB and its variables, along with perceived quality, health consciousness and environmental concern on organic personal care products, are addressed next.

## 2.2 The Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) is widely used to predict human behaviour (Tornikoski & Maalaoui, 2019). The TPB, proposed by Ajzen (1991), adapts the Theory of Reasoned Action (TRA) by incorporating perceived behavioural control (PBC) to allow the model to describe behaviour differences that are non-voluntary in a more predictive manner (Sanne & Wiese, 2018). The TPB assumes that volitional human behaviour is a function of the intention to perform the behaviour and perceived behavioural control (PBC) (Ajzen, 1991; Sniehotta, Presseau & Araújo-Soares, 2014).

Han, Hsu, and Sheu (2010) argue that the revised TPB model has higher predictive power of intent than the TRA model. Paul et al. (2016) state that the TPB enables scholars to

assess the effect of personal and social determinants, as well as non-voluntary determinants of intention.

According to the TPB, “the more favourable the attitude and subjective norm concerning a behaviour, and the greater the perceived behavioural control, the stronger should be an individual’s intention to perform the behaviour under consideration” (Ajzen 1991:188). These three antecedents of an individual's intention, in turn, follow from an individual's beliefs (Kim & Chung, 2011). Intention was used as a predictor of actual behaviour because intention shows how much effort a person is willing to put into executing a behaviour. Therefore, the greater the intention to perform the behaviour, the more likely the behaviour is to be executed (Ajzen 1991). Figure 2.1 provides a representation of the TPB model.

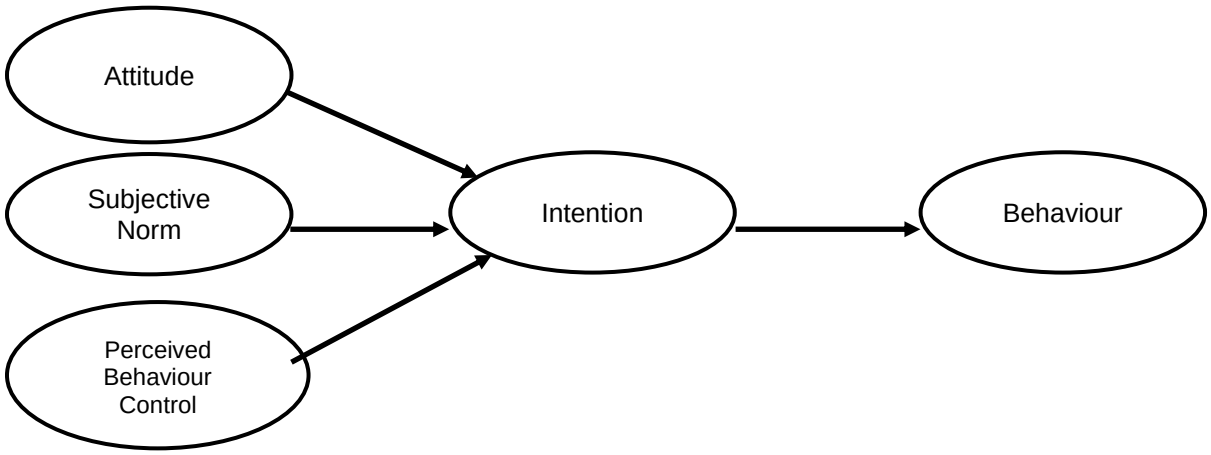



**Figure 2. 1: Theory of Planned Behaviour (Ajzen, 1991:182)**

The TPB has been widely applied in various contexts to help better understand an individual’s behaviour (Jokonya, 2017). In most cases, the results are generalisable (Sanne & Wiese, 2018). However, depending on the setting the TPB was applied to, attitude, subjective norm and perceived behavioural control had differing effects on behavioural intent, some being greater than others (Ajzen 1991, Paul et al., 2016).

Some researchers criticised the TPB model for focusing on rational reasoning not taking sufficient account of the emotional and cognitive process known to bias human judgments and behaviours (Conner, Godin, Sheeran & Germain, 2013; Sniehotta, 2009). Furthermore, most TPB studies use correlation design, and more evidence-based experimental studies are needed to test the robustness of the TPB (Sniehotta et al., 2014). Armitage (2015) views the TBP limitation as gaps that allow for further research and theory development.

Despite the impact of TPB in understanding human behaviour through different contexts, some scholars argue that the original TPB model may not fully capture consumer behaviour complexity (Sniehotta et al., 2014; Tornikoski & Maalaoui, 2019). Ajzen (2011) acknowledges that TPB has made significant progress since its introduction. Consequently, many researchers modified the TPB model to try to improve its predictive power by adding a variety of variables as an antecedent (Jokonya, 2017).

Hamilton and Terblanche-Smit (2016) applied the extended TPB to determine consumer intention to purchase green vehicles in South Africa. In India, Paul et al. (2016) applied the theory to predict consumers' green product purchase intention. In the USA, Kim and Chung (2011) made use of this theory to predict consumers' purchase intention of organic personal care products. In addition, Wang et al. (2019) applied the TPB to determine factors influencing organic food purchase intentions in Kenya and Tanzania. In most scenarios, all TPB variables (attitude, subjective norm, and perceived behavioural control) strongly influence the green purchase intention of consumers (Yadav & Pathak, 2016).

This study extends the TPB model by investigating attitude antecedents − namely, health consciousness and environmental concern. The following section first discusses the three antecedents of behavioural intention – attitudes, social norms, and PBC.

### 2.2.1 Attitude

According to the TPB model, attitude is the first antecedent of behavioural intention (Ajzen 1991; Han et al., 2010). Attitude refers to the degree to which an individual evaluates the behaviour as positive or negative (Ajzen 1991). Yadav and Pathak (2016) describe attitude as a result of behavioural beliefs and outcome evaluations. Beliefs about the behaviour consider the emotional benefits of performing the behaviour (Ajzen & Driver, 1991). Behaviours are considered essential because of their perceived usefulness or their perceived value for enjoyment (Sanne & Wiese, 2018). Attitude is, therefore, considered a significant predictor of behavioural intention (Paul et al., 2016). Yadav and Pathak (2017) conducted a study of green products in India and found that attitude towards green products was the most significant determinant of consumers' green purchase intention among Indian consumers. Wang et al. (2019) also highlighted attitude as the most significant predictor of intention to purchase organic food in Kenya and Tanzania.

In addition, a positive relationship has been found between attitude and green purchasing intentions in diverse cultural contexts (such as Asia, the United States, Europe and Africa) and in various product categories − such as organic food, green hotels and green vehicles (Han et al., 2010; Kim & Chung, 2011; Wang et al., 2019). Therefore, a person has a favourable attitude when the results are assessed favourably and thus is likely to engage in that specific behaviour (Ajzen, 1991; Han et al., 2010).

### 2.2.2 Social norms

Subjective norm is another antecedent of intention in the TPB and refers to the perceived social pressure to perform or not perform the behaviour (Ajzen, 1991). Yadav and Pathak (2016) consider subjective norms to be a social factor in nature. In addition, social norm theories suggest that some members of a social group play a significant role in strengthening and altering the norms of the entire group (Paluck & Shepherd, 2012). Han et al. (2010) describe subjective norm as an outcome of normative belief and motivation to comply. Normative belief is “what the individual perceives significant referent individuals to expect in terms of performing the behaviour, and the motivation to comply with these expectations is based on the perceived social pressure and the individual’s

willingness to comply" (Sanne & Wiese, 2018). Han et al. (2010) suggest that if someone feels that people either support or approve of the behaviour, they are likely to perform the behaviour. Several authors (Chen & Deng, 2016; Ho et al., 2015) suggest that subjective norms are shaped by personal references, such as friends and family, and social references such as mass media. Anvar and Venter (2014) emphasise that young consumers are strongly affected by the social power of the group to which they belong and are more open to change.

Park and Ha (2012) argue that people conform to subjective norms because they fear social pressure from major referents or because their referents offer guidance on acceptable or beneficial behaviours in their society. Wang (2014) explained that to meet the expectations of external referents, a person may experience social pressure to participate in environmental practices, such as purchasing green products.

Subjective norms can be considered vital determinants of the intention to perform environmentally appropriate behaviour (Wang, 2014). A positive relationship between social norms and intentions has been supported in groups as diverse as the United States Kim and Chung (2011) found that people who bought organic personal care products had significantly higher levels of subjective norms compared to those who did not. Similar findings occur even where we might anticipate differences, due to differences in culture. Another study carried out by Chen and Tung (2014) confirmed a positive correlation between consumers' subjective norms and green visits in Taiwan. Consequently, if more people are involved in environmental initiatives, the environmental awareness of these issues may increase, thereby increasing the environmental awareness of others and thus enhancing their green purchasing intentions.

### 2.2.3 Perceived behavioural control

Perceived behavioural control (PBC) refers to an individual's perception of the possible difficulties when performing a specific behaviour (Ajzen, 1991) and reflects past experiences and expected difficulties (Paul et al., 2016). It is the degree of control that one perceives over the performance of the behaviour (Wang et al.,2019). Also, PBC reflects both internal controllable factors (e.g. self-efficacy) and external perceived difficulty factors (e.g. perceived barriers) (Vermeir & Verbeke, 2008). Wang et al. (2019) indicate that price and product availability significantly impact PBC. Vermeir and Verbeke (2008) also point out that the greater the willingness to engage in a behaviour, the more likely it will be its performance. Yadav and Pathak (2016) state PBC is believed to influence behaviour directly − even if one wants to do something, he/she may be unable to do so if the behaviour is not under volitional control. Several studies have demonstrated a positive link between PBC and intention in the environmental context, such as skincare (Kim & Chung, 2011), green hotels (Han et al., 2010) and green products (Maichum et al., 2016). Hence it is assumed that when people believe they have more resources, their perceptions of control are high, and thus their behavioural intentions increase.

### 2.2.4 Behavioural intentions and behaviour

Behavioural intention (BI) is an indication of an individual's willingness and ability to perform a behaviour (Ajzen, 1991). It is assumed to be an immediate antecedent to behaviour and is used in the TPB to predict actual behaviour (Ajzen, 1991). Thus, BI is based on a combination of three factors: attitudes towards behaviour, subjective norms, and perceived behaviour control (Sanne & Wiese, 2018).

Actual behaviour refers to an individual's observable response to a given target situation (Ajzen, 1991). In addition, Ajzen (1991) claims that behaviour is the result of integrated intentions and behavioural control perceptions, in that perceived behavioural control is assumed to moderate the behavioural effect of intention, such that a favourable intention produces behaviour only when perceived behavioural control is strong.

According to Li and Meshkova (2013), purchase intentions are a predictor of consumer response behaviour towards marketing stimulus or product evaluation and are the most commonly used affective marketing effectiveness indicator. Behavioural intentions are the deliberate desire or willingness of an individual to attempt to engage in a particular activity (Mamum et al., 2018). Existing empirical evidence also suggests that intentions typically significantly predict actions (Ajzen, 1991; Chin, Jiang, Mufidah & Noer, 2018; Paul et al., 2016). Thus, consumers' willingness to pay for environmentally friendly products could be viewed as a green purchasing intention that reflects an individual's environmental awareness and readiness for green purchasing behaviour (Paul et al., 2016).

## 2.3 Factors that influence the purchase of organic products

Current environmental concerns have increased consumers' intentions to purchase organic products. As highlighted earlier, a behavioural gap exists between consumers' pro-environmental attitudes and green purchase behaviour. Understanding the factors influencing consumers to buy organic products not only helps to distinguish green consumers from non-green consumers but also informs marketing strategies intended to motivate non-green consumers to embrace a more environmentally- friendly purchase behaviour. Numerous researchers have proposed and assessed a broad range of factors that are believed to influence consumers' green purchase behaviour. This section reviews the literature on possible consumer antecedents that could influence their green purchase behaviour.

### 2.3.1 Perceived quality

Several authors (Sumi & Kabir, 2018; Lomboan, 2017; Zeithaml, 1988) define perceived quality as a customer's subjective judgment and assessment of the functional and practical benefit of the product, which may have a positive effect on the perceived value and increase buying intention (Wu & Chen, 2014). In addition, Sumi and Kabir, (2018) explain that a consumer's evaluation process about the value of a product and the service required for their perceived benefit and cost would significantly influence their buying decision.

Organic products are often associated with high quality and efficiency, offering customers additional benefits such as being healthier (Hendershot, 2009). Consequently, consumers' various levels of quality perception influence their purchasing intention. Wu and Chen (2014) suggest that the greater the perceived quality consumers have, the more their purchase intention increased. Furthermore, Mukul et al. (2013) argue that consumers will purchase products depending on their perceived quality expectations. Tsiotsou (2006) also discovered that perceived quality and purchase intention were directly positively correlated, so perceived quality could be used in predicting purchase intention. In addition, Ozguven (2012) observed that perceived quality is a motivating factor that influences consumers' willingness to pay for organic food.

### 2.3.2 Health consciousness

Akhondan et al. (2015) define health consciousness as the degree to which health concerns are integrated into an individual's daily activities. Increasing consumer concern for health issues has resulted in some people engaging in healthy behaviours (Sumi & Kabir, 2018). Organic products are considered an investment in individual health (Kriwy & Mecking, 2011). Paul and Rana (2012) determined that a positive attitude towards organic products was associated with concerns about health, safety, and the environment. Consumers who are health conscious consider their desired state of well-being and seek to maintain a healthy lifestyle (Matic & Puh, 2015). Kim and Chung (2011) indicate that health-conscious consumers would continue to engage in activities that promote healthy living.

Several studies consider health as an essential motivator for buying organic products, in particular organic food products. Wang, Pacho, Liu and Kajungiro (2019) found that health variables have a significant effect on consumer attitude towards organic foods in Kenya and Tanzania. Paul and Rana (2012) reported similar results among Indian consumers. Singh and Verma (2017) also confirmed health consciousness as a factor influencing organic food buying behaviour; however, the relationship is mediated by attitude and intention to purchase. Nonetheless, some studies reported a weak relationship between

health awareness and attitudes regarding natural skin products (Kim & Chung, 2011; Tarkiainen & Sundqvist, 2005; Michaelidou & Hassan, 2008). Although Kim and Chung (2011) indicate a low relationship between health consciousness and attitude, they clarify that health benefits are essential, and recommend that marketers focus on increasing health benefits. Thus, this necessitates further research into health consciousness in other settings (Matic & Puh, 2016).

### 2.3.3 Environmental concern

Environmentalism has become a pressing issue because of environmental damage due to by-products, production processes and environmental disasters (Kalafatis, Pollard, East & Tsogas, 1999). An interest in the welfare of the natural environment has directed some customers toward consuming organic products (Sumi & Kabir, 2018). Environmental concern refers to "the extent to which people are aware of environmental issues and their willingness to solve environmental problems" (Maichum et al., 2016). Consumers engage in conservation behaviour because they are intrinsically concerned about the environment and society (Hartmann & Apaolaza-Inanez, 2012). Maichum et al. (2016) indicate that consumers with higher levels of concern towards the environment may actively purchase green products (Maichum et al., 2016). Sharma and Bansal (2013) clarified that since consumer's concern about environmental issues might not easily translate into pro-environmental behaviours, individuals holding a strong belief that their environmentally conscious behaviour will result in a positive outcome are more likely to engage in such behaviours in support of their concerns for the environment.

Environmental concern has been acknowledged as a significant determinant of environmental behaviour and is predicted by the attitude displayed by consumers towards a specific behaviour (Mamun, 2018). Mohiuddin, Al Masmum, Ali Syed, Masud and Su (2018) revealed that environmental concern has a considerable influence on business students' favourable attitudes toward green vehicles. Anvar and Venter (2014) found environmental concern to be an important determinant of consumer behaviour towards organic products among South African millennials. In addition, Hartmann, and Apaolaza-Ibáñez (2012) showed that consumers view energy conservation more favourably as their

intrinsic environmental concern increases and they develop a positive attitude towards green energy and become amenable to paying a premium for green energy. Paul et al. (2016) found that attitude mediates the relationship between environmental concern and purchase intention of organic products. Therefore, customers showing more concern for the environment are expected to have a positive attitude towards organic personal care products.

### 2.3.4 Willingness to pay more for organic products

Willingness to pay (WTP) refers to the maximum amount of money that a consumer is willing to pay for a particular product before switching (Biwas, 2016). Li and Meshkova (2013) suggest that consumer willingness to pay is a measure of the perceived value of a purchase or usage experience by a customer, and has been used as a form of market differentiation. Thus, consumers continuously assess and evaluate choices between wanting to be socially responsible and wanting positive shopping experiences (Wei, Ang & Jancenelle, 2018). According to Ha-Brookshire and Norum (2011), the sense of moral duty of consumers often exceeds their need for a bargain price, while in other cases, they may choose convenience over ethical obligations.

Some studies highlighted the important relationship between environmental concern and a willingness to pay more for organic products (Kanga et al., 2012; Laroche et al., 2001; Sriwaranun et al., 2015). Laroche et al. (2001) suggest that consumer's environmental concerns encourage consumers to pay higher prices for certain organic products. Lanzini, Testa, and Iraldo (2016) deduces that consumer willingness to pay for organic products is one of the driving factors for companies to make their products and services environmentally friendly.

Another study by Sriwaranun, Gan, Lee, and Cohen (2015) investigated consumer preferences and WTP for organic food in Thailand. The authors found that consumers' willingness to pay more for organic food was dependent on a number of factors, such as past experiences with purchasing organic products, had excellent health, had strong ethical and environmental concerns, and believed that organic products offered higher

quality and health benefits. Similarly, Kanga, Steinb, Heoc and Lee (2012) found that U.S. hotel guests with higher degrees of environmental concerns expressed a higher willingness to pay premiums for hotels' green services.

Furthermore, The Toluna Sustainability Report (2019) reported that 37% of consumers aged 18 - 34 are opting for and willing to pay up to 5% more for environmentally friendly products and are consciously adjusting their shopping behaviour to do the latter. However, customers' positive perceptions and attitudes towards environmental concerns do not necessarily lead to a willingness to pay for organic products (Wei et al., 2018). Several studies showed mixed results regarding consumers' willingness to pay more (WTP) for organic products. For example, Angulo Gil and Tamburo (2003) found that while Spanish consumers were concerned about food safety, 73% of them were willing to pay a premium for a labelled beef with a traceability certification.

The inconsistent results are worrying given that consumers report favourable attitudes towards the environment and organic products in general. In addition, the effectiveness of sustainability-driven marketing strategies depends largely on the adoption of organic products by consumers (Wei et al., 2018). Therefore, since WTP is a critical obstacle preventing green purchases, it is necessary to examine and understand the actions that can mitigate this obstacle (Kanga et al., 2012).

## 2.4 Social media

Since social media is one of the marketing strategies that marketers can use to influence consumer green purchase behaviour, having a comprehensive understanding of social networking is important. The section starts by describing social media. Existing research that seeks to understand social media's effect on consumer behaviour is examined and critically discussed. A general overview of each social media category is discussed, and social media networks are discussed in detail.

### 2.4.1 Defining social media

Social media used interchangeably with user-generated-content (UGC) (Du Plessis, 2010) promotes collaboration and sharing of content, ideas and information, and describes a "...variety of new sources of online information that are created, initiated, circulated and used by consumers intent on educating each other about products, brands, services, personalities, and issues'' (Blackshaw & Nazzaro, 2004: 2). Kietzmann, Hermkens, McCarthy and Silvestre (2011) report that social media is using mobile and web-based technology to create collaborative channels that exchange, co-create, debate, and alter user-generated content between individuals and communities. A literature review reveals that different terms are used to describe social media. As a result, it is difficult to provide a widely accepted definition of social media (Xiang & Gretzel, 2010). Since the current research focuses on social media platforms, it adopts Kaplan & Haenlein (2010: 61), who describe social media as a group of internet-based applications that build on Web 2.0's ideological and technological foundations, allowing user-generated content to be created and exchanged.

### 2.4.2 Social media and consumer behaviour

Social media has been linked to influencing various aspects of consumer behaviour (Ioanăs & Stoica, 2014). It connects businesses to end-consumers directly on time and at a low cost (Kaplan & Haenlein, 2010), as well as influencing customer perceptions and behaviour, and bringing together like-minded people (Laroche et al., 2012). As a result, marketers have realised the influence of social media on consumer behaviour and increased their advertising budgets on social media (Duffett, 2015).

Mangold and Faulds (2009) find that social media has become a primary source for consumers searching for reliable information. Similarly, consumer choice behaviour for organic products is influenced by several factors, such as social influence, peer opinion, and information from valid and reliable sources (Biswas & Roy, 2014). This behaviour is consistent with the psychological concept of social influence, which is rooted in the assumption that a person's behaviour is heavily influenced by the behaviour and presence

of others (Rauniar, Rawski, Yang & Johnson, 2014). Creating and promoting social communication networks between firms and customers may positively affect buying decisions (Kietzmann et al., 2011). Zeithaml (1988) and Schiffman and Kanuk (2009) found that customers' decision to buy a product (purchasing intention) relied mostly on the value of the product and feedback posted by other consumers, e.g. on social media. Thus, social media's interconnected nature exposes individuals to behaviours of others − such exposure may create normative perceptions of social media behaviour (Chu & Kim, 2011).

### 2.4.3 Classification of social media

Understanding how a social media platform functions is important, as it leads to its practical use. Although social taxonomy methods exist (Mangold & Faulds, 2009; Fischer & Reuber, 2011). Kaplan and Haenlein (2010) suggest a taxonomy scheme that classifies social media styles according to their:

a) level of social presence/media resources, and
b) level of self-presentation / self-disclosure (defining six types of social media, as shown in Table 2.1):
    i. Social networking
    ii. Microblogs
    iii. Blogs
    iv. Collaborative projects
    v. Content-creating communities
    vi. Virtual communities

The following is a brief discussion of these social media classifications.

**Table 2. 1: Classification of social media**

| | | Social Presence /Media Richness | | |
|---|---|---|---|---|
| | | **Low** | **Medium** | **High** |
| **Self-presentation/ self-disclosure** | **High** | Blogs & micro-blogs (Twitter) | Social Networking Sites (e.g. Facebook, Instagram) | Virtual social worlds (e.g. Second Life) |
| | **Low** | Collaborative projects (e.g. Wikipedia) | Content communities (e.g. YouTube, Vimeo) | Virtual game worlds (e.g. World of warcraft) |

**Source: Kaplan and Haenlein (2010)**

#### 2.4.3.1 Social networking

Social networking refers to "...the form and substantiation of online social networks for communities of people" (Strokes, 2011:354). These communities include groups of like-minded people that consume and share information. Social networking is enabled through tools provided by the internet to connect and build relationships with others (Stokes, 2011). Over the years, online users have used sites such as Facebook, Instagram, and LinkedIn to connect with friends and colleagues. Facebook is the most dominant social media platform in the world (Sanne & Wiese, 2018)

#### 2.4.3.2 Microblogs

A microblog is a short piece of content tailored for quick audience interactions (Kaplan & Haenlein, 2010). Microblogs combine instant messaging and blogging and allow users to create short messages to be published and shared with an audience online.

Social platforms such as Twitter have become hugely popular forms of this blogging, particularly on the mobile web.

#### 2.4.3.3 Blogs

A blog is a type of website that enables users (bloggers) to post articles on various subjects. Readers are often able to comment on them (Stokes, 2008). Blog providers offer accessible content publishing spaces and tools. The platforms allow blog owners to attach text, graphics, videos, and webpage links, and allow visitors to comment on the original posts − encouraging a two-way communication system. For example, Blogger, Tumblr, and WordPress are blog sites.

#### 2.4.3.4 Collaborative projects

Collaborative projects involve the simultaneous creation and sharing of content and knowledge. Thus, end-users also become co-creators. Wikipedia is a well-known example of a collaborative project.

#### 2.4.3.5 Content-creating communities

According to Kaplan and Haenlein (2010), the main aim of content-creating communities is the sharing of media content between users. This type of content includes videos, pictures, and sound files, for example, on sites like YouTube and Vimeo.

#### 2.4.3.6 Virtual communities

Virtual communities, often referred to as virtual social worlds, allow users to display their behaviour more freely and mostly live virtual life (similar to their real lives (Kaplan & Haenlein, 2010). Some virtual communities are built around e-commerce sites and specialised product or service rating sites. Here, content is provided and shared by users (e.g. opinions about products and services). The real value of online communities comes from discussing ideas, sharing information, and learning from one another.

For the present study, virtual social worlds and the virtual game is not considered for further examination, given that the literature review did not reveal any academic papers examining them in the context of consumer purchase behaviour. Comparably, social media literature suggests that social networks are leading platforms that influence

consumer behaviour (Biwas & Roy, 2014; Mangold & Faulds, 2009). Thus, the present study focuses on social media networking.

#### 2.4.3.7 The rationale for social networking

Social networking sites like Facebook, LinkedIn and Instagram generated the most advertising among academics as well as marketing managers (Schivinski & Dabrowski, 2014). These social networking sites have changed the way people communicate, as consumers not only share information about themselves online but also express their opinions and create content (Sanne & Wiese, 2018). Social networking sites are defined as 'web-based services that enable individuals to build a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection, and view and traverse their list of connections within the system and those made by others' (Boyd & Ellison, 2008). Social networking sites are applications that allow users to connect by developing personal information profiles, inviting friends and colleagues to access those profiles, and sending e-mails and instant messages among themselves (Kaplan & Haenlein, 2010). Schivinski and Dabrowski (2014) describe online social networking as a variety of digital sources of information that internet users create, start, circulate, and consume to educate each other about products, brands, services, personalities, and issues. Social media networking includes a host of online activities − such as blogging, instant messaging, texting, gaming, and more (Boyd & Ellison, 2008).

There are several innovative ways that consumers use social networking sites. For instance, Raacke and Bonds-Raacke (2008) found social connections (i.e., staying connected with friends) and information sharing (e.g., events or gossip) as reasons why people go to social networks. Similarly, Foster, Francescucci and West (2010) found the perceived information value from the community and the connection to friends one of the main motivations for taking part in social networking sites in Canada**.** In addition, a study by Jang, Bucy, and Cho (2018) revealed that self-esteem influences how Facebook users react to portraying their true selves online in the United States. The authors argue that people tend to present a socially desirable, positive self-view while online. Gwena, Chinyamurindi, Marange (2018) revealed that South African university students found

motives for Facebook use positively related to Facebook usage. Dondolo (2014) found that information value, entertainment value, credibility, self-brand congruity and site trust are predictors of Facebook advertising attitude. These findings show that people have different motivations for taking part in social networking, and therefore, marketing managers should understand these behaviours to connect with consumers on these platforms.

Social media penetration has been growing in South Africa. Figure 2.2 below shows South Africa's social media growth trend. For starters, a recent Global Digital Trends Report (2018) reported an increase in the number of people using social media in South Africa for 2018 versus 2017 (Simon, 2018). Facebook, a social networking website, reports that its active users reached 2 billion worldwide; Twitter, a micro-blogging website, has 330 million users posting 500 million tweets a day; and more than 1.5 billion unique users visit YouTube every month, watching more than 6 billion hours of video (Simon, 2018). Based on this literature, this study focuses on Facebook.

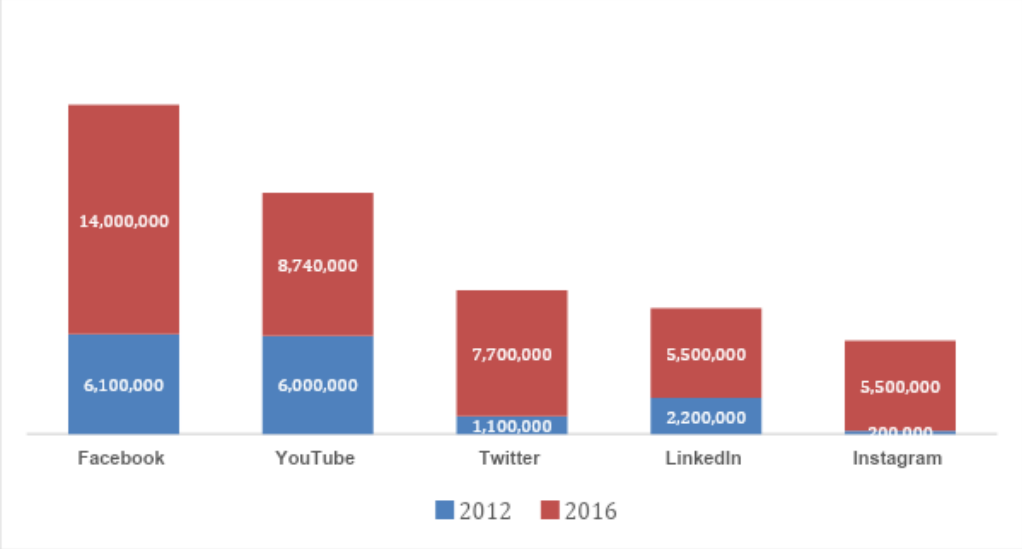



**Figure 2. 2: Social media growth in South Africa (2012 -2016) (Blue Magnet, 2016)**

#### 2.4.3.8 Facebook

Facebook, launched in 2004, is the most dominant social media site globally, with over 2 billion active users (Kemp, 2020). Napoleon Cat (2020) reported that there were 21 260 000 Facebook users in South Africa as of March 2020. Facebook is an online social networking site that empowers individuals to communicate and share information through page creation and customised profiles (Duffett, 2015). Facebook helps its users communicate in two ways. The first is organic (free), which includes likeable and shared brand pages and content posts (including pictures and videos) on brand pages that allow brand and target market engagement and interaction (Curran, Graham & Temple, 2011). In addition, Facebook offers some advertising tools that can be placed anytime, including sponsored posts (boosting posts and promoting pages), pay-per-click advertisements, click-to-site advertisements, carousel advertisements, social plugins or apps, and sponsored stories (Curran et al., 2011). Facebook allows users to set up a free account and implement very targeted advertising based on the massive demographic data available on the site and (Sanne & Wiese, 2018). Facebook also provides insights into how well campaigns do, and how well brand pages do.

Earlier studies using TPB in different online social media contexts found a positive relationship between subjective norms and intent. In the context of Facebook likes and ads, Kim et al. (2015) argue that individuals perceiving higher level of behavioural expectations from significant others are more likely to believe that interaction behaviours are prevalent among other significant behaviours and approve those behaviours. Consumer interconnectivity through social media (such as communities, reviews, or recommendations) is likely to influence consumer environmental awareness and green-buying behaviour (Biwas & Roy, 2014).

Sanne and Wiese (2018) determined that Facebook brand pages enable direct interaction with the brand and its target market and are an ideal way to engage with the target market and discover their feelings and needs. Tan et al. (2013) found a favourable link between social media advertising effectiveness and attitudes, which also includes the intention to buy (behavioural), among 149 Malaysian students. Haigh et al. (2013) reported that

Facebook pages had a beneficial effect on attitudes and purchase intention (behavioural) among 275 respondents. Therefore, this study focuses on Facebook. This makes Facebook an appealing brand market to target this consumer segment with relevant marketing communications strategies and tactics (Duffett, 2015).

## 2.5 The millennial perspective

In this section, the millennial cohort is characterised in terms of their technology adoption and environmental ethics. Millennials also referred to as Generation Y, are aged between 18 and 35 years, and comprise approximately 36% of the South African population (Stats SA, 2016). While there are differing terminology and timeframes to describe the millennial cohorts, the term is understood to refer to people who were born in the period ranging from the early 1980s to mid-1990s and early 2000s. The Pew Research Centre (2018) describes millennials as being born between 1983 and 1996, while Moore (2012) defines millennials as individuals born between 1982 and 2004. Statistics South Africa (2020) define South Africa millennials as individuals born between 1982 and 1999.

### 2.5.1 Millennials and technology

The millennial generation is more technologically advanced than previous generations (Geraci & Nagy, 2004). Technology has allowed millennials to gain instant access to nearly any information (Duffett & Wakeham, 2016). This has distinguished them from their predecessors. Furthermore, many studies have shown that this digital generation prefers to stay connected and multitask using technology (Williams, Crittenden, Keo & McCart, 2012; Nielsen, 2014). Pew Research (2014) refers to millennials as ‘digital natives’, meaning that technology has always been a part of their lives and dramatically affects how this generation lives and works. According to Nielsen (2014), millennials have a more positive view of how technology is affecting their lives than any other generation. Their trust in peer-generated endorsements characterises millennials. Ottoman (2011) highlights that millennials are distrustful of government and authority, and quick to challenge marketing practices they consider inauthentic or untruthful. According to a Forbes (2018) study of 1 628 millennials, they found that more than one-third of millennials prefer to wait until someone they trust has tried something. These peer

reviews are regarded as far more trustworthy than traditional promotional materials that have been produced by the company itself (Harries & Rae, 2009).

### 2.5.2 Millennials and the environment

Millennials are socially and environmentally conscious and prefer brands that reflect that ethic (Smith &. Brower, 2012). Their attitudes towards the environment are positively linked to their pro-environmental actions in the marketplace (Smith & Brower, 2012). Borchers et al. (2007) found that respondents aged below 30 preferred green products over non-green products. D'Souza et al. (2007) also associated green purchase behaviour with the demographic characteristics of being young, affluent, well-educated, and living in urban areas. Over half of Millennials indicated that they sometimes make an effort to buy green products, and about 10% indicated that they often make an effort (Smith, 2010). Nielsen (2014) reports that 66% of Millennials would pay more for environmentally friendly services, products, or brands. However, Ling (2013) showed that their environmental attitudes influence the willingness of the consumer to pay more for green products. Thus, if consumers are environmentally conscious, they will often be willing to pay a premium price for green products. Millennials' expectations from brands and society are different from other generations and must be recognised.

Therefore, brands and marketing practitioners must understand and embrace the characteristics and values of this cohort if they are to create and market-relevant products and services that meet their needs.

## 2.6 Green marketing

Marketing green products require new approaches than marketing conventional products (Groening et al., 2018). This led to enormous growth in marketing literature on green consumerism (Mishra & Sharma, 2010; Rawat & Garga, 2012). Consumers have increasingly become aware of the relevance of environmental issues in current life (Leonidou, Katsikeas & Morgan, 2013). As a result, there is a need for organisations to gain insight into the role of green marketing in consumer behaviour (Groening, Sarkis & Zhu, 2018). Moreover, the need to recognise green buying behaviour is especially timely

due to developments in environmental, science and communication, such as the internet and social media, and increased consumer awareness and environmental concerns (Groening et al., 2018).

Many studies focus on the role of green marketing in addressing sustainable development challenges (Kardos, Gabor & Cristache, 2019; Ottman, 2011). Mishra and Sharma (2010) point out that green marketing offers businesses the opportunity to gain and maintain a competitive advantage while addressing the challenge of advancing economic development and environmental protection simultaneously. Papadas, Avlonitis and Carrigan (2017) argue that a business cannot thrive solely by emphasising a green element of a particular product, but must show commitment at various levels, such as production processes or environmental engagement. Green marketing reflects a new dimension of corporate economic, social, and environmental responsibility (Kardos et al., 2019).

The increase in consumer awareness about environmental challenges and stricter regulations imposed by various governments, especially in developed economies, has placed the demand for green products in focus (Paul et al., 2016). That being the case, consumers are inclined to take some responsibility to reduce environmental damage through the consumption of environmentally friendly products (Ottman, 2011). Consecutively, this has an impact on consumer products and business marketing as they must respond to this green challenge (Ginsberg & Bloom, 2004). Thus, environmental problems and their adverse impact on human health have become a crucial issue among academic, government and private organisations (Maichum et al., 2016). Green marketing can play some role in reducing the impact of climate change since there is enough evidence to support the fact that human activities are the major contributors towards climate change (Rawat & Garga, 2012).

### 2.6.1 Defining green marketing

Defining green marketing is complicated as different concepts collide and clash. Mishra and Sharma (2010) indicate that this ambiguity is due to different financial, environmental, and retail meanings attached to this phrase. Scholars define green marketing using a range of terms (e.g., green marketing, ecological marketing, environmental marketing, and even responsible marketing) (Polonsky, 2011:1311).

The American Marketing Association (AMA) "stated that the green marketing approach is to market products focused on environmental safety; it incorporates business activities consisting of packaging modification, manufacturing process and green advertising" (Ham, 2011:384). According to Leonidou, Katsikeas and Morgan (2013:153) green marketing describes "marketing practices, policies, and procedures that explicitly account for concerns about the natural environment in pursuing the goal of creating revenue and providing outcomes that satisfy organisational and individual objectives for a product". Groening et al. (2018) state that green marketing describes "marketing activities designed to demonstrate the firm's goal of minimising the environmental impact of its products and services".

Although different scholars give different definitions of green marketing, in general, they accept that it is the marketing of products and businesses that contribute substantially to the environment (Leonidou et al., 2013). Therefore, in green marketing, all operations are designed to generate and facilitate any transactions designed to meet human needs or desires, so that these needs and desires are fulfilled with a minimal detrimental impact on the natural environment (Polonsky, 2011).

### 2.6.2 Green promotion

Green promotion programs reflect the communications aimed at informing stakeholders of the firm's commitment to social and environmental efforts (Leonidou et al., 2013). Green promotion is all forms of marketing communications – such as advertising, promotion of sales, direct sales, and public relations (Ham, 2011). Some businesses have

sought to market themselves and their products by associating expressly or implicitly with environmental or social issues (Belz & Peattie, 2009).

Advertising is one of the most contentious fields of green marketing and is frequently criticised primarily for its role in promoting wasteful consumption. It is also criticised for the money spent on transmitting messages to customers and the implementation of green goods as over-simplified solutions to complex problems in the environment (Ham, 2011). Chang (2011) argues that the response of consumers to green ads is complex. Green branding values must be effectively communicated to produce environmentally sustainable products (Menon & Menon, 1997).

Green communication is a strong focus of dialogue with stakeholders, particularly customers, aimed at informing and educating those customers and establishing the company and its products' social and environmental credentials (Belz & Peattie, 2009). Appeals to a consumer's social awareness are expected to be enough to persuade them to buy the product (Laroche et al., 2001). Grimmer and Woolley (2014) suggest that if pro-environmental consumption aligns with a consumer's self-interest, a higher level of such consumption will follow.

Peattie and Charter (2005) describe that public relations have also been described as a critical communication channel for businesses to communicate their eco-performance messages with both brands and corporate-level communications aimed at building corporate credibility and branding. Green concerns offer incentives for insightful and emotional marketing communications (Ham, 2011). Green marketing is, thus, an environmentally friendly tool for future generations. It impacts positively on environmental safety. As a result of the growing concern of environmental protection, a new market is emerging – the green market. Green marketing is, therefore, not only an environmental tool but also a marketing strategy.

### 2.6.3 Organic personal care products

Organic personal care products have made headways among global consumers. According to Amberg and Fogarassy (2019), the cosmetics industry has significantly diversified its management and marketing emphasis on customer needs due to the rising consumer trends and demand for natural cosmetics. A majority of consumers support and are willing to pay more for green products (Ottman, 2011), but the reality is that higher-priced green products have always struggled for market share (Lin et al., 2018).

Organic personal care products refer to products that use natural, organic, biodegradable materials, recycled packaging and are manufactured under minimal environmentally damaging processes (Ling, 2013). In addition, the organic product market is expanding worldwide in various industries such as food, fashion, and cosmetics (Cervellon & Carey, 2011). Interest in organic personal care products and cosmetics has risen exponentially as buyers and advertisers respond to popular media about healthy lifestyles (Nielsen, 2018). Technological advances and product innovation are driving the development of the modern cosmetics industry (Matić & Puh, 2015).

The Kline Group (2016) classifies organic personal care according to the following category types: skincare, hair care, oral care, and other cosmetics (deodorants, feminine grooming, and hand hygiene). According to a Grand View Research Inc (2018) report, the skincare segment has dominated the market in recent years. It is expected to remain the same over the forecast period due to rising living standards in emerging markets, beauty preferences, growing customer worries about the harmful effects of pollution and global warming. Figure 2.3 highlights the US market share of organic care products. The graph shows that skincare and hair care dominate the sales market.

According to the Department of Trade and Industry (DTI) (2018), data from the South African cosmetics industry has not been updated since 2010. Nevertheless, for 2010 the DTI estimates that the total size of the retail market for South African cosmetics and personal care products was measured at R25.3 billion and contributed 1.0% to gross domestic product (GDP). The following were listed as South Africa's top five trade groups

in 2010: fragrances, haircare, skincare, deodorants, and bath and shower, accounting for two-thirds of the total market. However, while DTI reports robust growth for the natural and organic cosmetics market, the size of the South African demand for this sector is uncertain.

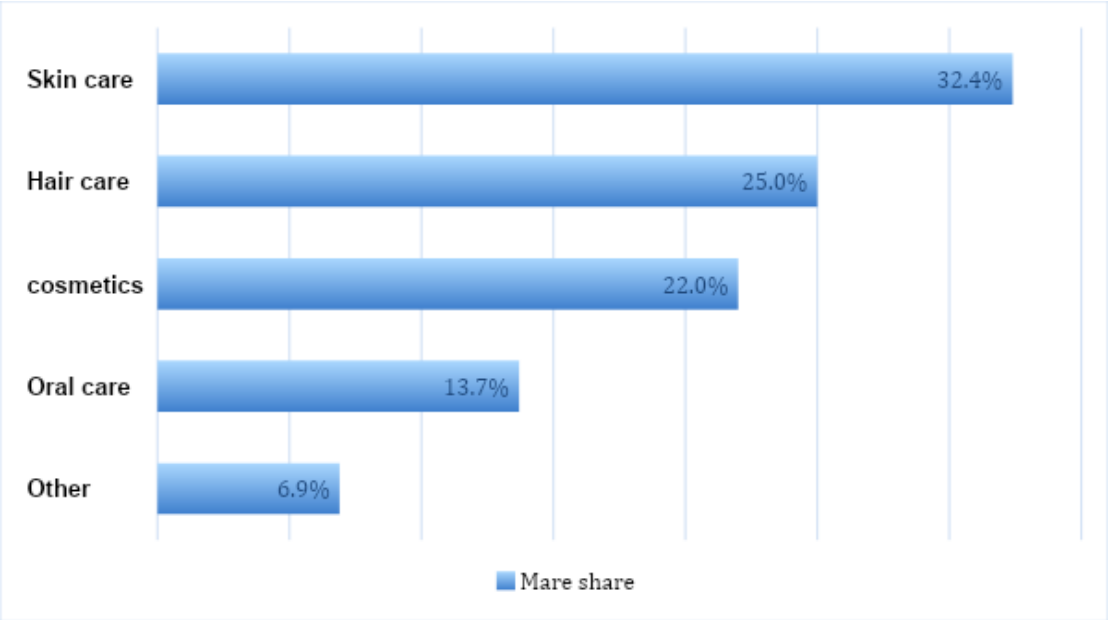



**Figure 2. 3: Distribution of the global natural and organic beauty products market as of 2017, by product. (Grand View Research, Inc, 2018)**

Market research suggests that Asia and Brazil show the fastest growth in organic and personal care products (Kline Group, 2016). Growing consumer interest and adoption of natural, organic, and ethical cosmetics around the globe has driven this segment's outstanding market expansion (Todd, 2004). Some of the world's leading manufacturers of organic care products include Aveda (Estée Lauder), The Body Shop (L'Oréal), Burt's Bees (Clorox), Dr Hauschka Skin Care, Jurlique and L'Occitane. Personal care business research focused on US, European and Asian markets (Ling, 2013; Kim & Chung, 2011; Todd, 2004). Ling (2013) has shown that environmental awareness has a positive impact on consumer purchases of organic care products. Todd (2004), on the other hand, showed a robust aesthetic-ethical connection. As mentioned earlier, most organic personal care products studies focus on developed countries. The current study, therefore, considers this concept in the South African context.

## 2.7 Summary

The millennial cohort has been recognised globally for their higher levels of adoption of social media and environmental awareness. The emergence of environmental issues and climate change have become the focus of attention of academics, marketers, and governments (Maichum et al., 2016). This paved the way for a new paradigm in marketing strategy. Green marketing can help mitigate climate change impacts by promoting ethical consumerism, as there is considerable evidence that human actions are the main contributors to climate change (Rawat & Garga 2012). Therefore, sustainability needs to be considered when developing a marketing strategy, which means businesses need to adopt sustainability in strategic marketing practices and marketing mix.

# CHAPTER 3: RESEARCH METHODOLOGY

## 3.1 Introduction

The purpose of this chapter is to delineate the research design and methodology. This chapter also provides justifications for the methods and research approaches adopted in this study. Descriptive research design has been employed for this study. A research paradigm used to identify the designs that are suitable for the topic being investigated has been discussed. This chapter comprehensively discussed the two-research paradigm, namely, positivism paradigm, and interpretivism paradigm. The sampling design has been discussed in this chapter and followed by the two common research approaches used in research, namely, qualitative, and quantitative. The sampling procedure involves defining the target population of the study, identifying the sample frame, selecting suitable sampling techniques, and determining the sample size. The measurement instrument design and pilot testing of the measurement instrument have been outlined. The data preparation procedure and data analysis techniques applied in this study has been explained. Lastly, the conclusion of the study has been provided.

## 3.2 Research paradigm

All research is based on fundamental philosophical assumptions about what constitutes ‘true' research and which research methods are appropriate for knowledge creation in a study (Antwi & Hamza, 2015). Paradigm, according to Kuhn (1977), refers to a research culture with a set of beliefs, values, and assumptions that a research community shares in the nature and conduct of research. Similarly, Schwandt (2001) described a paradigm as a shared world view reflecting disciplinary beliefs and values, and guiding how problems that arise are solved. The term, ‘paradigm’, originated from the Greek word, ‘paradeigma’, which means ‘pattern’. A paradigm makes up four elements, namely, ontology, epistemology, methodology, and methods (Guba & Lincoln, 1998). The following section discusses several types of research paradigms.

### 3.2.1 Ontology

Ontology is concerned with the conclusions we make that something is true or actual, or the very existence or substance of the social phenomenon we are investigating (Scotland, 2012). Reality is viewed as subjective and depends on how it is perceived (Creswell, 2007; Punch, 1998). It is all about the real world and its life and practice (Guba & Lincoln, 1994). Scotland (2012) states that researchers should take a position on how they see things and how things work. There are two ontological positions − objectivism and constructivism − based on these two views of reality (Chowdhury, 2019).

The objectivist stance suggests that the human mind is not enough in understanding, perceiving, or evaluating reality, and therefore individual opinions and subjective evaluations are discounted, and reality is to be taken as fixed, precise, and measurable (Chowdhury, 2019). Constructivists, however, assume that knowledge is subjective because it is socially constructed and mind-dependent (Scotland, 2012). The truth lies within the human experience. Therefore, statements on what is true or false are culturally, historically, and sense-dependent, although some may be universal. In this context, tales, belief systems and statements of celestial and earth links find space as valid knowledge.

### 3.2.2 Epistemology

Epistemology focuses on how knowledge is acquired (Scotland, 2012). It describes how we know something; how we know the truth or reality (Kivunja & Kuyini, 2017). Guba and Lincoln (1994) explain that epistemology asks the question, ‘what is the nature of the relationship between the known and the known?’ Kivunja and Kuyini (2017) emphasise that epistemology is important because it allows you to build confidence in your results. It affects how you will discover knowledge in the social context you will investigate. There are two epistemological positions, positivism and interpretivism, based on these two views on understanding truth (Chowdhury, 2019). The positivism and interpretivism paradigms are discussed in the following section:

#### 3.2.2.1 Positivism paradigm

Positivism is based on the view that science is the only foundation of empirical intelligence. This claims that the methods, strategies, and procedures used in sciences provide the most robust basis for social world study (Kivunja & Kuyini, 2017). On the ontological level, positivists believe truth is given objectively and is measurable using properties independent of the researcher and instruments (Antwi & Hamza, 2015). Positivist epistemology is objectivism. For the positivist, knowledge is implicit in the natural science paradigm. Positivists view knowledge as beliefs or facts that can be empirically tested, confirmed, verified, or disconfirmed (Scotland, 2012). Study approaches are quantitative, including designs for experiments, quasi-experiments, correlation, causal-comparative, and surveys. This implies that findings from positivist studies may have high-quality standards of validity and reliability (Pham,2018) and be generalised to the large scale of the population (Chowdhury, 2019). Although positivism allows researchers to overlook human emotion and behaviour, there is no assurance that this will always occur during studies (Johnson, 2014). In addition, the inaccuracy of scientific data obtained in this paradigm should be carefully reviewed − as in some circumstances where respondents may choose random responses rather than credible responses or are unable to provide answers that are more important to their cases.

#### 3.2.2.2 Interpretivism paradigm

Interpretivism or constructivism differs from positivism on assumptions about the nature of reality, what counts as awareness, and its sources, values, and role in research (Scotland, 2012). Interpretivism assumes that individuals perceive and interpret social reality according to the political positions they hold. Thus, information is personally experienced, rather than gained or forced from outside (Chowdhury, 2019). One of the benefits of this paradigm is that with diverse views to look at phenomena, interpretive researchers can not only identify objects, persons, or events but also consider them in a social context (Pham, 2018). Furthermore, researchers can also perform these forms of research in a natural setting using key methodologies such as grounded theory,

ethnography, case study or life history to provide more accurate knowledge about the research object (Mertens, 2009).

Interpretivists could adapt an inter-subjective epistemology and the ontological assumption of socially constructed reality. Ontologically, on the question of what truth is, interpretivists assume it is socially constructed (Creswell, 2014; Mertens, 2009) and there are as many intangible realities as people build them. Therefore, reality is mind-dependent and personal or social. Epistemology interpretivists believe that knowledge is subjective because it is socially constructed and mind dependent. The truth lies in the human experience (Pham, 2018). Therefore, claims of right or wrong are culturally-, historically-, and sense-dependent, although some may be universal (Creswell, 2014). In this context, myths, belief systems and assertions of divine and earth relations find space as valid knowledge. Interpretative research aims to interpret people's experiences. Study purpose expresses the interpretive researcher's assumptions in trying to understand human experiences (Mertens, 2009).

Different paradigms are founded on their own distinct ontological and epistemological beliefs, so they have different assumptions of truth and awareness that underpin their research methodology (Scotland, 2012). Table 3.1 provides a summary of the two fundamental philosophical principles of science, ontology, and epistemology. Although ontology is about reality itself (what is truth?), epistemology is about ways of knowing reality (how can we know reality?). Two epistemological positions, positivism and interpretivism, follow the two ontological positions described above. A constructive epistemological approach suggests that the human mind is not enough to recognise, interpret, or assess reality (Scotland, 2012). The interpretative epistemological position on the side would allow a researcher to go beyond settling for what is out there, discernible to the eye, visible and measurable (Chowdhury, 2019).

**Table 3. 1: A comparison of ontology and epistemology**

| **Ontology** | **Objectivism** | **Constructivism** |
|---|---|---|
| **Epistemology** | **Positivism** | **Interpretivism** |
| Reality | External, stable, ordered, patterned, pre-existing | Internal, fluid, socially constructed, multiple, emerging |
| Knowledge | Objective, measurable, value-free, universal, decontextualized | Subjective, indeterminate, value-rich contextualized |
| Aim | Explanation, prediction, control | Description, understanding, empathy |
| Researcher | Disinterested scientist | Participant-interpreter |

**Source: (Chowdhury, 2019).**

Different methodologies may be associated with appropriate paradigms. For example, a positivist paradigm adopts a quantitative approach, while a constructivist or interpretative paradigm traditionally employs a qualitative methodology (Chowdhury, 2019).

Comparing the various paradigms, this study supports a positivist paradigm as it seeks to find a relationship between the constructs defined for this study and also uses objective available data collection and analysis techniques (Kivunja & Kuyini, 2017). Positivism's central idea is to classify issues, state a hypothesis, verify the hypothesis, and summarise data to provide generalisable conclusions (Maziriri, 2020)

## 3.3 Research design

Sekaran and Bougie (2013:95) define a research design as “the blueprint for the collection, measurement and analysis of data, based on the research question of the study”. In addition, research design refers to a research logic or master plan that clarifies how to perform the analysis (Thomas, 2010). It thus provides guidance from fundamental philosophical assumptions on research design and data collection (Creswell, 2014). According to Mouton (2012), the primary function of the study design is to allow the researcher to predict what the relevant research decisions are likely to be and optimise

seeking validity. Malhotra (2010) suggests a general criterion for choosing a good research design, namely whether the design would do its utmost to provide accurate answers to the research question. Research design, therefore, provides the researcher with a specific research framework; it guides processes, decisions, and interpretation basis.

Although there is no agreement on the classification of distinct types of research designs, many authors agree that one can distinguish between non-experimental and experimental research when it comes to quantitative research designs (Jalil, 2013). Salkind (2012) classifies research designs into experimental, quasi-experimental and non-experimental designs. Salkind (2012) also suggests that experimental research designs are correctly used when one wants to determine a cause-and-effect relationship between variables; in other words, when determining if one variable causes a difference or change in another variable. Experimental research designs are appropriate to use for answering these types of questions, because they allow for a higher degree of control by the researcher, thus enhancing the degree of precision with which we can answer this type of question. The non-experimental design does not balance one group with another, but it describes the relationship between an intervention (treatment) and its effects on the target population (Salkind, 2012). On the other hand, Wiids and Diggines (2011) identify study design types in exploratory, descriptive, and causal studies. Below is a brief discussion of each research design.

### 3.3.1 Exploratory research

According to Wiids and Diggines (2011), exploratory research is intended to explore an unknown area. In other words, it is a research design for those projects that are addressing a subject about which there are high levels of uncertainty and ignorance, and when the problem is not very well understood (Lewis & Thornhill, 2012). Exploratory research is necessary when more information is required about a problem or a phenomenon (Wiids & Diggines, 2011). The main aim of an exploratory study is to get insight and develop understanding rather than to collect accurate, replicable data (Singh,

(2007). This type of study, therefore, involves conducting in-depth interviews, analysing case studies, and using sources.

### 3.3.2 Causal research

The aim of causal studies is twofold: one, to understand which variables are the cause and which are the effect, and the other, to determine the nature of the relationship between causal and predictable factors (Wiids & Diggines, 2011). Unlike descriptive research, it is highly organised and known to use control procedures for assessing causal relationships during experimental designs (Salkind, 2012). Causal analysis, however, differs in its effort to explain the relationship of cause and effect between variables. The cause-and-effect relationship between variables is explored through two methods of research: laboratory experiments and field study (Wiids & Diggines, 2011).

### 3.3.3 Descriptive research

According to Shuttleworth (2008), descriptive analysis is a scientific method that involves the observation and definition of a subject's behaviour, without affecting it in any way. This looks at the situation as it is. Salkind (2012) describes descriptive analysis as taking a snapshot of a situation at some point. It can be used to identify the variables' characteristics or the degree to which variables exist in a particular context (Salkind, 2012). If one wants to define variables in a study without analysing the link between variables, a descriptive non-experimental research design will be used. Descriptive research differs from exploratory research in that it is based on some earlier understanding of the nature of the research problem (Wiids & Diggines, 2011). Methods used in descriptive research include observational methods, case-study methods, and survey methods (Wiids & Diggines, 2011). Survey research is one of the most used research designs in business studies (Jalil, 2013).

For this study, descriptive research was selected because it helps provide an accurate portrayal or account of characteristics such as behaviour, opinions, abilities, beliefs, and knowledge of an individual, situation, or group (Salkind, 2012). Survey methods typically involve descriptive research (Hair, Black, Babin & Anderson, 2010). The survey design

enabled indirect observation using structured interviews and questionnaires, and a broad overview of a larger population sample (Mouton, 2001). This design enabled a larger number of millennials to be included in the study. It was suitable for use in gathering information on the impact of social media on purchasing intentions of organic products.

### 3.4 Research approach

Creswell (2014) stressed the significance of illustrating the research approach as an effective strategy to enhance social research validity. According to Creswell (2014), research approaches are planning and research procedures that range from general assumptions to specific data collection, analysis, and interpretation approaches. There are various research approaches. When looking at these various strategies, the researcher must adopt the one that suits the research purpose. In addition to the research questions and goals, the selection of a research strategy is determined based upon factors such as existing knowledge, the amount of time available and other resources as well as the philosophic principles of the researchers (Saunders et al., 2009). Although there are other differences in research types, qualitative and quantitative classifications are the most common methods (Burns & Grove, 2009).

According to Burns & Grove (2009), quantitative analysis is a structured, aimed, systematic method that uses numerical data to obtain world knowledge. Quantitative research focuses on statistical analysis and quantitative knowledge (Lund, 2005:128; Thiétart, 2007). Quantitative approaches specifically use a questionnaire. Thomas (2010) points out that quantitative science often requires evaluating numerical data obtained through some formal questionnaire. Quantitative research is deductive (Rovai et al., 2014). Quantitative researchers see the world as outside themselves, and there is "... an objective reality independent of any interpretations" (Rovai et al., 2014:4). Quantitative researchers measure variables on a sample of subjects and describe the relationship between variables using impact statistics (including correlations, relative frequencies, or differences between means). Their focus is primarily on hypothesis testing (Antwi & Hamza, 2015). Quantitative methodology is characterised as a social research approach

that applies natural science and a positivist approach to social phenomena (Bryman, 1984).

Qualitative research emphasises exploration and understanding. ".. the value individuals or groups ascribe to a social or human problem" (Creswell, 2014:4). According to Denzin and Lincoln (2003:24) "Qualitative research involves an interpretive, naturalistic approach to its subject matter; it attempts to make sense of phenomena or perceive them in terms of the meaning that people bring them." Using 'soft' data, it gets 'rich' data.' Myers (2009:5) states that "qualitative study is designed to help researchers understand people and their social and cultural backgrounds". There are some differences between qualitative and quantitative research, including how data are collected, analysed, and presented (Antwi & Hamza, 2015). While quantitative research presents statistical results represented by numerical or mathematical data, in "natural settings," qualitative research presents data as a succinct explanation with words and tries to explain phenomena. It suggests that qualitative researchers study things in their natural settings, trying to make sense of or view phenomena in terms of their definitions "(Denzin & Lincoln, 2000:3). Table 3.2 below outlines the distinction between qualitative and quantitative studies.

**Table 3. 2: Quantitative Research versus Qualitative Research**

| **Quantitative Research** | **Qualitative Research** |
|---|---|
| Researchers test hypotheses that are stated at the beginning. | Researchers capture and discover meaning once they become immersed in the data. |
| Concepts are in the form of distinct variables. | Concepts are in the form of themes, motifs, generalisations, and taxonomies. |
| Measures are systematically created before data collection and are standardised. | Measures are created in an ad-hoc manner and are often specific to the individual setting or researcher. |
| Data are in the form of numbers from precise measurements. | Data are in the form of words and images from documents, observations, and transcripts. |
| The theory is mainly causal and is deductive. | Theory can be causal or non-causal and is often inductive. |
| Procedures are standard, and replication is frequent. | Research procedures are particular, and replication is exceedingly rare. |

| | |
|---|---|
| The analysis proceeds by using statistics, tables, or charts, and discussing how what they show relates to hypotheses. | The analysis proceeds by exacting themes or generalisations from evidence and organising data to present a coherent, consistent picture. |

**Source: (Newman, 2012)**

This study adopted a quantitative research approach. The choice for quantitative research is because it enhances results accuracy through statistical analysis (Creswell, 2014), and avoids the subjectivity elements associated with a qualitative approach (TerreBlanche et al., 2006). Furthermore, quantitative research is considered objective, where the researcher is independent of research, is value-free and unbiased, structured, and accurate and reliable through reliability and validity testing, and is also used to recommend a final action (Park & Park, 2016).

### 3.4.1 Justification of a quantitative research approach for the study

This study is quantitative, using a survey research concept. A descriptive survey was selected because it provides an accurate description of the characteristics, such as behaviour, opinions, abilities, beliefs, and knowledge of an individual, situation, or group (Salkind, 2012). This design was chosen to fulfil the study's goal of determining the factors that influence millennial consumers' attitudes towards organic products.

A survey design offers a quantitative or empirical overview of population trends, behaviours, or views through analysing a population sample. Researchers generalise or draw population inferences from study findings (Creswell, 2014). The quantitative approach is consistent with the positivist view that a single truth can be evaluated accurately and validly using scientific principles (TerreBlanche et al., 2006). However, due to the large sample size and methodological rigour, the quantitative analysis provides an advantage in terms of generalisability, reliability, and validity, but is time-consuming and sometimes very costly (Salkind, 2012).

## 3.5 Sampling design procedure

Sampling design is a schematic used to decide who should participate in a test (Aaker et al., 2013). Sampling involves defining the study's target population, finding the sample frame, selecting a suitable sampling technique, and determining sample size (Tustin, Lighthelm, Martins & van Wyk, 2005). This section provides an overview of the target population, sample size and sampling methods.

### 3.5.1 Target population

The first step in the sampling process is defining the population (Wiid & Diggines, 2011). A population can be defined as all people or items that one wishes to understand, while sampling is the process of selecting a segment of the population for investigation (McDaniel & Gates, 2005). It is a process of selecting a sample of units from a data set to measure the characteristics, beliefs, and attitudes of the people (Salkind, 2012). The population in this study consisted of active Facebook users aged between 18 and 25 years (millennials) living in South Africa at the time of data collection (2018). This segment is targeted as they provide an indication of future purchase tendencies (Duffet & Wakeham, 2016), and are therefore expected to play an active role in sustainable consumption (Smith, 2010). In addition, Ferrell & Hartline (2014) suggest, this age group is highly influenced by their natural and social environment, which affects market knowledge and purchasing decisions.

### 3.5.2 The sample frame

Wiid and Diggines (2011:196) describe a sampling frame as “as a list of all the sample units available for selection”. Common types of sample frames are lists of registered voters, customer lists and maps (Churchill & Lacobucci, 2010). Malhotra (2010) point out that sampling frames are often not easy to access or are not up to date. Wiid and Diggines (2011) caution researchers to investigate the sample frame carefully for missing data, duplicate entries, and foreign elements. In this study, there was no sampling frame; thus, the researcher chose to use a non-probabilistic sample method – the sampling method is discussed next.

### 3.5.3 Sampling method

Salkind (2012:96) defines a sample as a "sub-population." Sampling is the method of selecting units (e.g. individuals, organisations) from a population of interest so that the analysed sample is representative of the wider population, ensuring that the findings can be generalised. Sampling methods for collecting representative samples fall into two categories: probability and non-probability (Salkind, 2012). For probability sampling methods, a known positive likelihood is associated with each population element when picking the element as part of a sample (Wiid & Diggines, 2011). Each method is usually related to quantitative research due to careful attention to randomness and study distribution during selection (Salkind, 2012). Nevertheless, non-probability sampling involves all sample surveys where the collection probability of population elements is unclear or uncertain (Wiid & Diggines, 2011). Therefore, the sample is based on the researcher's personal judgment. This segment addresses different sample methods. It also gives a justification for the researcher's sampling method preference.

#### 3.5.3.1 Probability sampling

As previously noted, any sampling method that uses some form of random selection is a probability sampling method (Wiid & Diggines, 2011). In other words, the likelihood of any member of the selected population is known (Salkind, 2012). There are several types of sampling probabilities. A brief explanation of each type is given below.

##### 3.5.3.1.1 Simple random sampling

Simple random sampling is a sampling process that selects population units individually and directly through a random process (Wiid & Diggines, 2011). Simple random sampling requires enough information about each person when the population elements are people to be identified (Salkind, 2012).

##### 3.5.3.1.2 Systematic sampling

Systematic sampling draws the sample elements from a complete list of population elements (Wiid & Diggines, 2011). Although systematic sampling is more open and less

hassle than simple random sampling, Salkind (2012) argues it decreases chances of selecting individual participants. It is less objective than simple random sampling (Salkind, 2012).

#### 3.5.3.1.3 Stratified sampling

Stratified sampling is a population sampling method that can be sub-populated. It is the process of dividing people into homogeneous subgroups before sampling (Wiid & Diggines, 2011). Salkind (2012) suggests stratified sampling to ensure that the population layers are fairly represented in the sample. According to Wiid and Diggines (2011), stratified random sampling is used when, first, the population is heterogeneous on the variable or characteristic being studied and associated with population elements. Second, the population can be divided into strata, all more homogeneous about the variable being studied than the population. The challenge of using this method is that much information about the population being sampled is needed for stratified sampling to be possible (Hayes, 2020). Researchers must identify and classify each member of a population being studied into one and only one subpopulation. As a consequence, stratified random sampling is disadvantageous because researchers cannot reliably assign every population member into a subgroup (Hayes, 2020).

#### 3.5.3.1.4 Cluster Sampling

Cluster sampling is a sampling method that recognises and involves clusters of participants representing the population (Jackson, 2011). Cluster sampling has advantages and disadvantages. For instance, this sampling method generally provides less precision than a simple random or stratified sample, given equal sample sizes. However, if travel costs between clusters are high, cluster sampling may be more cost-effective than other methods (Salkind, 2012). Nonetheless, when determining the cluster size, the researcher must compromise between precision and cost (Wiid & Diggines, 2011).

#### 3.5.3.2 Non-Probability Sampling

In the second general sampling strategy category, non-probability sampling, the probability of selecting a single individual is unknown (Salkind, 2012). However, Salkind (2012) states that random sampling may occur in applied social research where it is not feasible, practical, or theoretically sensitive. There are several non-probability alternatives − some are discussed below.

##### 3.5.3.2.1 Convenience sampling

A convenience sample is a sampling method where the sample is taken from a section of the population that is readily available to the researcher (Salkind, 2012). De Vos (1998) points out that convenience sampling is the rational choice where all members of a population cannot be identified. Sampling convenience is also useful in exploratory research, as ideas and insights are more important than scientific objectivity (Wiid & Diggines, 2011).

##### 3.5.3.2.2 Quota sampling

Quota sampling is a combination of convenience sampling and judgement sampling (Wiid & Diggines, 2011). The researcher uses census or other available sources to classify the population. Then, the application of quota sampling ensures that the sample group represents the characteristics of the population chosen by the researcher (Salkind, 2012).

##### 3.5.3.2.3 Judgement sampling

Judgement sampling is a sampling method where the sampling elements are selected subjectively and deliberately by the researcher to be representative of the population under study (Wiid & Diggines, 2011). Wiid and Diggines (2011) also note that the limitations of this method are that different experts have different opinions about which population elements should be selected. However, Salkind (2012) indicates that judgement sampling is useful when large samples are not necessary − for instance, during questionnaire pre-testing and exploratory research.

#### 3.5.3.2.4 Snowballing sampling

Snowball sampling is a sampling method where existing subjects recruit future subjects from among their acquaintances (Baltar & Brunet, 2012). Roberts (2015) points out that this sampling method is a ‘chain-referral' technique allowing data to be collected across existing social structures. In this study, not every South African millennial had an equal chance of being included in the survey since Facebook had no census or a complete list of millennials. Consequently, there was no sampling frame from which to draw a sample randomly to ensure that every South African millennial had an equal chance of being included in the survey. The researcher, therefore, chose non-probability snowball sampling.

### 3.5.3.3 The rationale for virtual snowball sampling

A considerable proportion of social interactions occur today using online social media as communication channels. As a result, work has become much quicker, cheaper and with far fewer human resources than ever before (Roberts, 2014). Baltar and Brunet (2012:58) state that "... the internet is opening up new ways of investigating social and behavioural sciences because many scientific questions arise about some target population who do not look for generalised, but representative results”.

In some empirical studies, social networking sites have been used to access ‘hard to reach’ samples (Dusek, Yurova & Ruppel, 2015; Roberts, 2014; Baltar & Brunet, 2012). "Digital social networking sites provide innovative ways for researchers to conduct research," Brickman-Bhutta (2009), noted. Baltar and Brunet (2012:58) added that social media is an excellent complement to the sampling of populations, which is difficult to achieve because they allow the sample size and size to be expanded, characteristics which constitute the principal limitations of this type of research. Facebook is an ideal site for social networking samples (Baltar & Brunet, 2012).

#### 3.5.3.3.1 Advantages

Virtual snowball sampling technique using social networking has several advantages. Baltar and Brunet (2012) accurately describe the following Facebook snowball sampling benefits:

- Combining Facebook recruitment with an online survey reduces time and monetary costs, and minimises response bias.
- Facebook can be an efficient source of information that can extend the sample size of studies using ascending methodologies, enhancing results validation and representativeness.
- Facebook was also found to provide a higher response rate than traditional snowball techniques − due to the personal connection between the researcher and respondents and the confidence respondents feel when the researcher's personal information on Facebook is available.

#### 3.5.3.3.2 Disadvantages

Virtual snowball has some known drawbacks that Baltar and Brunet (2012) describe as:

- The Lack of objective, numerical criteria to stop the investigation.
- Those with large personal networks may be over-represented or over-sampled, causing those who are isolated to be excluded.
- Response rates may be challenging to define and estimate
- It is not possible to determine the sampling error and to make statistical sample inferences.
- Privacy-related issues with how data will be used.

The reason for using virtual snowball sampling for this analysis is that it overcomes the weakness of conventional snowball sampling technique. Baltar and Brunet (2012) concluded that virtual snowball sampling was an appropriate tool for studying communities that are difficult to study using traditional survey methods. Dusek, Yurova, and Ruppel (2015) also found that social media has the advantage of time and cost savings, increased response rates, and effective recruitment.

#### 3.5.3.4 Sample size

The sample size for this study was 377 people. For this study, the sample size was considered adequate as earlier studies testing similar constructs used sample sizes between 200 and 400 participants (Dehghani & Tumer, 2015; Sanne & Wiese, 2018).

## 3.6 Data collection

“Data collection refers to the precise and systematic gathering of opinions and views that have the potential of addressing the research problem” (Murthy & Bhojanna 2010:241). Primary data was collected through a web-based electronic questionnaire. Qualtrics was utilised to develop the web-based electronic questionnaire for the current study. Qualtrics is a software programme that enables researchers to conduct various kinds of data collection and analysis, including market research (Scott, 2012). Qualtrics was employed for this study because it allowed the researcher to construct surveys, distribute them to respondents and report on the obtained results.

The researcher used the following procedure for data collecting: Firstly, the researcher created a Facebook group that potential participants were free to join. Furthermore, following Scott and Vigar-Ellis (2014), this was done to improve the findings’ generalisability. Using snowball sampling, these 40 respondents were asked to complete the questionnaire and pass it on to their Facebook friends. Finally, once the initial contacts used to start chains in the study were exhausted, the researcher faced the problem of initiating new ones. Therefore, it was decided to create a Facebook advert to overcome this challenge. Participants were targeted by their location and age. Facebook users aged 18-25 in South Africa were targeted. Initial participants were screened for eligibility to participate in the study through filter questions, such as their age and citizenship (Duffett & Wakeham, 2016).

### 3.6.1 Questionnaire design

A questionnaire is described as "a set of questions designed to generate data necessary for a research project" (Parasuaman, Grewal & Krishaman, 2004:329). Questionnaires use sophisticated questions, often ranking or scoring options, or using closed-ended questions. A closed-ended question limits respondents to a set of responses (Wiid & Diggines, 2011). Excellent quality design is essential for quantitative questionnaires (Salkind, 2012). The questionnaire items were adapted from various pre-tested, accurate, and true scales studies (Sweeney & Soutar, 2001; Laroche et al., 2001; Michaelidou & Hassan, 2008. Minton et al., 2013; Paul et al., 2016). Such scales were updated for this analysis and described individually for each build, as shown in Table 3.3 below. The survey questionnaire assessed levels of attitude, social media influence on organic products, levels of environmental concern, health concern, attitude, subjective norm, perceived behavioural control with organic products, and perceived quality, willingness to pay more and intentions to purchase organic personal care products. Issues of demographic and socio-economic characteristics and social media users were also included. The survey instrument included nine constructs. The questionnaire used a 5-point Likert scale from 1 (strongly disagreed) to 5 (strongly agreed). Measurement scales used in this study were adapted from current literature.

The scales measuring the levels of attitude Facebook influence on organic products (six items) were adapted from Minton et al. (2013). Attitude toward buying organic personal care products was measured using three items adapted from Laroche et al. (2001). Subjective norm was measured on four items, which were adapted from Paul et al. (2016). To measure perceived behavioural control, three items from Paul et al. (2016) were used. Strength of participant intention to purchase organic personal care products was assessed with three items adapted from Paul et al. (2016). Four different items measured levels of environmental concern. Three items were adapted from Paul et al. (2016), and one item was adapted from Laroche et al. (2001). Health consciousness was measured three using items from Michaelidou and Hassan (2008). Willingness to pay more for organic personal care products was measured on four items adapted from Sweeney and

Soutar (2001). In addition, two items measuring perceived quality were adapted from Sweeney and Soutar (2001).

**Table 3. 3: Questionnaire format**

| Construct | Item |
|---|---|
| **Levels of attitude commitment towards organic products and Facebook (ATTFB)** | |
| Minton et al. (2013) | I only follow sustainable companies on Facebook because they fill my news feed with environmentally friendly products news. |
| | Facebook represents my friends' and our values for environmentally friendly products. |
| | I would be more likely to visit Facebook if I knew it contained interesting postings on organic products. |
| | When I participate in discussions on Facebook, I imagine myself influencing sustainability in the future. |
| **Attitude towards organic personal care products (ATT)** | |
| Laroche et al. (2001) | I think that environmental protection is important when making a purchase decision. |
| | I prefer to buy organic skincare products to non-organic products. |
| | I think that purchasing organic personal care products is safe. |
| **Subjective norms (SN)** | |
| Paul et al. (2016) | My family thinks that I should practice environmentally friendly behaviour. |
| | My family thinks that I should buy organic personal care products rather than normal products. |
| | I think that I should buy organic personal care products rather than normal products. |
| **Perceived behavioural control (PBC)** | |
| Paul et al. (2016) | I am confident that I can purchase organic personal care products rather than normal products when I want |
| | I see myself as capable of purchasing organic personal care products in the future. |

| | |
|---|---|
| | I have money, time, and willingness to purchase organic personal care products. |

| | |
|---|---|
| **Purchase intentions for organic personal care products (PI)** | |
| Paul et al. (2016) | I intend to purchase organic personal products next time because of its positive environmental contribution. |
| | I plan to purchase more organic personal products, rather than normal products. |
| | I will consider switching to eco-friendly brands for ecological reasons. |
| **Environment concern (EC)** | |
| Paul et al. (2016) | When I think of the ways companies are polluting the environment, I get frustrated and angry. |
| | I don't buy products that cause potential damage to the environment. |
| | I have convinced my peers to stop using environmentally harmful products. |
| Laroche et al. (2001) | Being exposed to two alternatives, I buy the one that is less harmful to the environment. |
| **Health consciousness (HC)** | |
| Michaelidou and Hassan (2008) | I think about my health a lot. |
| | I'm alert to changes in my health. |
| | I'm usually aware of my health. |
| **Perceived quality of organic personal care products (PQ)** | |
| Sweeney and Soutar (2001) | Organic personal care products have consistent quality. |
| | Organic personal care products have an acceptable standard of quality. |
| **Willingness to pay more for organic personal care products (WTP)** | |
| Sweeney and Soutar (2001) | I intend to pay more for organic personal products. |
| | I would pay extra for organic personal products even if the performance were the same as on-organic products. |

**Table 3.3 Questionnaire format (continued …)**

## 3.7 Pilot testing

A pilot test was conducted to reveal problems or errors with the questionnaire scale items, which improved internal validity. Using a convenience sampling method, the pilot test was given to respondents in the study population. The term 'pilot study' refers to mini versions of a full-scale study (also called ‘feasibility' studies) as well as specific pre-testing of a specific research instrument, such as a questionnaire or schedule of interviews (Polit et al., 2001) Van Teijlingen, Rennie, Hundley and Graham (2001) suggest pilot studies are a key element of good study design. Peat et al. (2002) recommend methods to boost a questionnaire's internal validity:

- administer the questionnaire to pilot subjects in the same manner as the main research
- ask the subjects for feedback to identify ambiguities and tough questions
- record the time taken to complete the questionnaire and decide whether it is reasonable
- discard all unnecessary, complicated, or ambiguous questions
- check that all questions are answered
- re-word or re-scale any questions that are not answered as expected

The researcher piloted the questionnaire on 60 participants meeting the research criteria. The input from the pilot test was used to improve the wording of some questions, removing ambiguity, and improving the overall readability of the questions. The pilot test results are presented in section 4.2.

## 3.8 Ethical considerations

According to Fouka & Mantzorou (2011), ethics in research involve the protection of the integrity of participants and the publication of research data. Arifin (2018) stresses that applying proper ethical standards to ensure the protection of human participants is critical in all research studies. The study addressed research ethics taking into account informed consent, confidentiality, anonymity, and the debriefing of participants. In addition, the researcher obtained permission to conduct this study from the University of Cape Town,

commerce ethics committee. All participants were informed about the purpose and requirements of the study. They were asked for their consent before taking part in the survey. The consent form assured confidentiality of their results, reminding them that they participate voluntarily and could withdraw from the study at any time, and lastly, that they understood that their results would be used as part of a bigger group of results and not on an individual level (See Appendix B).

### 3.9 Data gathering process

A web-based, self-administered questionnaire was used to collect respondent data. The web-based survey was created using Qualtrics. A filter question was asked to ensure each respondent fell into the target audience. The online survey was conducted using social media. According to Brickman-Bhutta (2009: 4), social media and other social networking sites like Facebook allow researchers to bring chain-referencing methods into the online world, while also leveraging the strengths of online questionnaires. A single researcher may complete projects previously requiring large teams. Printing, post, and entry costs virtually disappear. Feedback instantly. Turnaround times shorten weeks to days. Reaching remote, dispersed, and marginalised subpopulations become much easier. In this study, the researcher explores how Facebook and online surveys can reduce these barriers and enhance the representativeness of non-probabilistic samples.

Data collection took place from November 2018 to February 2019. The choice to use web-based questionnaires was due to the cost-effectiveness and convenience for larger sample sizes (Check & Schutte, 2012).

### 3.10 Data preparation

According to Cooper and Schindler (2011:490), “the data preparation process is the first step when analysing data in completed questionnaires”. Malhotra (2010:452) points out that “the data preparation stage of the research process entails the editing, coding, capturing, and cleaning of the gathered data. These aspects are discussed briefly hereafter.

### 3.10.1 Preliminary data analysis

The process of preliminary data analysis involves three principal stages, namely data coding, cleaning, and tabulation.

#### 3.10.1.1 Coding

The method of coding is the transformation of raw data into numbers and categories or groups (Churchill et al., 2010). The process involves translating the responses of respondents into numbers that represent their preferences (Wiid &Diggines, 2011). The questionnaire was divided into three parts, namely Section A (Demographics), Section B (Facebook usage data) and Section C (Factors that influence consumer green purchase behaviour). The coding detail is shown in Chapter 4, section 4.4.1.

#### 3.10.1.2 Data cleaning

Once data was coded, it was then cleaned for data entry. Data cleaning involves removing data that is incomplete, noisy, and inconsistent (Han, Kamber, & Pei, 2011). In this study, all questionnaires with missing data and respondents falling outside the 18 - 25 age bracket were discarded. The full detail and explanation of how the researcher dealt with response inconsistencies are provided in Chapter 4, section 4.4.2.

#### 3.10.1.3 Tabulation

Tabulation is a method of counting and organising the data in an orderly manner and displaying it in frequency tables (Churchill, 1995; Hair et al., 2008). This is done by calculating the number of responses for each question and calculating frequencies. Tables take different forms such as bivariate tabulation, univariate tabulation, and multivariate tabulation (Malhotra, 2010). This study used univariate tabulation to determine and tabulate data individually; that is, one response for each question.

## 3.11 Data analysis

Vosloo (2014:355) defines data analysis as “the process of bringing order, structure and meaning to the mass of collected data. It is described as messy, ambiguous and time consuming, but also as a creative and fascinating process”. Burns and Grove (2009) add that data analysis helps the researcher to minimise and organise data to generate results. The data analysis for the current involved the use of the following statistical methods in the Statistical Packages for Social Sciences (SPSS) version 26 and Analysis of Movement Structures (AMOS) version 26 programs:

- Exploratory factor analysis
- Reliability analysis
- Validity analysis
- Descriptive analysis
- Correlation analysis
- Structural equation modelling

The following sections discuss these statistical methods applied on the empirical data sets.

### 3.11.1 Exploratory Factor Analysis (EFA)

According to Hair et al. (2014), EFA examines the data and provides details about how many variables are required to represent the data better. EFA has been mainly used to explore the possible underlying structure of a set of observed variables without imposing a preconceived outcome structure (Child, 1990). EFA requires a researcher to make a number of key decisions about how the analysis is conducted.

According to Fabrigar, Wegener, MacCallum, and Straham (1999), there are a number of critical methodological issues that should be considered when conducting a factor analysis. First, the researcher must decide what variables to include in the study and the size and nature of the sample the study will be based on. Second, given the research goals, a researcher must determine if EFA is the most suitable form of analysis. Third, if EFA is sufficient, a specific procedure must be selected to match the data model. Fourth,

the researcher must determine how many variables should be included. Usually, a researcher must select a method to rotate the initial factor-analytic solution to a more readily interpretable final solution. The authors also stress that every decision can have significant consequences for the results obtained.

The primary function of factor analysis is to explain variables and interpret results. This can be achieved in two steps: factor extraction and factor rotation (Introduction to SAS, 2016). Factor extraction involves choosing the model type and the number of factors to extract. Factor rotation comes after the factors are extracted to achieve a simple structure to improve interpretability (Hair et al., 2014).

In this study EFA was conducted using Varimax Rotation Principal Component Analysis. Principal Components Analysis (PCA) is a multivariate statistical technique used to reduce dimensions and to further understand the underlying classes of data variables (i.e. variables that can calculate the same or similar underlying effect) by extracting an ordered set of uncorrelated sources of variance in a multivariate system (Rea & Rea, 2016). Furthermore, EFA helped to address the issue of factor cross-loading. Variables with multiple loading are problematic as it is difficult to label all the factors which share the same variable and thus hard to make those factors be distinct and represent separate concepts (Maskey, Fei & Nguyen, 2018). Factor loading below .50 were deleted (Hair et al., 2019).

The procedure for conducting factor analysis is as follows: calculating a correlation matrix, loading factors, identifying the factor analysis method, identifying the number of factors to retain, rotating factors, interpreting factors, naming factors, and generating community estimates (Hair et al., 2014).

#### 3.11.1.1 Computing correlation matrix

Computing a correlation matrix is deemed necessary before performing factors analysis (Dondolo, 2014). A correlation matrix is a collection of correlation coefficients (Kline, 2005). Correlation analysis thus provides a valuable method for deciding whether to

conduct factor analysis (Reise et al., 2000:291). Therefore, if a correlation matrix does not show significant correlations between items, factor analysis is not advisable. This study evaluated discriminant validity through the computation of the inter-construct correlation matrix between the different constructs to ensure that they were not too highly correlated.

#### 3.11.1.2 Factor loading

Factor loadings are correlations between variables and factors (Kline, 2005). These loadings also support factor interpretation, where each factor is assessed for meaning (Dondolo, 2014). Objects are considered to load a factor if the value reaches 0.30. Kline (1994) states that once factor analyses are performed, factor loadings are generally deemed high if they are greater than 0.60 and moderately high if they are above 0.30. However, some researchers use stringent criteria, such as a cut-off of 0.7 (Rahn, 2020). Most researchers generally use the greater than 0.3 rule. Therefore, loading 0.30 indicates that the element accounts for 9% of component variability (Churchill Jr, 1995 as cited in Dondolo, 2014).

#### 3.11.1.3 Method for factor analysis

Factors analysis uses various techniques, including common factor analysis and key component analysis (Dondolo, 2014). Factor extraction methods include main component analysis, major factor analysis, intermediate factor analysis, unweighted minus square factor analysis, maximum likelihood factor analysis, alpha factor analysis, image component analysis, and Harris component analysis (Hair et al., 2014). Selecting one method over another is based on two criteria: first, expectations for factor analysis, and second, prior experience of variance in variables (Hair et al., 2014). The most widely used technique for first loading sequence is the key component method (Tryfos, 1997). The key component analysis seeks to condense the number of variables into a smaller set of variables (factors) to determine the optimal number of overall variance factors (Hair et al., 2014:16). Common factor analysis involves extracting as many latent variables (factors) as possible to explain correlations between items (common variance) (Reise et al., 2000).

Hair et al. (2014) indicate that the sample size depends on the key component analysis approach. The larger the study, the higher its reliability.

#### 3.11.1.4 Criteria for the number of factors to retain

This stage entails determining how many of the factors should be retained. The decision is based on two methods, namely the eigenvalue method and the scree plot. Hair et al. (2014) recommend the following criteria to determine the initial number of factors to retain:

- Factors with eigenvalues greater than 1.0
- A predetermined number of factors based on research objectives or prior research
- Enough factors to meet a specified percentage of variance explained, usually 60% or higher
- Factors showed by the scree test to have substantial amounts of common variance (i.e., factors before inflexion point)
- More factors when heterogeneity is present among sample subgroups.

#### 3.11.1.5 Rotation of factors

Factor rotation is the process for interpreting factor matrices (Costello & Osborne, 2005). Moreover, factor rotation offers a simpler structure with better factor categorisation. A commonly used rotation approach is orthogonal rotation. According to Bryman and Cramer (2005:332), orthogonal rotations "produce unrelated or independent factors". Specific orthogonal rotation methods are varimax, quartimax, biquartimax, equamax, parsimax, and parsimax (Costello & Osborne, 2005). Varimax rotation is commonly favoured (Hair et al., 2014). The varimax focuses on simplifying factor matrix columns (Hair et al., 2014). Furthermore, Churchill (1995:974) mentions that the varimax technique seeks to "clean" factors in a factor-loading table. This is achieved by grouping variables into conceptual factors.

#### 3.11.1.6 Interpreting the Factors

Once factor analysis is complete, the output must be interpreted. This process involves assigning meaning or names to factor analysis findings (Dondolo, 2014). Although the factor classification method is subjective (Hair et al., 2014), Ford et al. (1986) suggest

that only factor loads greater than 0.40 should be considered significant in the factor definition. Malhotra (2010) proposes to plot variables using factor loadings as co-ordinates to interpret factors successfully. According to Churchill Jr (1995) and Malhotra (2010), marking variables should be used as follows:

- Begin with the first construct and first factor in the rotated factor-loading matrix and move horizontally from left to right, separating the highest loading. Circle the loading and replicate the procedure for each of the other constructs.
- Scrutinise each of the circled loadings and examine its significance. The significance of any loading may be judged either statistically or by use of a practical criterion. Statistical criteria mean that the loading is statistically significant at some specified alpha level, typically 0.05. The practical significance criteria mean that the factor should account for a certain percentage of the variation in the variable. Generally, a 0.30 or 0.35 value is considered significant.
- Emphasise the other significant loading using the criteria stated above.
- Study the loading matrix and find all the variables that do not have significant loadings on any factor. If the variable is unimportant with a low factor loading, the researcher may decide to remove the variable and derive a new factor solution with the non-loading variable removed.
- Concentrate on the significant loading and try to name the factors based on what the variables' loading on a given factor have in common.

#### 3.11.1.7 Evaluate the communalities of the variables

Once all the important loads are identified, it is necessary to look for any variables not adequately accounted for by the factor solution. One easy solution is to define any variable(s) with at least one significant load. Another method is to analyse the population of each variable, representing the amount of variation accounted for by each variable's factor solution. Communality refers to the quantity of variance variable shares with all other variables considered (Malhotra, 2010). According to Preacher and MacCallum (2002), large populations of the number of factors lead to low model error. Hair et al. (2010) maintain that variables lacking at least one significant load are not adequately accounted for by the factor solution and, as such, should be removed.

### 3.11.2 Reliability analysis

Reliability describes research that obtains the same results when repeated or undertaken by different researchers (Wiid & Diggines, 2011). According to Babin and Zikmund (2016: 280), “reliability indicates the internal consistency of a measuring instrument”. In quantitative research, reliability aims to assess how reliable the data is (Hernon & Schwartz, 2009). One of the advantages of reliability is that it helps in determining the measuring instrument's quality (Dondolo, 2014). In addition, the main purpose of reliability is to provide consistent results and minimise errors and bias (Hammond & Wellington, 2013). There are four basic types of reliability estimation used for different purposes, namely: test-retest reliability, internal consistency reliability, inter-rater and parallel forms reliability. It is important to draw a distinction between these four types, as it will guide the researcher to assess better the reliability of a research instrument such as a questionnaire. The four types of reliability are summarised in Table 3.4.

**Table 3. 4: Types of reliability**

| Types of reliability | What it is | How you do it | What the reliability Coefficient Looks like |
|---|---|---|---|
| Test-retest reliability | A measure of stability | Administer the same test/measure at two different times to the same group of participants | $r$test1.test 2 |
| Parallel forms reliability | A measure of equivalence | Administer two different forms of the same test to the same group of participants | $r$form1. form 2 |
| Inter-rater | A measure of agreement | Have two raters rate behaviours and then determine the amount of agreement them | Percentage of agreements |
| Internal consistency | A measure of how consistently each item measures the same underlying constructs | Correlate performance on each item with overall performance across participants | Cronbach’s alpha<br>Kuder- Richardson |

**Source: (Salkind, 2012).**

#### 3.11.2.1 Test-retest reliability

Reliability test-retest examines consistency over time and is a measure of how stable a test is over time (Salkind, 2012). In other words, Time 1 and Time 2 scores can then be correlated to evaluate stability tests over time. Stability is assessed through a test-retest procedure involving administering the same measuring tool, such as a questionnaire to the same respondent after a certain period under the same conditions (Hernon & Schwartz, 2009). According to Heale and Twycross (2015), a statistical comparison is made between test scores of participants for each time they have completed it. This provides an indication of instrument reliability.

#### 3.11.2.2 Parallel forms reliability

Parallel-forms (also known as equivalent form) reliability examines consistency between forms (Fayers, Hays, & Hays, 2005). It is a measure of reliability achieved by managing different versions of an assessment instrument for the same group of individuals. (Phelan & Wren, 2006). Salkind (2012) explains that the test is equivalent if the correlation is statistically significant, suggesting that the relationship is significant enough due to something shared between the two types, not a random occurrence. Parallel-forms reliability may be used when data is collected by researchers assigning ratings, scores, or categories to one or more variables. (Salkind, 2012). Fayers et al. (2005) argue that If the form is truly equivalent in terms of item content, the correlation between scores offers a good estimate. However, equivalent forms are hard to develop, and unexpected events or activities can affect the results of this method of reliability assessment (Fayers et al., 2005).

#### 3.11.2.3 Inter-rater

According to Salkind (2012:121), Inter-rater reliability refers to “a measure of the consistency from rater to rater, rather than from time to time or even from test to test”.
The kappa statistic is widely used to test interrater reliability (McHugh, 2012). The kappa statistic can be used if the researcher is interested in estimating exact agreement between raters for variables measured on a nominal, ordinal or interval-level scale

(Fayers et al., 2005). Thus, the usefulness of rater reliability depends on the extent to which the data collected in the study are correct representations of the measured variables. According to McHugh (2012), kappa can range from −1 to +1. Although kappa is one of the most widely used statistics for testing interrater reliability, it has weaknesses. Decisions on what degree of kappa should be considered carefully (McHugh, 2012).

#### 3.11.2.4 Internal consistency reliability

Measuring internal consistency is one of the most common ways of ensuring consistency of scores from various items in a measuring instrument (Dondolo, 2014). According to Salkind (2012), Internal consistency examines consistent objects in test or evaluation. It is evaluated by the correlation performance of each item in a test or scale with a total test or scale performance as a correlation coefficient (Hernon & Schwartz, 2009). Internal consistency thus determines whether the test consistently measures the same dimensions across all test items (Lodico, Spaulding, & Voegtle, 2006). This is assessed with Cronbach's alpha (Taber, 2017). The Cronbach's alpha was developed by Lee Cronbach in 1951 to offer an assessment of the internal consistency of a test or scale and is expressed as a number between 0 and 1 (Tavakol & Dennick, 2011). According to Salkind (2012), an acceptable reliability score is 0.7 and higher. In this study, the reliability assessment was determined by calculating the Cronbach alpha coefficient values value of 0.7 as a cut-off point (Salkind, 2012). The Cronbach alpha values are reported in Table 4.16 of Chapter 4.

### 3.11.3 Validity analysis

According to Hernon and Schwartz (2009), validity refers to the degree to which a population can generalise research results, whether the instrument correctly tests what it aims to test, and several other related constructs. Salkind (2012) suggests that validity must be founded on adequate evidence. It is not inherent in a test, nor is a software creator merely proclaimed to exist. Therefore, data are collected, and research is done to establish evidence supporting a particular use test (Muijs, 2004). There are three types of measures to determine the validity of data collection tools: content validity, criteria validity, and construct validity (Salkind, 2012). Below, each validity measure is discussed.

#### 3.11.3.1 Content validity

According to Fayers, Hays, and Hays (2005), content validity is the extent to which a test samples a representative range of the content being investigated. Issues concerning item adequacy and patient population should be carefully addressed when assessing content validity (Hernon & Schwartz, 2009). A limitation of content validity assessments is that it tends to be subjective (Fayers et al., 2005), and relies on expert opinion to establish the content validity of a test (Salkind, 2012). However, in some cases, researchers could combine more than one form of validity to increase validity strength of the questionnaire (Bolarinwa, 2016). Some of the limitations found in content validity can be overcome by combining content validity and criterion validity (Bölenius et al., 2012). In this study, content validity was achieved by adopting measures from existing validated measures from previous studies.

#### 3.11.3.2 Criterion validity

Criterion validity concerns either how well test forecasts present results (i.e. concurrent validity) or how well they predict future performance (called predictive validity) (Salkind, 2012). The main difference between the two is when the data depicting the criterion are collected. Muijs (2004) mentions two factors needed to determine the validity of the criterion: excellent knowledge of the concept theory so that the researcher can decide which variables we can expect to predict and relate to it, and a measure of the relationship between our measure and those factors.

### 3.11.4 Construct validity

Construct validity is the most valuable and most challenging measure of validity (Salkind, 2012). It links the practical components of a test to some underlying theory or model of behaviour (Ebel, 2016). According to Hair et al. (2014) construct validity ensures that the method measurement empirically correlates to the constructs being measured. There are several ways in which construct validity can be established. The most widely accepted forms of construct validity are convergent, discriminant, and nomological validity (Hair et al., 2014).

#### 3.11.4.1.1 Convergent validity

According to Krabbe (2016) convergent validity refers to how closely the new scale is related to other variables and other measures of the same construct. Convergent validity is established when each measurement item correlates strongly with its assumed theoretical construct (Hair et al., 2014). The current study used construct reliabilities (CR) and average variance-extracted (AVE) to establish convergent validity. CR is a measure of reliability and internal consistency of the measured variables representing a latent construct (Hair et al., 2014), whereas AVE is a measure of the amount of variance that is obtained by a construct in relation to the amount of variance due to measurement error (Farrell, 2010). Hair et al. (2019) recommend that AVE should be .5 or greater and CR should be 0.7 or higher to indicate adequate convergent validity, but 0.60 is an acceptable level (Barclay et al., 1995).

#### 3.11.4.1.2 Discriminant validity

According to Hair et al. (2010), discriminant validity establishes whether the constructs in a structural equation model are highly correlated among them or not. It compares the Square Root of AVE of a particular construct with the correlation between that construct with other constructs (Farrell, 2010). Fornell and Larcker (1981 as cited Farrell, 2010) suggest discriminant validity is established if a latent variable accounts for more variance in its associated indicator variables than it shares in the same model with other constructs. To meet this requirement, the average variance extracted from each construct (AVE) must be compared with its square correlations with other constructs in the model (Henseler et al.,2015). Discriminant analysis can be achieved when the square root AVE is higher than the latent variable's squared correlations with all other latent variables (Cooper & Zmud, 1990, Hair et al., 2010). The rule is that all variables should relate more strongly to their own factor than to another factor.

#### 3.11.4.1.3 Nomological validity

Nomological validity refers to the extent to which a construct relates to other constructs in a theoretically consistent way (Hagger, Gucciardi & Chatizarantis, 2017). To establish nomological, Hair et al. (2014) recommends the researcher must identify theoretically

supported relationships from prior research or accepted principles and then assess whether the scale has corresponding relationships. In this study, the nomological validity determined whether the study model reflected the theoretical relationships among the indicators to provide a theoretical context for the construct (Lee, 2019).

The current study assessed construct validity using convergent, discriminant and nomological validity. Average Variance Extracted (AVE) and construct reliability (CR) were used to measure convergent validity and construct reliability (CR). To establish construct validity, Hair et al. (2014) recommends that all AVE should be greater than 0.5, and .70 is considered the minimum threshold for CR.

### 3.11.5 Descriptive statistics analysis

Descriptive data analysis limits generalisation to an observed group of individuals. Data were analysed descriptively in terms of central tendency and dispersion of variability. Central tendency's main measure includes mean median, and mode while the dispersion of variability measure includes the standard deviation. Other variability measures include measure of shape and are measured by skewness and kurtosis (Samiles & McGrane, 2000). Data description is needed to determine the normality of the distribution. Data description is essential as the nature of the techniques to be used for inferential data analysis depends on data characteristics (Salkind, 2012).

#### 3.11.5.1 Measures of central tendency

A measure of central tendency is a summary measure that attempts to describe a complete set of data with a single value that represents the average or centre of its distribution (Salkind, 2012). There are three types of measures of central tendency: the mean, the median, and the mode.

- The mean

The mean or average is most commonly used to describe a central trend (Wiid & Diggines, 2011). It represents the distribution gravity centre. In statistics, data from either a population or sample is often needed (Smailes & McGrane, 2000). To calculate the mean, all values are added and divided by total values. It is the summation ratio of all

scores to total scores. Using mean can compare various groups. It also helps to compute additional statistics.

- The median

The median is the mid-value between lowest and highest. This is the middle value when the values are set in order (Wiids & Diggines, 2011). One way to calculate the median is to list all scores in numerical order, and then place scores in the sample centre if the set includes even numbers, the median measures the middle average of the two numbers.

- The mode

The mode explains the data value with a distribution's highest occurrence frequency (McDaniel & Gates, 2010). It is the most often occurring value in a series of data (Wiids & Diggines, 2011). Thus, in a graphic representation of the data, the mode is always the highest point of the graph.

#### 3.11.5.2 Dispersion of variability

Variability describes the degree of distribution characterising a set of ratings. It is the degree to which several scores vary, primarily the mean, from certain measures of a central pattern (Salkind, 2012). A slight difference suggests that the scores are grouped closely. There are significant differences between people and the scores distributed over a wide range of values (Gravetter & Forzano, 2012). Variability measures are calculated based on interval or ratio data (Malhotra, 2010:487). The uncertainty study includes continuum and standard deviation. The standard deviation is often known to be a valid and accurate dispersion measure (Salkind, 2012). Standard deviation is the approach used in this analysis.

##### 3.11.5.2.1 Standard deviation

The standard deviation is a measurement summarising how much each value in a dataset differs from the mean (Salkind, 2012). It is used when dispersing in the same unit as the original measurement (Smailes & McGrane, 2000). Furthermore, Salkind (2012:166) defines the standard deviation as the positive square root of the square deviation sum divided by the number of scores minus one. The greater the standard deviation, the more

variable the scores (Smailes & McGrane, 2000). In this study the means, standard deviation measures were analysed and are reported in Chapter 4, Table 4.12.

#### 3.11.5.2.2 Measures of shape

An essential aspect of a variable's "definition" is its distribution shape, which tells the value frequency from different variables. A researcher is interested in the approximation of distribution from a normal distribution (Salkind, 2012). Simple descriptive statistics can provide some relevant information. The two methods used to determine distribution shape are skewness and kurtosis.

- Skewness

Skewness is a measure of the asymmetry of a real-valued random variable distribution of its mean (Gandhi and Sarkar, 2016). Skewness may be positive, negative, or unknown. The distribution is positively skewed when most scores pile up at the distribution's low end (or left) and spread more gradually to the high end. For a skewed distribution, the mean lies on the median's right side (Smailes & McGrane, 2000). Conversely, if the ratings are clustered towards the upper end, the distribution is negatively biased and positively skewed if they scatter towards a lower value. In positive skewness, the mean of the distribution is greater than the median, while in negative skewness, the mean value is higher (Smailes & McGrane, 2000).

- Kurtosis

Kurtosis is a measure that is used to describe normal distribution (Brown, 2016). Although skewness differentiates extreme values in one to the other, kurtosis measures extreme values in either tail (Westfall, 2014). There are several ways to quantify it for a theoretical distribution and corresponding ways to estimate it from a population sample. Depending on the kurtosis measure used, there are various interpretations of kurtosis and how specific measures should be viewed. A standard normal distribution has a kurtosis of 3 and is recognised as mesokurtic. An increased kurtosis (>3) can be visualised as a thin ‘bell’ with a high peak whereas a decreased kurtosis corresponds to a broadening of the peak and ‘thickening’ of the tails. Positive kurtosis indicates a high (>3) leptokurtic

distribution, and negative kurtosis (<3) indicates platykurtic flat distribution (Brown, 2016). For this analysis, skewness and kurtosis were measured using SPSS.

### 3.11.6 Correlation analysis

Correlation analysis measures the association between two or more variables (Salkind, 2012). A high correlation means that two or more variables are strongly related to each other, while a weak correlation means that the variables are hardly related. (Smailes & McGrane, 2000). Correlation analysis allows the researcher to analyse data from several subjects simultaneously (Schober et al., 2018). Salkind (2012) distinguishes between two types of correlations, approaches to perform correlation, namely: Pearson correlation and Spearman correlation. Pearson *r* correlation is the most commonly used correlation statistics to measure the degree of correlation between linear variables (Malhotra, 2010). In contrast, a Spearman correlation can be used as a measure of a monotonic relationship for non - normally distributed continuous data, ordinal data, or data with specific outliers. (Salkind, 2012).

All correlation coefficients are ranged between – 1 to +1, where 0 indicates that there is no linear or monotonic association and the relationship becomes stronger and finally follows a straight line (Pearson correlation) or a continuously increasing or decreasing curve (Spearman correlation) as the coefficient exceeds the absolute value of the correlation (Schober et al., 2018). Thus, for the Pearson r correlation, both variables should be normally distributed (normally distributed variables have a bell-shaped curve) (Malhotra, 2010).

This research aimed to establish a linear relationship between 2 observed variables, and therefore Pearson product-moment correlation was considered suitable for establishing those relationships in this study (Salkind, 2012).

### 3.11.7 Structural Equation Modelling

Structural Equation Modelling (SEM) is defined as a statistical methodology that takes a confirmatory approach to the analysis of a phenomenon-specific structural theory (Barbara & Byrne, 2013). SEM uses multiple models to predict relationships between observed variables to provide a quantitative test of a theoretical model hypothesised by the researcher (Maziriri, 2020).

SEM focuses on the validation of the measurement model and the structural model (Tabachnick & Fidell, 2007). Validating the measurement is done with confirmatory factor analysis (CFA), while the structural model is done through path analysis with latent variables (Hair et al., 2019). Shadfar and Malekmohammadi (2013) argue that the use of CFA makes the SEM more desirable compared to other multivariate methods (i.e., exploratory factor analysis) that make testing hypotheses difficult. In addition, Tabachnick and Fidell (2007) in support, add that SEM provides an efficient and easy way to evaluate unobserved 'latent' constructs underlying a set of observed variables. Bagozzi and Yi (2012) explained that SEM supports the analysis and validation of causal relationship hypotheses due not only to its ability to model measurement error, but also its ability to eliminate bias and manipulation. Further, Hair et al. (2014) suggested that SEM take into consideration the reliability of measurements in statistical analysis in ways that go beyond the averaging of multi-measures of constructs. Bagozzi and Yi (2012) noted that SEM guides exploratory and confirmatory research in a manner combining self-insight and modelling skills with theory.

Although SEM has become one of the widely used statistical techniques for researchers, there is no agreement on the criteria in evaluating model fit (Hair et al., 2019). In addition, Schermelleh-Engel, Moosbrugger and Muller (2003) state that researchers often have difficulty determining the adequacy of structural equation models because various measures of model fit point to conflicting conclusions about the extent to which the model matches the observed data.

### 3.11.8 Measurement model

Malhotra (2010:725) describes the measurement model as the “theory specifying observed variables of constructs, thereby permitting assessment of both convergent and discriminant validity”. It indicates the relationship between latent variables and their indicators. According to Reisinger and Mavondo (2007), SEM's main objective is to provide the factor model's overall fit, which describes the unidimensionality of measurement items. Conversely, Maria and Yusniza (2016) stated that the purpose of the measurement model is to evaluate the variables ' reliability and validity.

The measurement model can be performed either as exploratory factor analysis (EFA) or confirmatory factor analysis (CFA). According to Hair et al. (2014), EFA examines the data and provides details about how many variables are required to represent the data better. EFA has been mainly used to explore the possible underlying structure of a set of observed variables without imposing a preconceived outcome structure (Child, 1990). By comparison, CFA is a technique which validates that the existing measuring elements are loaded into latent variables, depending on how the researcher links the measuring elements to latent variables. (Maziriri, 2020). CFA is a more advanced set of techniques used to confirm a set of variables Hair et al. (2019). In addition, in CFA, the researcher has the ability to identify the measurement model fit before estimating the SEM model Hooper et al. (2008). CFA can also provide quantitative measures that assess the validity and reliability of the proposed theoretical model (Shadfar & Malekmohammadi, 2013).

In this study, confirmatory factor analysis was performed. The confirmatory factor analysis allowed the researcher to test for the construct validity of the model using convergent and discriminant validity. It determined if the numbers and loadings of the measured variables were compatible with the expectations based on the pre-established theory (Shadfar & Malekmohammadi, 2013).

There are several stages within SEM: model specification, identification, model fit and interpretation, estimation, and modification (Kline 2010; Hair et al., 2014). The following section discusses each stage.

#### 3.11.8.1 Model specification

The first phase in the modelling process is determining the hypothesis, which means testing the specific set of hypotheses. Model definition occurs when a researcher determines the relationships are supposed to exist between observed and latent variables (Ullman & Benter, 2012). The determined variables are either latent or directly observed markers. Latent variables are either exogenous (independent) or endogenous (dependent), meaning eclipses or circles (Tabachnick & Fidell, 2007). Exogenous latent variables are associated with independent variables; they induce variations in the model's other latent variables (Barbra & Byrne, 2013). Rectangles represent the observed variables. Hair et al. (2014) maintain that a good measurement theory is necessary to obtain useful SEM results. Measurement theory relates to how constructs are interpreted, while structural theory suggests a construct relationship (Malhotra, 2010). Therefore, to ensure that measurement accuracy allows reasonable conclusions to be made, substantial time and effort must be spent in the research process early (Hair et al., 2014).

#### 3.11.8.2 Model identification

Model identification can be defined as "an assessment of the extent to which the information provided by the data is sufficient to allow parameter estimates or a unique solution for the theoretical model's constrained equations". (Reisinger & Mavondo, 2007:52). Structural models can be accurately identified, over-identified or under-identified (Barbra & Byrne, 2013). An over-identified model is one with less predicted parameters than data points. This results in positive degrees of freedom, allowing the model to be rejected, and thus making it scientific. According to Ockey and Choi (2015), two conditions must be met to identify parameters. First, more data points are required than freely calculated parameters. Secondly, the coefficients of these equations, which are functions of certain model parameters, must be identified. In addition to this state, model degrees of freedom should be stated (Ockey & Choi, 2015). The degrees of freedom should, therefore, be non-negative (Baumgartner & Homburg, 1996).

#### 3.11.8.2.1 Assessment of the sample size

Using SEM, the larger sample size is needed to provide adequate statistical power and accurate estimates (Ockey & Choi, 2015). Nonetheless, opinions differ on the right sample size type (Hair et al., 2014). Previous recommendations suggested that 10 to 20 participants would be appropriately sampled per approximate parameter (Reisinger & Turner, 1999). Weston and Gore (2006) suggest that sample size criteria depend on the desired strength, testing the null hypothesis and complexity of the overall model. Models with 200 or more samples are known to provide statistical power for data analysis (Hoe, 2008). For example, Reisinger and Turner (1999) consider a 200 sample as a critical sample size. Barrett (2007) agrees with a sample size of 200, adding that a sample of less than 200 will be rejected for publication unless the sample population drawn from is small or restricted.

### 3.11.8.3 Model fit and interpretation

Current practice stresses the importance of using multiple fit statistics to determine model fit (Kline, 2015). In CFA, several statistical tests are used to determine how well the model fits the data (Hu & Bentler, 1999). There is consensus that a researcher should avoid reporting all fit indices that have been established (Schermelleh-Engel et al., 2003). However, there is disagreement on just which fit indices to consider for model evaluation. Hair et al. (2019) recommend using multiple fit indices to determine a model's fitness and should include standardised root mean square residual (SRMR), root mean square approximation error (RMSEA), chi-square measure, confirmatory fit index (CFI), goodness-of-fit statistic (GFI) and adjusted goodness-of-fit statistic (AGFI). Other indexes include the CFI, the normal fit index (NFI), and the Tucker–Lewis index (TLI). In this study, the following fit indices were combined:

- Goodness-of-fit statistic (GFI)
- Standardised root mean square residual (SRMR)
- Root mean square approximation error (RMSEA),
- Adjusted goodness-of-fit statistic (AGFI).
- Chi-square measure
- Confirmatory fit index (CFI)

- Normal fit index (NFI),
- Tucker–Lewis index (TLI).

#### 3.11.8.3.1 Goodness of -fit Indices (GFI) and Adjusted Goodness-of-Fit-Index (AGFI)

The goodness of fit test (GFI) is a statistical hypothesis measure to assess how well sample data fit a distribution from a population with a normal distribution (Hair et al., 2014) The most common The GFI test is the chi-square test (Shadfar and Malekmohammadi, 2013). Moreover, the GFI measures the difference between the sample covariance matrix and the measurement model matrix (McQuitty, 2004). GFI assesses the proportion of variance by estimated population covariance (Hu & Bentler 1999). GFI values range from zero to one, but theoretically negative values will yield meaningless. A large sample size increases GFI. Bagozzi and Yi (2012) state that a good fit is obtained when the $\chi 2$ statistic is nonsignificant, which by convention is taken to happen for p-values≥.05. However, Tabachnick & Fidell 2007 recommends a GFI cut - off point for an acceptable model of 0.90 or higher.

In GFI and AGFI, values larger than 0.90 indicate good model fit, but preferably larger than 0.95 (Hair et al., 2010). The GFI and AGFI are acceptable if the values are above 0.9 and excellent if the value is above 0.95. The GFI is 0.915, which is acceptable, and the RMR is 0.072. In this case, the standardised value of RMR – SRMR – will be used. The AGFI value is 0.876, which is slightly close to 0.9. The results of the incremental fit indices are reported in chapter 4, Table 4.24.

#### 3.11.8.3.2 Root mean square approximation error (RMSEA) and Standardized RMR (SRMR)

RMSEA is a common measure of fit, as it does not require a null model comparison. It is one of the fit indices less impacted by sample size, although, for the smallest sample size, it overestimates goodness of fit (Mahalakshmi & Varadaraj, 2018). According to the guidelines proposed by Hu and Bentler (1999) and Hair et al. (2019), an acceptable model should have a CMIN/DF, which is less than 5. It will be excellent if it is between 1 and 3. In this case, it is slightly above three.

SRMS is the average difference between the predicted and observed variances and covariances in the model, based on standardised residuals (Shadfar & Malekmohammadi, 2013). Standardised residuals are fitted residuals [residual covariance]. Hair et al. (2019) state that the smaller the SRMR, the better the model fit. SRMR = 0 indicates perfect fit, value less than .05 is widely considered good fit and below .08 is adequate fit.

#### 3.11.8.3.3 Chi-square measure

A chi-square ($\chi 2$) statistic is a test that assesses how expectations compare to actual observed data (or model results) (Hayes, 2020). The chi-square measures model fit by distinguishing the difference between the model's assumed covariances and the observed sample covariances (Bagozzi & Yi, 1998). The chi-square is almost always statistically significant. Chi-square is also influenced by the scale of the model's correlations – the greater the correlations, the worse the fit (Hair et al., 2019). Thus, alternative fit measures were developed (Hooper et al., 2008) Although there is no consensus on an appropriate chi-squared test ratio, guidelines range from 5.0 to 2.0 (Tabachnick & Fidell, 2007).

#### 3.11.8.3.4 Confirmatory fit index (CFI)

CFI assumes that all latent variables are uncorrelated (null/independence model) and compares the sample covariance matrix to Hooper et al. (2008). Similar to the NFI, values between 0.0 and 1.0 − with values closer to 1.0 − suggest good fit. According to (Shadfar and Malekmohammadi, 2013) CFI should be equal to or greater than 0.90 to accept the model, indicating that the given model can reproduce 90% of the covariation in the data.

#### 3.11.8.3.5 Normal fit index (NFI),

Normed Fit Index (NFI) was developed as an alternative to CFI, but one which did not require making chi-square assumptions. "Normed" means it varies from 0 to 1, with 1 = perfect fit. NFI reflects the proportion by which the researcher's model improves fit compared to the null model (uncorrelated measured variables) (Hair et al., 2014).

3.11.8.3.6 Tucker–Lewis index (TLI).

The TLI is conceptually like the NFI but differs in that it is a comparison of the standard chi-square values for the null and defined model, given the complexity of the model. Nonetheless, TLI is not standardised, so its values can fall below or above 1 (Hair et al., 2019). TLI close to 1 indicates a good fit. Rarely, some authors have used the cutoff as low as 0.80 since TLI tends to run lower than GFI. However, more recently, Hu and Bentler (1999) have suggested TLI >= 0.95 as the cutoff for a good model fit, and this is widely accepted (Schumacher & Lomax, 2004) as the cutoff. TLI values below 0.90 indicate a need to redefine the model.

While there are standard rules for determining model fit the absolute fit indices used to assess the model were chi-square value and probability value, the goodness of fit index, root mean square error of approximation (RMSEA) and standardised root mean residual (SRMR). Table 3.5 below summarises the model of fit and acceptable fit level.

**Table 3. 5: Model of fit an acceptable fit level**

| Measure | Terrible | Acceptable | Excellent |
|---|---|---|---|
| CMIN/DF | > 5 | > 3 | > 1 |
| CFI | <0.90 | <0.95 | >0.95 |
| SRMR | >0.10 | >0.08 | <0.08 |
| RMSEA | >0.08 | >0.06 | <0.06 |
| PClose | <0.01 | <0.05 | >0.05 |
| NFI | <0.90 | <0.95 | >0.95 |
| TLI | <0.90 | <0.95 | >0.95 |
| RNI | <0.90 | <0.95 | >0.95 |
| AGFI | <0.90 | <0.95 | >0.95 |
| PNI | <0.90 | <0.95 | >0.95 |

Based on all the above-mentioned fit indices, the Confirmatory Factor Analysis Model Fit section in Chapter four provides all indices for this study.

#### 3.11.8.4 Model estimation

After specifying a model, population parameters are estimated to minimise the difference between observed and expected population covariance matrices (Ullman & Benter, 2012). Therefore, estimation determines if parameter estimates are consistent with experiential variables covariance or correlation matrix (Reisinger & Mavondo, 2007). Several estimation methods exist, including maximum likelihood (ML), least squares (LS), unweighted LS, generalised LS, and free asymptotic distribution (ADF) (Weston & Gore, 2006). Maximum likelihood (ML) estimation is the most commonly used estimation tool (Hair et al., 2014). The term maximum likelihood describes the statistical method which supports the derivation of parameter estimates: the estimates are those which maximise the likelihood of the data being drawn from this population (Ullman & Benter, 2012). Kline (2005) recommends a confirmatory factor analysis before estimating the complete structural model. Confirmatory factor analysis tests whether indicators load, as suggested, on specific latent variables.

#### 3.11.8.5 Model modification

Upon evaluating parameter estimates, fit indexes and residuals, the structural model's validity and its related proposed theoretical relationship must be checked (Schreiber, Nora, Stage, Barlow & King, 2006). The model may need to be updated to improve fit, estimating the most likely relationships among variables (Hair et al., 2014). Model modification is a process where researchers change the proposed model by releasing or setting parameters (Weston & Gore, 2006) to fit better. Schreiber et al. (2006) suggest that implementing a change should be technically significant, and such an adjustment should not be done merely because an experiment proposed eliminating or adding a parameter within the model. In addition, Ockey and Choi (2015) propose that if a model has been modified and re-analysed, the researcher should provide proof that the modified model is statistically superior to the original chi-square test model. Model modifications, especially the structural model, are changes to the theory claimed to be accurate. Hair et al. (2014) stress that improvements must make sense in terms of the theory being tested or accepted as shortcomings of that theory.

## 3.12 Conclusion

This chapter identified the sampling process, testing method, and the design of the measuring instrument. The chapter also discussed the statistical methods to be used during the key analysis. The SEM-based data analysis measurement models were also reviewed. The next chapter reports study empirical findings. The data analysis chapter will find out whether the hypothesised relationships in the proposed model of factors support the impact of social media on South African millennials' purchase intention of organic products.

# CHAPTER 4: ANALYSIS AND INTERPRETATION OF EMPIRICAL FINDINGS

## 4.1 Introduction

Chapter 3 provided an overview of the research design and methodology used to address the research questions and objectives of the current study. The chapter discussed the research design, research paradigm, research approach, target population, sampling method, data collection, data preparation and data analysis. In addition, Chapter 3 described the statistical procedures used to analyse the data gathered from the study and include descriptive statistics, validity and reliability analysis, correlation analysis, factor analysis and structural equation modelling.

The following chapter presents the analytical research results. The chapter outlines the sample description and reports on findings of exploratory factor analysis, measuring instrument reliability and validity, descriptive statistics, and correlation coefficients. The chapter reports on structural equation modelling results, whereby measurement and structural models were tested.

## 4.2 Pilot study results

Since the measurement instrument has been adapted from prior reliable studies, it was vital to check the measurement instrument's internal consistency to determine if the items utilised were internally consistent. Table 4.1 presents the pilot test results.

**Table 4. 1:Pilot study results**

| Constructs | Number of items | Mean | Std. Deviation | Cronbach's alpha coefficient (α) | Cronbach's alpha based on Standardized items |
|---|---|---|---|---|---|
| Attitude commitment to organic products and Facebook (ATT FB) | 6 | 3.431 | 0.674 | 0.634 | 0.631 |
| Attitude towards organic personal care products (ATT OPP) | 3 | 4.506 | 0.519 | 0.750 | 0.743 |
| Subjective norms (SN) | 4 | 3.563 | 0.778 | 0.764 | 0.777 |
| Perceived behavioural control (PBC) | 3 | 4.250 | 0.668 | 0.730 | 0.59 |
| Purchase intentions (PI) | 3 | 4.367 | 0.634 | 0.708 | 0.713 |
| Willingness to pay more (WTP) | 4 | 4.000 | 0.863 | 0.768 | 0.773 |
| Perceived quality (PQ) | 2 | 4.000 | 0.864 | 0.773 | 0.783 |
| Environmental concerns (EC) | 4 | 3.946 | 0.659 | 0.705 | 0.715 |
| Health consciousness (HC) | 3 | 4.583 | 0.581 | 0.809 | 0.833 |
| Overall, Cronbach's alpha coefficient value of the entire scale = 0. 738 | | | | | |

Cronbach's alpha coefficient values show robust internal consistency reliability with scaled responses on the various constructs. The pilot study retains an overall Cronbach's alpha coefficient value of 0.738, thereby providing a good indication of reliability. Cronbach's alpha coefficient values of 0.674, 0.750 and 0.764 are reported for the Attitude commitment to organic products and Facebook (Q9a to Q9f), Attitude towards organic personal care products (Q10a to Q10c), Subjective norms (Q11a to Q11d) factors, respectively. Further, Cronbach's alpha coefficient values of 0.730, 0.708 and 0.768 are reported for Perceived behavioural control (Q12a to Q12c), Purchase intentions (Q13a to Q13c) and Willingness to pay more (Q14a to Q14d) factors, respectively. In addition, Cronbach's alpha coefficient values of 0.773, 0.705 and 0.809 are reported for Perceived quality (Q15a to Q15 b), Environmental concerns (Q16a to Q16d), and Health consciousness (Q17a to Q17c) determinants, respectively. Based on Manerikar and Manerikar 's recommendation (2015), the scale used during the pilot survey was considered relatively reliable.

## 4.3 Data gathering process

The data for this study were collected from active Facebook users aged between 18 and 25 years (millennials) living in South Africa. A self-administered electronic questionnaire was used to collect data for this study. Out of the 433 questionnaires that were collected, 377 were included for analysis.

## 4.4 Preliminary data analysis

The preliminary analyses of data included coding, data cleaning and tabulation of the collected data set. The preliminary data analysis results are presented in the following sections.

### 4.4.1 Coding

The questionnaire was divided into three parts, namely Section A, Demographics, Section B and Facebook usage data and Section C, the determinants of Facebook attitude and the theory of expected behaviour. The coding detail is shown in Table 4.2:

**Table 4. 2: Coding information at the main survey**

| Section A: Demographics information and social media usage | | | |
|---|---|---|---|
| **Question** | **Code** | **Construct measured** | **The value assigned to responses** |
| Question 1 | Q1 | Gender | Male (1); Female (2); Other (3) |
| Question 2 | Q2 | Age | 18-21 years (1); 22-25 years (2); over 25 years (3) |
| Question 3 | Q3 | Location | Urban (1); Rural (2) |
| Question 4 | Q4 | Ethnicity | African (1); White (2); Indian (3); Coloured (4); Other (5); Prefer not to say (6) |
| Question 5 | Q5 | Education level | High school (1); Some Tertiary (2); Bachelor's degree (3); Postgraduate (4) |
| Question 6 | Q6 | Experience using Facebook | Under 3 months (1); 3-6 months (2); 6 months – 1 year (3); 1-2 years (4) |
| Question 7 | Q7 | Time spent on Facebook each time | Under 1 hour (1); 1-3 hour (2); Over 3 years (3) |
| Question 8 | Q8 | Time spent on Facebook per week | Under 10 hours (1); 11-20 hours (2); Over 21 hours (3) |

| Section B: Levels of attitude commitment and Facebook | | | |
|---|---|---|---|
| **Item** | **Code** | **Construct measured** | **The value assigned to responses** |

| | | | |
|---|---|---|---|
| Item 1-6 | Q9a-Q9f | Attitude commitment to organic products and Facebook (ATT FB) | Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly agree (5) |
| **Section C: Factors influencing purchase intentions of organic personal care products** | | | |
| Item 7-9 | Q10a-Q10c | Attitude towards organic personal care products | Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly agree (5) |
| Item 10-13 | Q11a-Q11d | Subjective norms | Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly agree (5) |
| Item 14 -16 | Q12a-Q12c | Perceived behavioural control | Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly agree (5) |
| Item 17-19 | Q13a-Q13c | Purchase intentions | Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly agree (5) |
| Items 20-23 | Q14a-Q14d | Willingness to pay for organic care products | Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly agree (5) |
| Item 24-25 | Q15a-Q15b | Perceived quality | Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly agree (5) |
| Item 26-29 | Q16a-Q16d | Environment concern | Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly agree (5) |
| Item 30-32 | Q17a-Q17c | Health consciousness | Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly agree (5) |

**Table 4.2: Coding information at the main survey (continued…)**

### 4.4.2 Data cleaning

Once data was coded, it was then cleaned for data entry. Data cleaning involves removing data that is incomplete, noisy, and inconsistent (Han, Kamber & Pei, 2011). Among the 433 millennials surveyed, 53 did not fully complete the instrument. Out of the 433 returned questionnaires, 377 were usable, which equates to a final response rate of 87%. According to Saunders, Lewis, and Thornhill (2016), a response rate of more than 80% is a full response. This is particularly good since self-administered questionnaires sometimes have a low response rate of less than 50% (Leedy & Ormrod, 2015). The quantity of missing data among 53 subjects occasionally involved between one and six missing responses throughout the instrument.

### 4.4.3 Tabulation

After coding and cleaning the data, it is important to organise it into pre-set categories. Table 4.3 reports on the scaled response frequencies in the questionnaire.

**Table 4. 3: Frequency table for the scaled response data (non-categorical)**

| Scale item | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| **Construct 1: Attitude towards organic personal care products** | | | | | |
| Q10a | 12 | 5 | 14 | 86 | 260 |
| Q10b | 10 | 11 | 47 | 81 | 228 |
| Q10c | 11 | 5 | 13 | 100 | 248 |
| **Construct 2: Subjective norms** | | | | | |
| Q11a | 21 | 54 | 111 | 102 | 89 |
| Q11b | 23 | 44 | 120 | 102 | 88 |
| Q11c | 30 | 40 | 105 | 87 | 115 |
| Q11d | 23 | 47 | 114 | 102 | 91 |
| **Construct 3: Perceived behavioural control** | | | | | |
| Q12a | 18 | 24 | 29 | 87 | 219 |

| | | | | | |
|---|---|---|---|---|---|
| Q12b | 12 | 3 | 8 | 68 | 286 |
| Q12c | 30 | 64 | 58 | 119 | 106 |
| **Construct 4: Purchase intentions** | | | | | |
| Q13a | 9 | 7 | 40 | 123 | 198 |
| Q13b | 13 | 12 | 52 | 83 | 217 |
| Q13c | 9 | 6 | 28 | 90 | 244 |
| **Construct 5: Willingness to pay for organic personal care products** | | | | | |
| Q14a | 25 | 41 | 61 | 134 | 116 |
| Q14b | 17 | 35 | 68 | 122 | 135 |
| Q14c | 16 | 39 | 82 | 134 | 106 |
| Q14d | 56 | 54 | 84 | 110 | 73 |
| **Construct 6: Perceived quality** | | | | | |
| Q15a | 10 | 39 | 76 | 119 | 133 |
| Q15b | 7 | 10 | 48 | 151 | 161 |
| **Construct 7: Environment concern** | | | | | |
| Q16a | 14 | 13 | 33 | 97 | 220 |
| Q16b | 17 | 62 | 106 | 116 | 76 |
| Q16c | 32 | 53 | 120 | 115 | 57 |
| Q16d | 14 | 23 | 63 | 110 | 167 |
| **Construct 8: Health consciousness** | | | | | |
| Q17a | 10 | 15 | 23 | 64 | 265 |
| Q17b | 10 | 5 | 11 | 80 | 271 |
| Q17c | 10 | 11 | 14 | 88 | 254 |

The demographic and Facebook usage data were analysed after tabling the scaled-response data.

## 4.5 Respondent demographics

After coding, cleaning data and tabulation, the researcher organised data into pre-determinable classifications. The respondents' demographic information is shown in Table 4.4.

**Table 4. 4: Demographic information of the respondents**

| Variable | Category | Frequency | % |
|---|---|---|---|
| Gender | Male | 27 | 7.2% |
| | Female | 345 | 91.5% |
| | Other | 5 | 1.3% |
| | **Total** | **377** | **100 .0%** |
| Age | 18 – 21 years | 172 | 45.4% |
| | 22 – 25 years | 168 | 44.6% |
| | over 25 years | 37 | 10% |
| | **Total** | **377** | **100 .0%** |
| Location | Urban | 335 | 88.9% |
| | Rural | 42 | 11.1% |
| | **Total** | **377** | **100 .0%** |
| Ethnicity | African | 217 | 57.6% |
| | White | 95 | 25.2% |
| | Indian | 21 | 5.6% |
| | Coloured | 33 | 8.8% |
| | Other | 3 | 0.8% |
| | Prefer not to answer | 8 | 2.1% |
| | **Total** | **377** | **100 .0%** |
| Highest level of education | High school | 102 | 27.1% |
| | Some tertiary | 142 | 37.7% |
| | Bachelor's degree | 80 | 21.2% |
| | Postgraduate | 53 | 14.1% |
| | **Total** | **377** | **100 .0%** |

The demographic characteristics are discussed below.

### 4.5.1 Gender profile

Figure 4.1 shows the demographic profile of the sample.

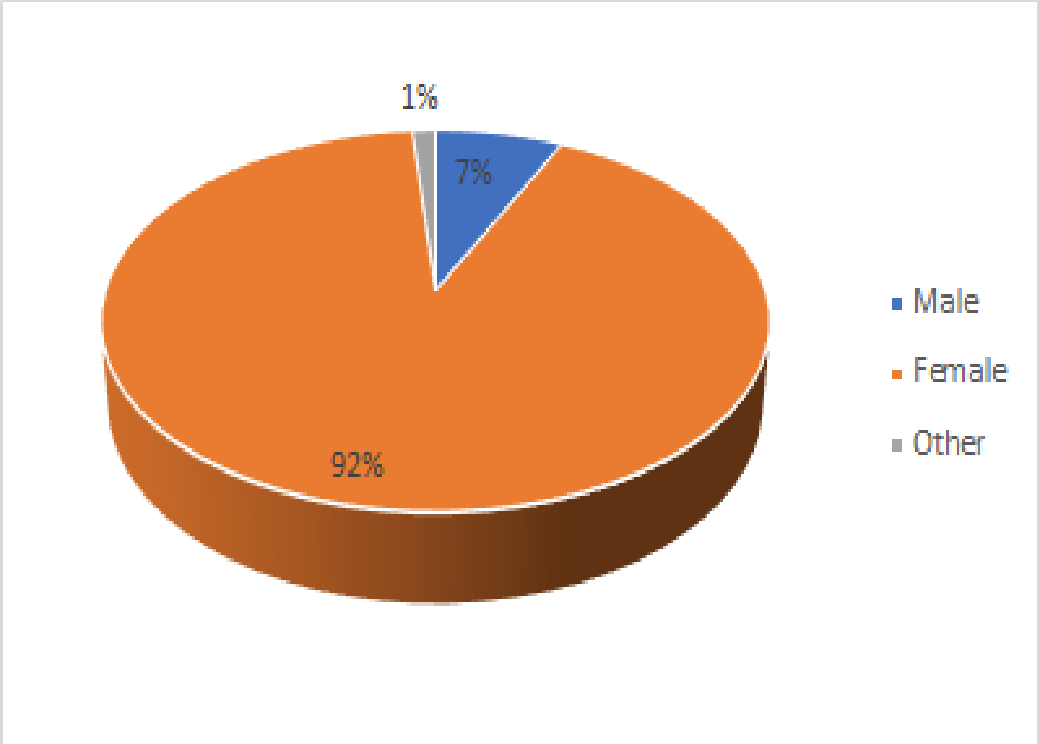



**Figure 4. 1: Participants' gender profile**

The virtual snowball survey of 377 Facebook respondents resulted in an over - sampling of female respondents (92%). The results for the total sample are therefore in a way representative of all South African millennials. However, the finding allows for future research exploring attitudinal differences between South African male and female millennials towards organic products.

### 4.5.2 Age

The age distribution of the sample is illustrated in Figure 4.2.

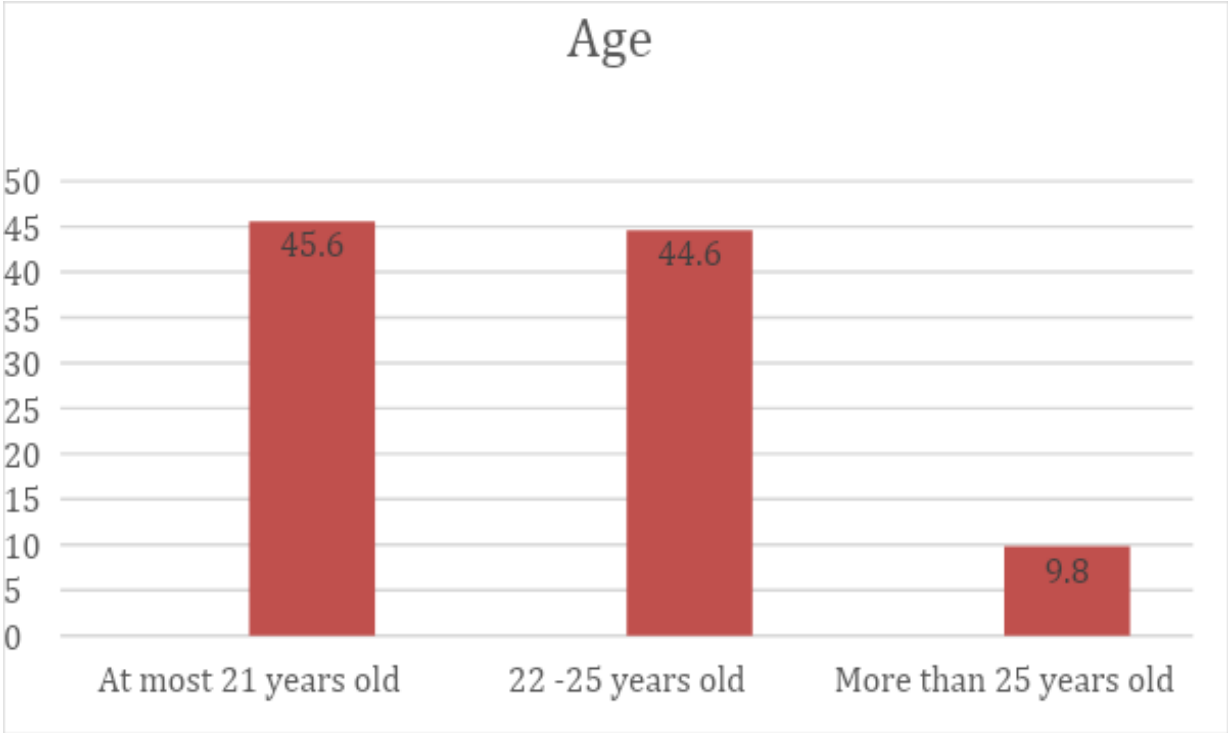



**Figure 4. 2: Age distribution**

The sample age range was evenly split between 21 years olds (45.6%) and 22 to 25-year olds (44.6%). Of the respondents, 9.8% were more than 25 years old.

### 4.5.3 Residential location

Figure 4.3 shows that most participants reside mainly in urban areas (89%), while 11% reported they lived in rural areas.

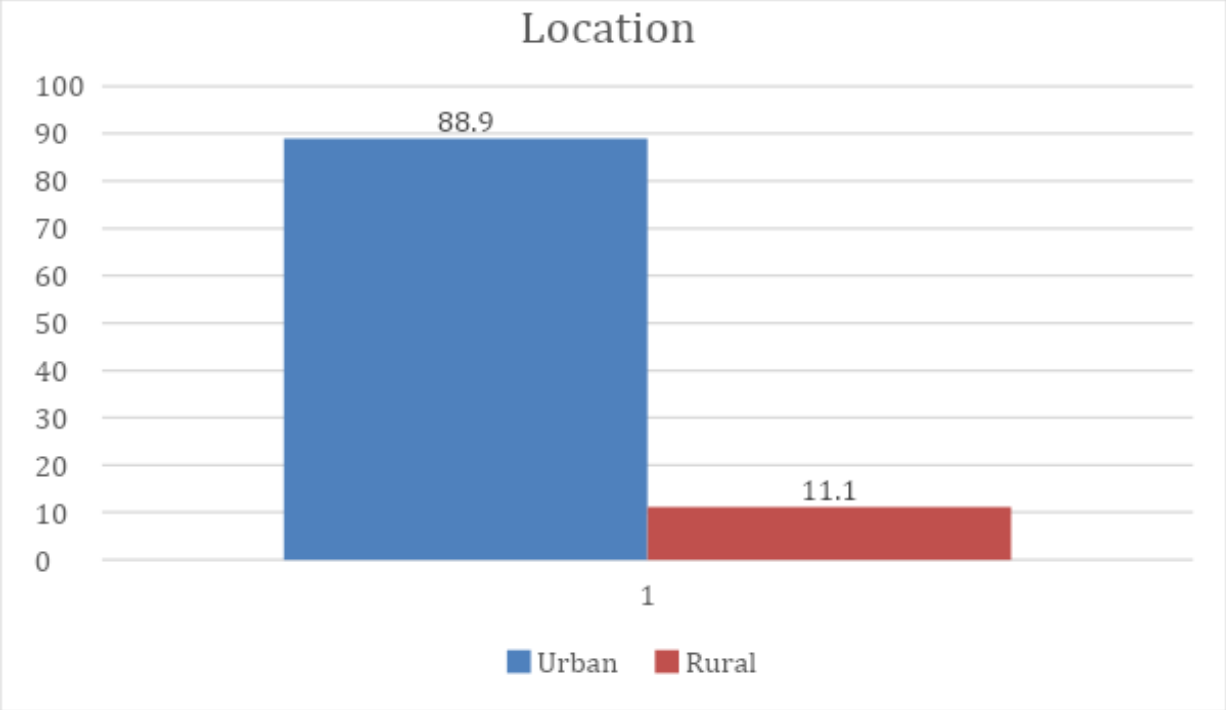



**Figure 4. 3: Location**

### 4.5.4 Ethnicity

Figure 4.4 shows the ethnicity of the groups that are represented in the sample.

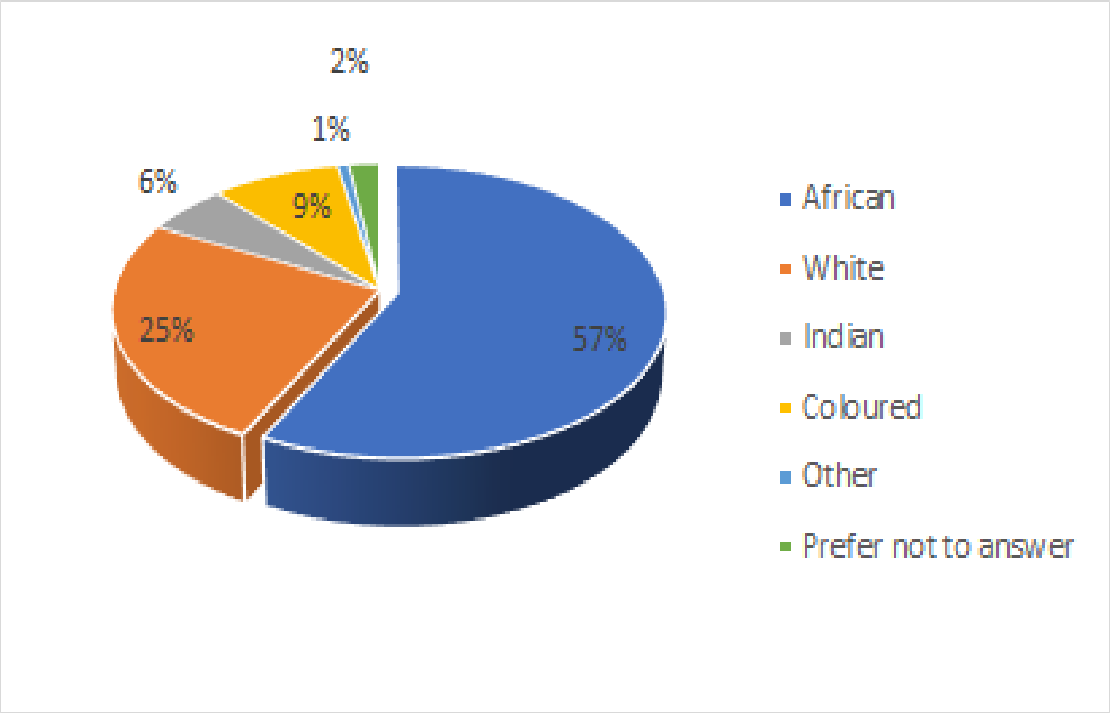



**Figure 4. 4: Ethnicity**

More than half of the sample respondents identified themselves as Africans (57%), followed by those who identified themselves as whites (25%), coloureds (9%) and Indian (6%). Of the participants, 1% identified themselves as others, while 2% preferred not to answer the question.

### 4.5.5 Education

With regard to the educational profile of the respondents, Figure 4.5 indicates that most survey participants had some tertiary education (38%), followed by high school (27%), a bachelor's degree (21%) and only 14% of respondents stated they had a postgraduate degree.

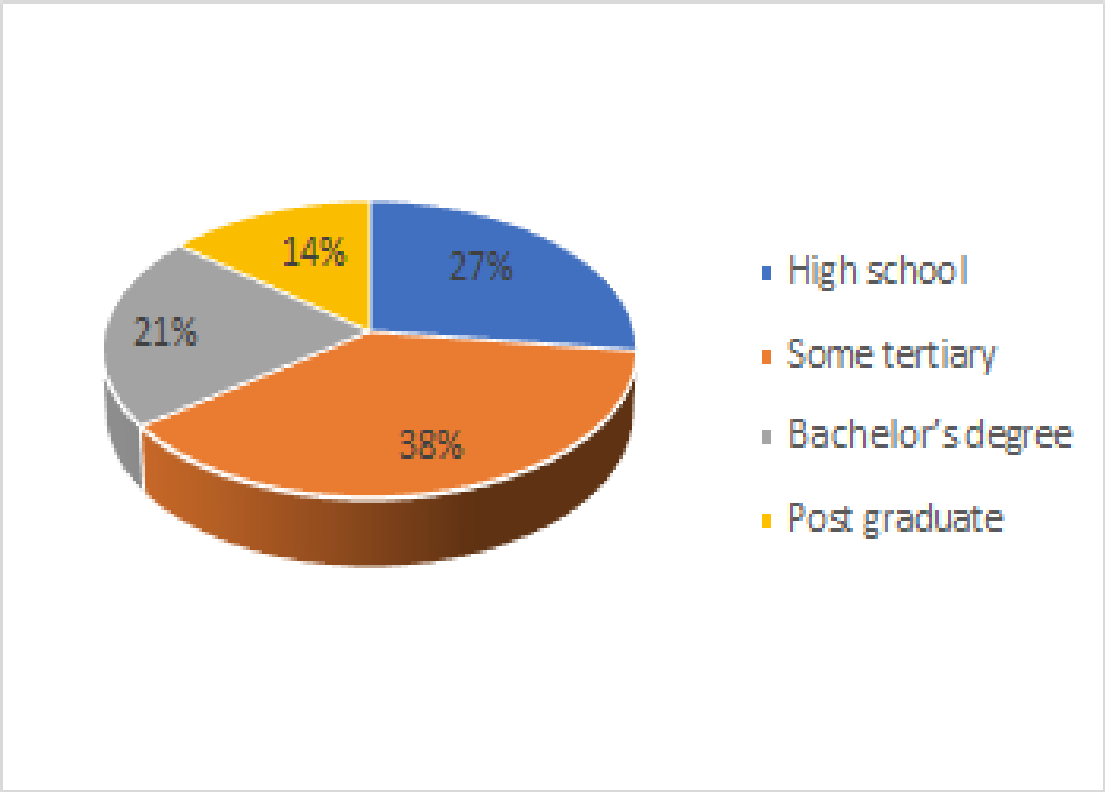



**Figure 4. 5: Educational profile**

## 4.6 Demographic and Facebook Usage Habits

This section provides an analysis of the demographic information of the respondents and their Facebook usage habits analysis − with emphasis on their experience with Facebook and the number of hours they spend on Facebook each time and per week.

### 4.6.1 Facebook usage analysis

Table 4.5 shows an analysis of the Facebook usage of respondents.

**Table 4. 5: Facebook usage habits**

| Variable | Category | Frequency | % |
|---|---|---|---|
| Experience using Facebook | Under 1 year | 8 | 2.1% |
| | Over 1 year | 369 | 97.9% |
| | **Total** | **377** | **100 .0%** |
| Time spent on Facebook each time. | Under 1 hour | 160 | 42.4% |
| | 1 – 3 hours | 124 | 32.9% |
| | Over 3 hours | 93 | 24.7% |
| | **Total** | **377** | **100 .0%** |
| Time spent on Facebook per week | Under 10 hours | 181 | 48.0% |
| | 11 – 20 hours | 100 | 26.5% |
| | Over 21 hours | 96 | 25.5% |
| | **Total** | **377** | **100 .0%** |

Facebook usage habits are discussed below.

### 4.6.2 Facebook experience

Regarding how long respondents have been using Facebook, as expected, the results show that most millennials surveyed have been using Facebook for over one year (92%). In contrast, only 2% indicated less than a year of Facebook usage. This is illustrated in Figure 4.8.

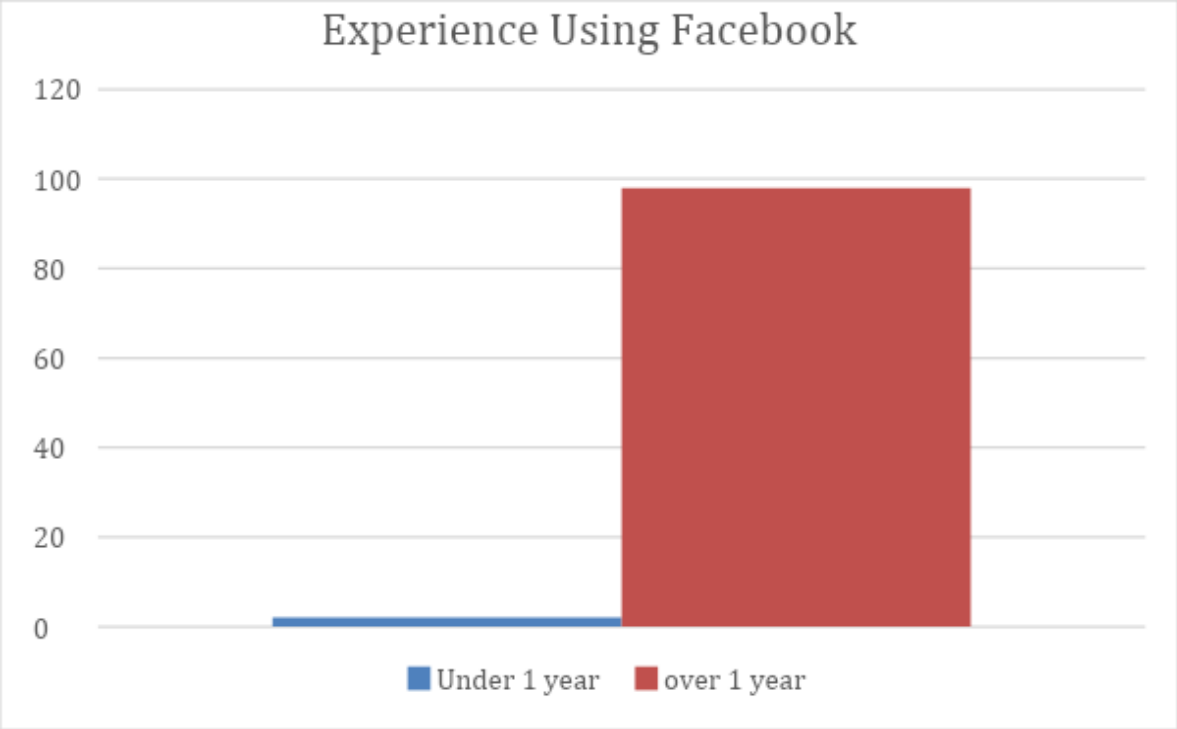



**Figure 4. 6: Length of Facebook usage**

Almost all respondents have been using Facebook for more than a year.

### 4.6.3 Time spent on Facebook each time.

Figure 4.9 reveals that participants spend under one hour per each time logged on to Facebook (42%) or one to three hours (33%) hours per log on period. 35% indicated they spend over three hours on the site. Close to 45% spend less than one hour on Facebook each time.

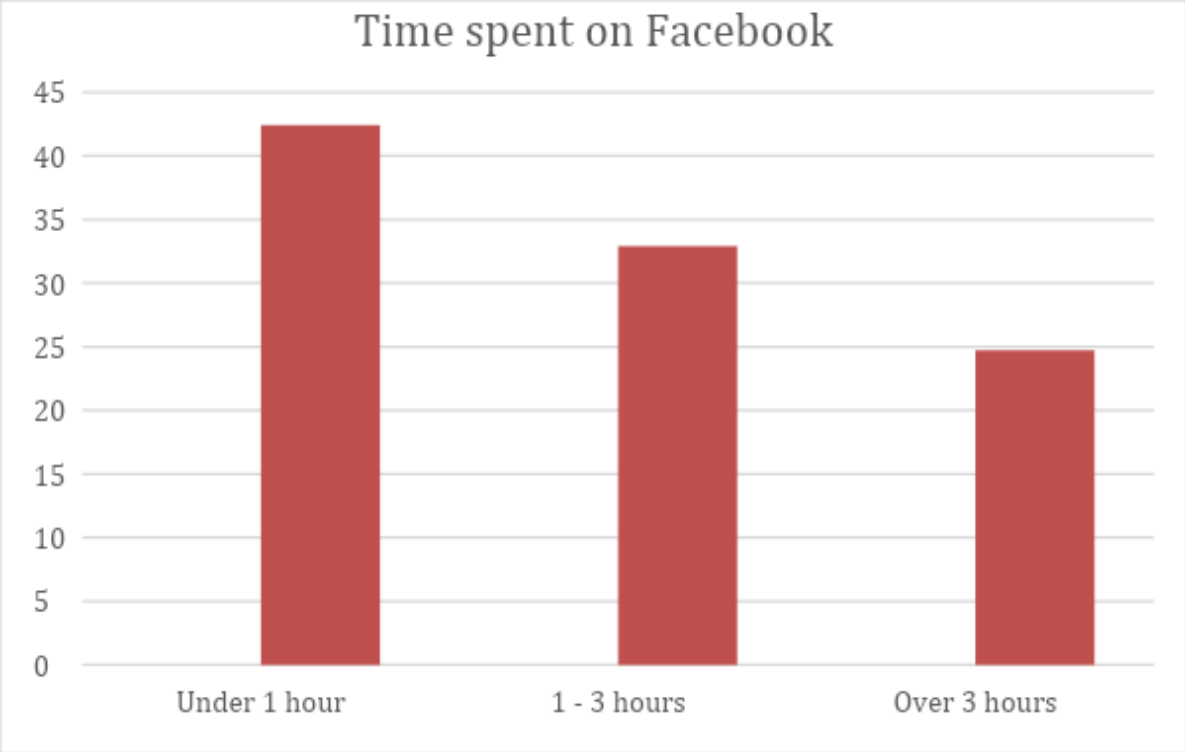



**Figure 4. 7: Time spent on Facebook each time**

### 4.6.4 Time spent on Facebook per week

Figure 4.7 reveals that nearly half of our respondents spend less than 10 hours a week on Facebook (48%), the remainder of the sample reported an even length of time spent on Facebook per week, eleven to twenty hours (26%), and more than twenty-one hours. Close to 50% spent less than ten hours on Facebook per week.

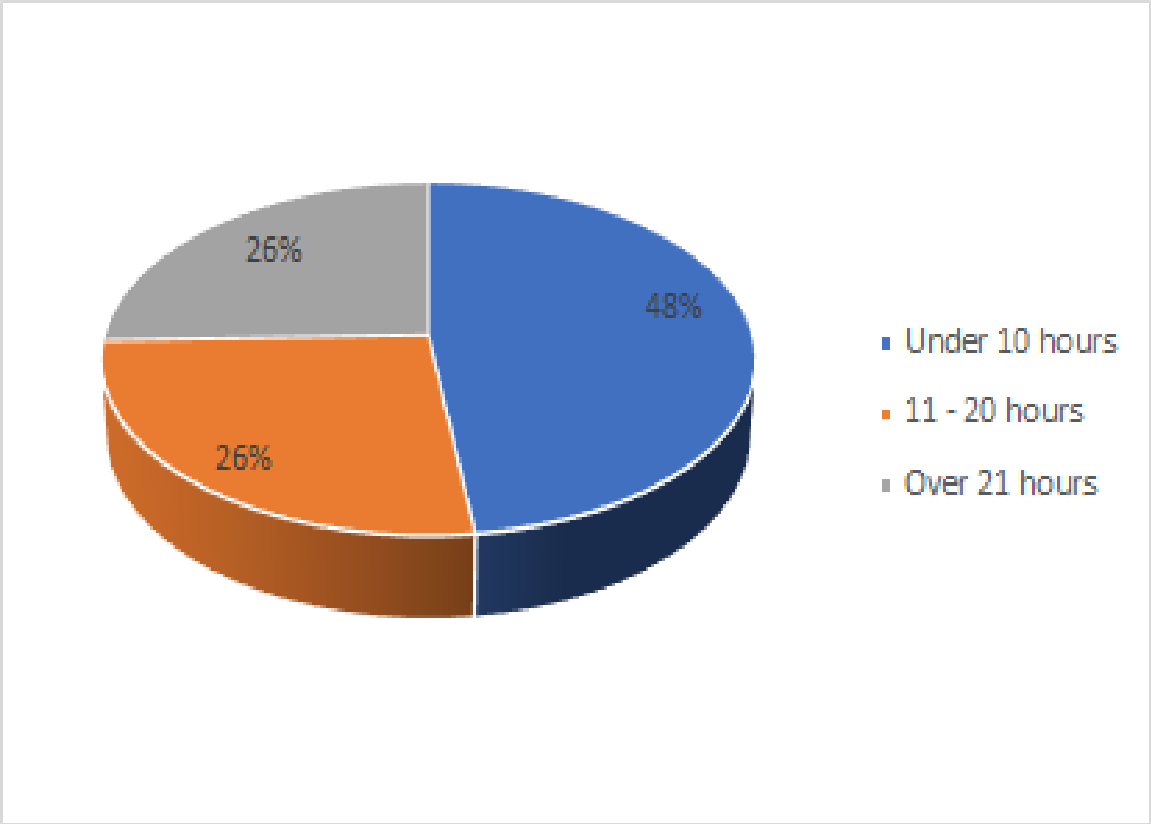



**Figure 4. 8: Length of time spent on Facebook per week**

The following section discusses the exploratory factor analysis conducted on the scaled responses in the questionnaire.

## 4.7 Exploratory Factor Analysis

Exploratory factor analysis (EFA) was conducted using Varimax Rotation Principal Component Analysis, which helped to reduce data. Loading element below 0.50 was removed. Principal Components Analysis (PCA) is a multivariate statistical technique used to reduce dimensions and to further understand the underlying classes of data variables (i.e. variables that can calculate the same or similar underlying effect) by extracting an ordered set of uncorrelated sources of variance in a multivariate system (Rea & Rea, 2016). There were 32 items and the item, “Q11c. My family thinks that I should buy organic personal care products rather than normal products” was removed due to low reliability. In addition, items, “Q12c. I have money, time and willingness to purchase organic personal care products” and “Q15a. Organic personal care products have consistent quality” were removed from the analysis due to insignificant factor loading. Therefore 29 items were used for the factor analysis.

### 4.7.1 Kaizer-Meyer-Olkin test

Before factor extraction, Bartlett's Sphericity and Kaiser-Meyer-Olkin (KMO) sampling adequacy test were performed to determine whether the factor analysis technique was appropriate for the data set (Dlodlo & Dhurup, 2013). Sampling is appropriate if KMO is above 0.5 (Hair et al., 2019). According to Pallant (2013), KMO should be 0.6 and above. Kaiser (1974) recommends a minimum of 0.5 and a medium value of 0.5 to 0.7, a good value of 0.7 to 0.8, an excellent value of 0.8 to 0.9 and above (Hutcheson & Sofroniou, 1999). Table 4.6 shows a chi-square value of 5140.884 and a KMO sampling adequacy measure of 0.913 (> 0.50), indicating the suitability of the data set for factor analysis.

### 4.7.2 Bartlett’s test of sphericity

Bartlett's Sphericity test is quantitative statistics used to determine whether factor analysis is relevant to the data set (Dlodlo & Dhurup, 2013). Specifically, the matrix of population correlation is an identity matrix where each variable agrees perfectly with itself but has no association with other variables. Significant importance rejects the hypothesis and appropriates factor analysis (Hair et al., 2019).

**Table 4. 6: KMO and Bartlet Test**

| | | |
|---|---|---|
| **Kaiser-Meyer-Olkin Measure of Sampling Adequacy.** | | 0.913 |
| **Bartlett's Test of Sphericity** | Approx. Chi-Square | 5140.884 |
| | df | 406 |
| | Sig. | $p < .001$ |

Based on Varimax Rotation using Kaiser Normalisation, six factors were extracted, and these six factors explained 61.68% of the total variance, which is adequate, according to Malhotra (2010). Every factor consists of all variables, with factor loads greater than 0.5. Six factors grouped nine constructs. Table 4.7 lists individual values, percentage of variance, and total variance of the six derived variables.

**Table 4. 7: Rotated sums of squared loadings**

| Factor | Eigenvalues | % of Variance | Cumulative % |
|---|---|---|---|
| 1 | 5.132 | 17.695 | 17.695 |
| 2 | 3.019 | 10.409 | 28.105 |
| 3 | 2.648 | 9.130 | 37.235 |
| 4 | 2.564 | 8.841 | 46.077 |
| 5 | 2.296 | 7.918 | 53.994 |
| 6 | 2.229 | 7.685 | 61.680 |

The percentage of variance explained, the scree plot and eigenvalue criterion guided the extraction of factors. The total variance explained by the extracted factors is 61.7% which, according to Malhotra, (2010) is significant. When interpreting eigenvalues, according to Hair et al. (2019), the general rule is to retain all factors with eigenvalues greater than 1.0, whose total variance contribution is considered significant. All factors with eigenvalues less than 1 are considered insignificant and are disregarded. Item reduction and scale refinement were undertaken whereby items with low factor loadings, communalities and low-item-to-total correlations were investigated. In addition, items that loaded heavily on more than one factor were eliminated from further scale development with a view to enhance “interpretability of the factor structure” (Malhotra, 2010:643). A minimum cut-off of 0.50 was used on the variable loadings. Hair et al. (2019) suggest that

factor loadings greater than ± 0.30 are considered to meet the minimum levels, loadings of ± 0.40 are considered important, and loading of ± 0.50 and greater are considered more significant. In this case, the loading of ± 0.50 was used to determine significant items in a factor.

**Table 4. 8: Factor rotation matrix**

| Rotated Component Matrix | | | | | | |
|---|---|---|---|---|---|---|
| | Component | | | | | |
| **Items** | **1** | **2** | **3** | **4** | **5** | **6** |
| Q10c. | 0.743 | | | | | |
| Q10b. | 0.734 | | | | | |
| Q13b. | 0.712 | | | | | |
| Q12b. | 0.665 | | | | | |
| Q13a. | 0.628 | | | | | |
| Q10a. | 0.604 | | | | | |
| Q15b. | 0.596 | | | | | |
| Q12a. | 0.574 | | | | | |
| Q13c. | 0.568 | | | | | |
| Q9b. | | 0.706 | | | | |
| Q9e. | | 0.697 | | | | |
| Q9c. | | 0.630 | | | | |
| Q9f. | | 0.623 | | | | |
| Q9a. | | 0.600 | | | | |
| Q9d. | | 0.597 | | | | |
| Q16b. | | | 0.768 | | | |
| Q16c. | | | 0.711 | | | |
| Q16d. | | | 0.695 | | | |
| Q16a. | | | 0.541 | | | |
| Q17b. | | | | 0.870 | | |
| Q17c. | | | | 0.819 | | |
| Q17a. | | | | 0.758 | | |
| Q14a. | | | | | 0.759 | |
| Q14d. | | | | | 0.731 | |
| Q14c. | | | | | 0.627 | |
| Q14b. | | | | | 0.563 | |
| Q11b. | | | | | | 0.858 |
| Q11a. | | | | | | 0.744 |
| Q11d. | | | | | | 0.735 |

While the items generally loaded as anticipated on the conceptualised constructs, two items (Q12c and Q15a) were removed from the analysis. These items were reviewed to determine that their deletion would not affect the original conceptualisation of the construct. Once this was established, the two items were removed from the data set.

The first factor had items from four constructs:

- Q10. Attitude towards organic personal care products (ATT OPP)
- Q13. Purchase intentions (PI)
- Q12. Perceived behavioural control (PBC)
- Q15. Quality perception (QP)

The factor had the following items loading highly on the factor:

- “Q10c. I think that purchasing organic personal care products is safe”
- “Q10b. I prefer to buy organic skincare products to non-organic products”
- “Q13b. I find that organic personal care products are better than no organic alternatives”.

The factor was attitude, purchase intentions and perceived behaviour control towards organic care products. It had an eigenvalue of 5.132 and explained 17.7% of the total variation.

The second factor had an eigenvalue of 3.019, and it explained 10.4% of the total variation. The factors consisted of all items on Q9. Attitude commitment to organic products and Facebook (ATT FB). The items “Q9b. Facebook represents my friends’ and our values for environmentally friendly products” and “Q9e. Viewing organic products and adverts on Facebook is more enjoyable than off Facebook” were loading highly on the factor.

All the items on the construct, “Q16. Environmental concern” loaded on factor three. The factor had an eigenvalue of 2.648 and explained 9,13% of the total variation. The items “Q16b. I do not buy products that cause potential damage to the environment” and “Q16c. I have convinced my peers to stop using environmentally harmful products” had the highest loadings.

Factor four consisted of all the items on “Q17. Health consciousness”, which factor loadings that range from 0.758 to 0.870. The item, “Q17b. I’m alert to changes in my

health” was the one with the highest loading. It had an eigenvalue of 2.564 and explained 8.84% of the total variation.

Factor five was named “Q14. Willingness to pay for organic personal care products” because all the items from this construct loaded on this factor with the item, “Q14a. I intend to pay more for organic personal products” having the highest loading of 0.759. The eigenvalue was 2.296, and it explained 7.92% of the total variation.

The last factor consisted of all the items from the construct on “Q11—subjective norms with the item, “Q11b. My friends think that I should practice environmentally-friendly behaviour” having the highest loading of 0.858. The eigenvalue was 2.229, and it explained 7.69% of the total variation. Overall, the factor solution accounted for 61.7% of the total variation, and according to Pallant (2013), this is a robust solution.

It can be concluded from the EFA that six factors of attitude commitment to organic products and Facebook (ATT FB), attitude towards organic personal care products (ATTOPP), environmental concern (HC), health consciousness, willingness to pay for organic personal care products (WPOPP), subjective norms (SN) can be extracted from the measurement statements. By applying a confirmatory factor analysis (CFA), the seven factors were further verified and refined (Hair et al., 2019).

### 4.8 Internal consistency reliability assessment

The reliability assessment for the study instrument was determined by calculating the Cronbach alpha coefficient values as shown in Table 4.9 According to Manerikar and Manerikar (2015), Cronbach's alpha coefficients of less than 0.5 are considered unacceptable; those between 0.5 to less than 0.6 are regarded as poor; 0.6 to less than 0.7 acceptable; 0.7 to less than 0.9 good (low-stakes testing) and greater than or equal to 0.9 are considered excellent (high-stakes testing). The items for subjective norm had a Cronbach Alpha of 0.578, below the recommended level, resulting in item “Q11c. My family thinks that I should buy organic personal care products rather than normal

products” being dropped and the Cronbach alpha coefficient increased to 0.780 (as shown in Table 4.18).

**Table 4. 9: Internal consistency reliability assessment for constructs**

| Construct | No. of items | Cronbach’s alpha | Acceptable level |
|---|---|---|---|
| Q9. Levels of attitude commitment to organic products and social media | 6 | 0.775 | Good |
| Q10. Attitude towards organic personal care products | 3 | 0.790 | Good |
| Q11. Subjective norms | 3 | 0.780 | Good |
| Q12. Perceived behavioural control | 3 | 0.682 | Acceptable |
| Q13. Purchase intentions | 3 | 0.801 | Good |
| Q14. Willingness to pay for organic personal care products | 4 | 0.765 | Good |
| Q15. Quality perception | 2 | 0.788 | Good |
| Q16. Environmental consciousness | 4 | 0.773 | Good |
| Q17.Health consciousness | 3 | 0.894 | Good |
| Total | 31 | 0.928 | Excellent |

The sub-scale reliability values ranged between 0.682 and 0.894, while the standardised Cronbach's alpha value for the entire scale was established at 0.928, indicating an adequate indication of internal reliability. Therefore, these results support the adequacy of the scale as being adequate in obtaining the elements included.

## 4.9 Correlation analysis

According to Hair et al. (2014), a correlation matrix of construct aids was built to determine the nomological validity of a proposed model. Therefore, before performing the Structural Equation Modelling part of the study, Pearson's correlation coefficients were determined between each pair of constructs. Table 4.10 illustrates this study's correlation matrix.

**Table 4. 10: Correlation analysis**

| Constructs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 1- (ATTFB) | 1 | | | | | | | | |
| 2- (ATT OPP) | 0.461** | 1 | | | | | | | |
| 3- (SN) | 0.316** | 0.400** | 1 | | | | | | |
| 4- (PBC) | 0.474** | 0.620** | 0.385** | 1 | | | | | |
| 5- (PI) | 0.528** | 0.733** | 0.405** | 0.656** | 1 | | | | |
| 6- (WTP) | 0.348** | 0.482** | 0.308** | 0.525** | 0.574** | 1 | | | |
| 7- (QP) | 0.492** | 0.561** | 0.322** | 0.535** | 0.631** | 0.620** | 1 | | |
| 8- (EC) | 0.403** | 0.488** | 0.419** | 0.422** | 0.513** | 0.354** | 0.360** | 1 | |
| 9- (HC) | 0.340** | 0.550** | 0.341** | 0.541** | 0.531** | 0.332** | 0.408** | 0.475** | 1 |

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

Note: ATT FB (Attitude Commitment); ATT OPP (Attitude towards organic personal care products); SN (Subjective norms); PBC (Perceived behavioural control); PI (Purchase intentions); WTP (Willingness to pay); PQ (Perceived quality); HC (Health consciousness); EC (Environmental concern).

There were moderate, positive coefficients of correlation between ATT FB with ATTOPP ($r = 0.461$), SN ($r = 0.316$), PBC ($r = 0.474$), PI ($r = 0.528$), WTP ($r = 0.348$), PQ ($r = 0.492$), EC ($r = 0.403$) and HC ($r = 0.340$). ATTOPP had a statistically significant positive correlation with PI ($r = 0.733$) and PBC ($r = 0.686$). Whilst, moderate, positive correlation coefficients were reported for ATTOPP with SN ($r = 0.400$), WTP ($r = 0.492$), PQ ($r = 0.561$), EC ($r = 0.488$) and HC ($r = 0.550$). Comparably, SN showed moderate positive correlation coefficients when paired with PBC ($r = 0.385$), PI ($r = 0.405$), WTP ($r = 0.308$), PQ ($r = 0.322$), EC ($r = 0.419$), HC ($r = 0.341$), respectively. The PBC construct also reported significant correlation coefficients when correlated with PI ($r = 0.656$) and showed moderate positive correlation coefficients between PBC and WTP ($r = 0.525$), PQ ($r = 0.535$), EC ($r = 0.422$) and HC ($r = 0.541$). PI had a statistically significant correlation of 0.5, WTP ($r = 0.574$), PQ ($r = 0.631$), EC ($r = 0.513$) and HC ($r = 0.531$) respectively. In addition, WTP reported significant correlation coefficients when paired with PQ (0.620), and moderate positive correlation coefficients were reported between WTP and EC ($r =$

0.354) and HC ($r$ = 0.332) respectively. PQ indicated moderate positive correlation coefficients when correlated with EC ($r$ = 0 0.360) and HC ($r$ = 0.408). Additionally, EC showed moderate correlation coefficients when correlated against HC ($r$ = 0.475).

In line with the guidelines suggested by Hair et al. (2014), significant positive correlations on each construct pair in this study indicate nomological validity. Therefore, all the measurement models included all constructs. The proposed study hypotheses could therefore be tested after confirming the reliability of the research instrument, summary profile measures, normality of the data set and nomological validity of the study.

## 4.10 Structural Equation Modelling

The structural equation modelling (SEM) was fitted to the data to test the model in Figure 4.9 by examining the relationships between the constructs.

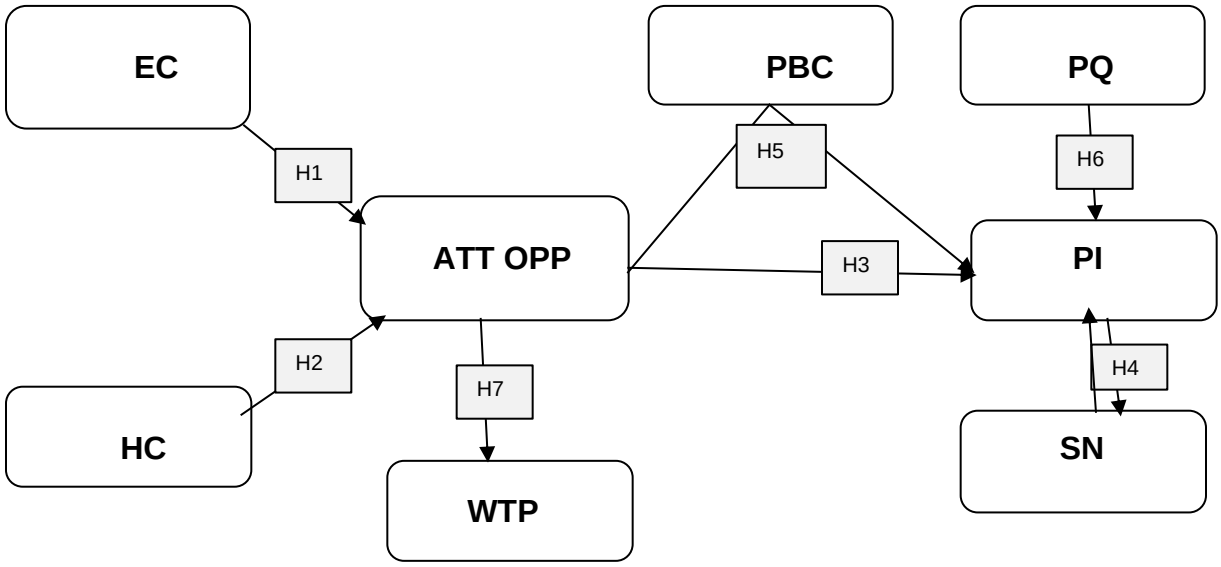



**Figure 4. 9: The research conceptual framework**

The method of maximum likelihood estimate (MLE) was used. This is a flexible and robust approach to parameter estimation, in which the 'most likely' parameter values are identified to achieve the best model fit (Hair et al., 2019). It is the most widely used technique. The analysis was done in IBM SPSS AMOS version 26. The structural equation modelling was done in two parts by examining the measurement model and the structural model. The measurement model was tested using confirmatory factor analysis, and the findings of the confirmatory analysis are presented in the next sub-section.

### 4.10.1 Measurement model (Confirmatory Factor Analysis (CFA))

Confirmatory factor analysis was done to determine how well the specified measurement theory − composed of the measured variables and factors − fits reality as captured by the data (Hair et al., 2019). The confirmatory factor analysis was done on all the nine constructs. The confirmatory factor analysis allowed the researcher to test for the construct validity of the model using convergent and discriminant validity. The items with

a factor loading above 0.6 were retained in the study. The fitness of the model was assessed by several measures:

- Chi-square test – non-significant chi-square with p-values more than .05;
- CFI, GFI, TLI, IFI, NFI – greater than .9;
- RMSEA – less than .08;
- Cmin/df – the ratio should be less than 5.

According to Hu and Bentler (1999), and Hair et al. (2019), the following cut-off criteria in Table 4.11 should be used.

**Table 4. 11: Cut-offs criteria**

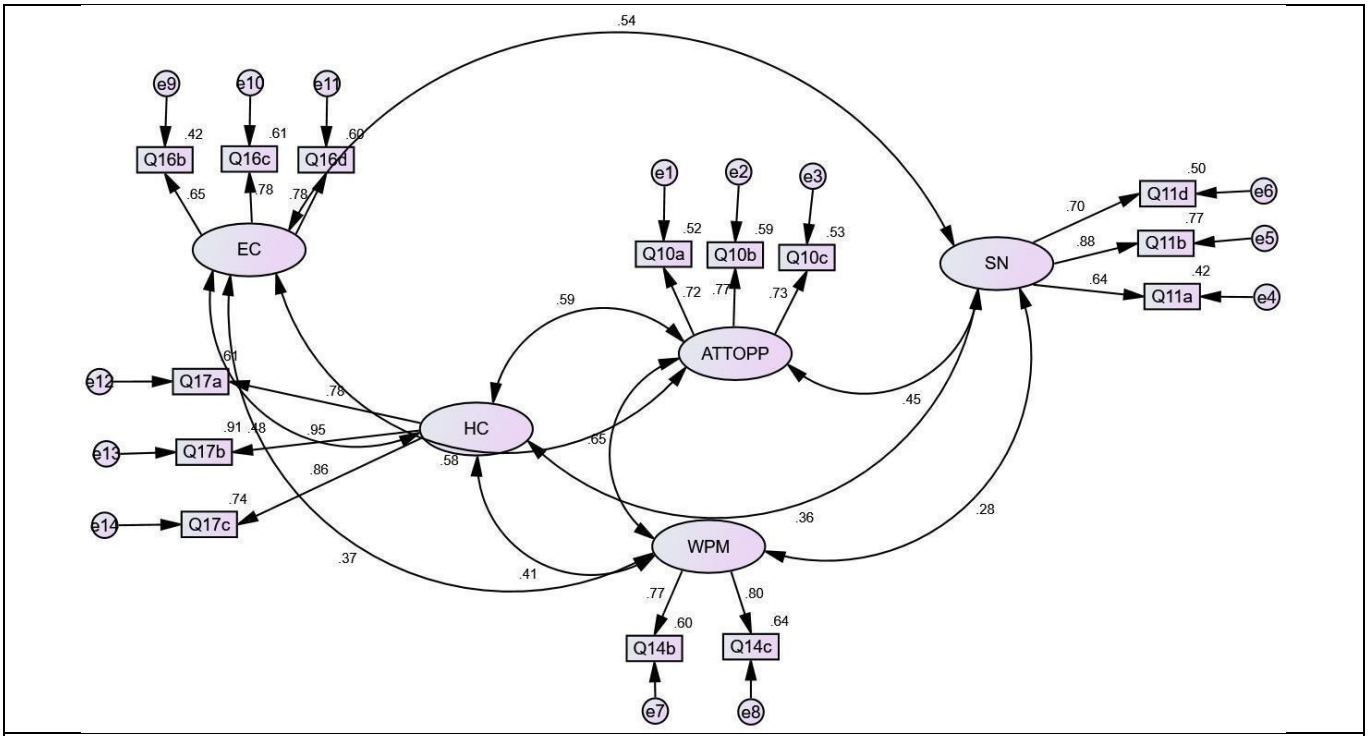
| Measure | Terrible | Acceptable | Excellent |
|---|---|---|---|
| CMIN/DF | > 5 | > 3 | > 1 |
| CFI | <0.90 | <0.95 | >0.95 |
| SRMR | >0.10 | >0.08 | <0.08 |
| RMSEA | >0.08 | >0.06 | <0.06 |
| PClose | <0.01 | <0.05 | >0.05 |
| NFI | <0.90 | <0.95 | >0.95 |
| TLI | <0.90 | <0.95 | >0.95 |
| RNI | <0.90 | <0.95 | >0.95 |
| AGFI | <0.90 | <0.95 | >0.95 |
| PNI | <0.90 | <0.95 | >0.95 |

According to Hair et al. (2019), the chi-square statistic, Goodness of Fit index (GFI), Root Mean Square Error of Approximation (RMSEA), Root Mean Square Residual (RMR) and Standardized Root Mean Residual (SRMR) are absolute indices. The incremental fit indices are the Normed Fit Index (NFI), Tucker Lewis Index (TLI), Comparative Fit Index (CFI) and Relative Non-centrality index (RNI). The parsimony Fit Indices are Adjusted Goodness of Fit Index (AGFI) and Parsimony Normed Fit Index (PNI). The authors

suggest that using three to four fit indices provide adequate evidence of model fit. Gaskin and Lim (2016) indicated that a combination of $CFI > 0.95$ and $SRMR < 0.08$ and to solidify evidence further, they recommend adding the $RMSEA < 0.06$. Hair et al. (2019) recommend the use of one incremental index, one absolute index in addition to the chi-square value and its associated degrees of freedom.

### 4.10.2 Confirmatory factor analysis of the measurement model

The confirmatory factor analysis consisting of all constructs was done, and only five factors were retained, as shown in Figure 4.10. Standardised loading estimates should be .5 or higher, and ideally .7 or higher (Hair et al., 2019).




Cmin/df =3.125 CFI =0.940; GFI=0.926, NFI=0.915, TLI=0.919; RMR =0.057; RMSEA= 0.076

**Figure 4. 10: Confirmatory factor analysis of the model**

To arrive at model fit, the constructs, QP, PI, PBC and ATTFB were removed from the model. The model fit measures are tabulated in Table 4.12

**Table 4. 12: Model fit measures for confirmatory factor analysis**

| Measure | Estimate | Threshold | Interpretation |
|---|---|---|---|
| CMIN | 209.383 | - | - |
| DF | 67.000 | - | - |
| CMIN/DF | 3.125 | Between 1 and 3 | Excellent |
| CFI | 0.940 | $> 0.95$ | Acceptable |
| SRMR | 0.057 | $< 0.08$ | Excellent |
| RMSEA | 0.076 | $< 0.06$ | Excellent |

The absolute fit indices used to assess the model were chi-square value and probability value, the goodness of fit index, root mean square error of approximation (RMSEA) and standardised root mean residual (SRMR). The chi-squared ($\chi^2$) value was 209.383, with 67 degrees of freedom and a probability value of less than .001. The chi-square is a mathematical function of the sample size since it tends to increase as the sample size increases, which makes it difficult to achieve a model fit, especially when large sample sizes are used. Thus, the $\chi^2$ over degrees of freedom (CMIN/DF) − the minimum discrepancy − is preferred because it is considered as an adequate measurement. Looking at Table 4.20, the CMIN/DF, SRMR and RMSEA are all excellent fits. The SRMR and RMSEA were .057 and .076 respectively, and the GFI was .926, and the model is acceptable, and it is a good fit.

The incremental fits used to assess the model were comparative fit index (CFI), normed fit index (NFI), and Tucker Lewis Index (TLI) with values of 0.940, 0.915 and 0.914 respectively. These values are above 0.9, and thus the model is acceptable.

### 4.10.3 Construct validity

Construct validity was assessed using convergent, discriminant and nomological validity. Average Variance Extracted (AVE) and construct reliability (CR) were used to measure convergent validity and construct reliability (CR). To achieve convergent validity, all AVE should be greater than .5, that is, $AVE > .5$ and all construct reliabilities should be greater than AVEs, that is, $CR > AVE$. In this case, this was achieved, as shown in Table 4.13.

**Table 4. 13: Standardised loadings, construct reliability and AVE**

| Construct items | Std. loading | Construct reliability | AVE |
|---|---|---|---|
| Environmental concern (EC) | | | |
| Q17a | 0.782 | | |
| Q17b | 0.953 | | |
| Q17c | 0.858 | 0.782 | 0.546 |
| Health consciousness (HC) | | | |
| Q16b | 0.651 | | |
| Q16c | 0.784 | | |
| Q16d | 0.776 | 0.900 | 0.752 |
| Willingness to for organic personal care products (WTP) | | | |
| Q14b | 0.773 | | |
| Q14c | 0.799 | 0.764 | 0.618 |
| Attitude towards organic personal care products (ATT OPP) | | | |
| Q10a | 0.721 | | |
| Q10b | 0.769 | | |
| Q10c | 0.731 | 0.784 | 0.548 |
| Subjective norms (SN) | | | |
| Q11a | 0.644 | | |
| Q11b | 0.879 | | |
| Q11d | 0.704 | 0.790 | 0.561 |

There are no construct validity concerns or issues since all AVEs are greater than 0.5. CR is greater than AVE and it can be concluded that convergent validity was achieved.

### 4.10.4 Discriminant validity

Discriminant validity was assessed by comparing the square root of AVEs and inter-construct correlations as proposed by Fornell and Larcker (1981) (as cited in Farrell, 2010). Discriminant analysis can be achieved when the square root AVE is greater than the inter-construct correlations, and the maximum of shared variance (MSV) should be less than AVE. Table 4.14 gives the diagonal matrix as square roots of AVE, and the bottom half of the table are the inter-construct correlations, while the top half is the squared inter-construct correlations (SICs).

**Table 4. 14: AVE, MSV, Inter-construct correlations and Squared Inter-construct correlations (SICs)**

| Construct | AVE | MSV | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| 1. Environmental concern (EC) | 0.546 | 0.340 | 0.739 | 0.233 | 0.340 | 0.138 | 0.287 |
| 2.Health consciousness (HC) | 0.752 | 0.352 | 0.483*** | 0.867 | 0.352 | 0.167 | 0.127 |
| 3. Attitude towards organic personal care (ATTOPP) | 0.548 | 0.421 | 0.583*** | 0.593*** | 0.740 | 0.420 | 0.203 |
| 4. Willingness to pay for organic personal care products (WTP) | 0.618 | 0.421 | 0.372*** | 0.409*** | 0.648*** | 0.786 | 0.079 |
| 5. Subjective norms (SN) | 0.561 | 0.287 | 0.536*** | 0.356*** | 0.450*** | 0.281*** | 0.749 |

The corresponding inter-construct correlations are all less than the square root of the AVEs − thus, all AVEs are greater than the Squared Inter-construct Correlations (SICs). It can be noted that discriminant validity was achieved.

### 4.10.5 The Structural Equation Model summary statistics of the estimated model

After the confirmatory factor analysis, the structural model was fitted to the data. The fitness of the model was assessed by applying the guidelines proposed by Hu and Bentler (1999), and Hair et al. (2019). The first step was assessing the model before checking the significance of the paths. The following model fit the summary statistics of the chi-square results shown in Table 4.15 were obtained.

**Table 4. 15: Model fit summary of the chi-square results**

| Model | NPAR | CMIN | DF | P | CMIN/DF |
|---|---|---|---|---|---|
| Default model | 33 | 236.737 | 72 | $p < 0.001$ | 3.288 |
| Saturated model | 105 | .000 | 0 | | |
| Independence model | 14 | 2469.215 | 91 | $p < 0.001$ | 27.134 |

The overall fit resulted in a $\chi 2$ value of 236.737, with 72 degrees of freedom, resulting in a CMIN/DF of 3.288. According to the guidelines proposed by Hu and Bentler (1999) and Hair et al., (2019), an acceptable model should have a CMIN/DF, which is less than 5. It will be excellent if it is between 1 and 3. In this case, it is slightly above three. The RMR and the Goodness of Fit Index (GFI) are presented in Table 4.16.

**Table 4. 16: RMR and GFI model results**

| Model | RMR | GFI | AGFI | PGFI |
|---|---|---|---|---|
| Default model | .072 | 0.915 | 0.876 | 0.627 |
| Saturated model | .000 | 1.000 | | |
| Independence model | 0.353 | 0.366 | 0.269 | 0.318 |

The GFI and AGFI are acceptable if the values are above 0.9 and excellent if the value is above 0.95. The GFI is 0.915, which is acceptable, and the RMR is 0.072. In this case, the standardised value of RMR − SRMR − will be used. The AGFI value is 0.876, which is slightly close to 0.9. The results of the incremental fit indices are shown in Table 4.17.

**Table 4. 17: Incremental fit index results for the SEM**

| Model | NFI | RFI | IFI | TLI | CFI |
|---|---|---|---|---|---|
| Default model | 0.904 | 0.879 | 0.931 | 0.912 | 0.931 |
| Saturated model | 1.000 | | 1.000 | | 1.000 |
| Independence model | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

As mentioned in the method, the incremental indices are between 0 and 1, and higher values of the incremental indices mean a better fit, with values of more than 0.9 being considered good and values above 0.95 signifying an excellent model. The values for NFI, IFI, TLI and CFI were 0.904, 0.931, 0.912 and 0.931 respectively. All fit indices are more than the cut-off point of .9, showing that the model is good. The RMSEA is presented in Table 4.18.

**Table 4. 18: RMSEA SEM model results**

| Model | RMSEA | LO 9O | HI 9O | PCLOSE |
|---|---|---|---|---|
| Default model | 0.079 | 0.068 | 0.090 | 0.000 |
| Independence model | 0.267 | 0.258 | 0.276 | 0.000 |

The RMSEA is one of the most widely used measures, and the question of how good it is debatable. According to Hair et al. (2019) earlier research uses a cut-off 0.05 and recent research uses the cut-off point of 0.08 (Hair et al., 2019). The authors further showed that the values between 0.03 and 0.08 are considered good, with a 95% confidence level. In this case, the value is 0.079, which is less than .08 and is considered good. The model fit measures are tabulated in Table 4.19.

**Table 4. 19: Model fit measures for the Structural Equation Model**

| Measure | Estimate | Threshold | Interpretation |
|---|---|---|---|
| CMIN | 236.737 | - | - |
| DF | 72.000 | - | - |
| CMIN/DF | 3.288 | Between 1 and 3 | Excellent |
| CFI | 0.931 | $> .95$ | Acceptable |
| SRMR | 0.068 | $< .08$ | Excellent |
| RMSEA | 0.079 | $< .06$ | Excellent |

The IBM SPSS AMOS output showed that the CFI was acceptable, while the other estimates were regarded as excellent. At least three measures have regarded the model as good, and the researcher will now consider the paths. The multiple regression weights for the SEM model are shown in Table 4.20.

**Table 4. 20: The multiple regression weights from the SEM model**

| Hypothesis | | Estimate | S. E | CR | P |
|---|---|---|---|---|---|
| H1 | ATTOPP←EC | 0.372 | 0.062 | 6.044 | *** |
| H2 | ATTOPP ←HC | 0.327 | 0.051 | 6.400 | *** |
| H3-H4 | SN ←ATTOPP | 0.664 | 0.092 | 7.216 | *** |
| H7 | WTP ←ATTOPP | 0.894 | 0.104 | 8.577 | *** |
| | Q16b ←EC | 1.000 | | | |
| | Q16d← EC | 1.163 | 0.103 | 11.320 | *** |
| | Q17c← HC | 1.000 | | | |
| | Q17b ← HC | 1.020 | 0.044 | 23.344 | *** |
| | Q17a←HC | 0.974 | 0.053 | 18.344 | *** |
| | Q10a←ATTOPP | 1.000 | | | |
| | Q10b← ATTOPP | 1.184 | 0.093 | 12.795 | *** |
| | Q10c← ATTOPP | 0.973 | 0.080 | 12.115 | *** |
| | Q14c←Communication | 1.008 | 0.101 | 10.019 | *** |
| | Q14b←Communication | 1.000 | | | |
| | Q11d←Communication | 1.000 | | | |
| | Q11b←Structural Assurance | 1.197 | 0.100 | 12.017 | *** |
| | Q11a←Structural Assurance | 0.898 | 0.082 | 10.904 | *** |
| | Q16c←Competence | 1.174 | 0.105 | 11.161 | *** |
| *** p<0.001 | | | | | |

For a path to be significant, the p-values should be less than 0.05. The critical ratios of all the paths are highly significant with p-values of less than 0.001 and critical ratios of more than 6. In this case, the hypothesis H0: β=0 is rejected for all the paths. A significant path showed that a construct was a predictor of another latent construct. A positive value of the coefficient ($\beta$) meant there was a positive impact. Table 4.21 shows the standardised estimates.

**Table 4. 21: The regression standardised estimates of the SEM model**

| Hypothesis | Structural relationship | Standardised Estimate parameter |
|---|---|---|
| H1 | ATTOPP←EC | 0.433 |
| H2 | ATTOPP ←HC | 0.398 |
| H3 - H4 | SN ←ATTOPP | 0.508 |
| H7 | WTP ←ATTOPP | 0.643 |
| | Q16b ←EC | 0.658 |
| | Q16d← EC | 0.791 |
| | Q17c← HC | 0.859 |
| | Q17b← HC | 0.952 |
| | Q17a←HC | 0.782 |
| | Q10a←ATTOPP | 0.725 |
| | Q10b← ATTOPP | 0.762 |
| | Q10c← ATTOPP | 0.713 |
| | Q14c←WTP | 0.800 |

| | | |
|---|---|---|
| | Q14b←WTP | 0.772 |
| | Q11d←SN | 0.717 |
| | Q11b←SN | 0.865 |
| | Q11a←SN | 0.644 |
| | Q16c←EC | 0.759 |

All the standardised estimates are positive, showing that the paths declared had all the coefficients showing positive influence. ATTFB, PBC, PQ and PI were taken from the model because their inclusion resulted in the model being a poor fit. Thus hypotheses 8, 5, 6 and could not be tested. The hypotheses tested are discussed below.

**H1: Environmental concern (EC) will positively influence attitude toward organic personal care products (ATT OPP)**

The impact of environmental concern (EC) on organic personal care products (ATT OPP) resulted in $\beta = 0.372$ with a p-value of less than 0.001. The results showed that the paths are statistically significant, resulting in the rejection of the null hypothesis of no relationship ($H0: \beta = 0$) and concluding that the parameter is significantly different from zero, thus there is a relationship. The results confirmed that environmental concern (EC) would positively influence attitude toward organic personal care products (ATT OPP). This means that for every increase in environmental concern, attitude toward organic personal care products will increase by 0.372. Environmental concern has a positive influence on attitude toward organic personal care products.

**H2: Health consciousness (HC) will positively influence attitude toward organic personal products (ATT OPP)**

Health consciousness had a positive relationship with attitude toward organic personal care products (ATT OPP). The beta value was $\beta = 0.327$ , and the p-value is less than 0.001. It can be concluded that health consciousness (HC) had a positive influence attitude toward organic personal products (ATT OPP) at the 5% level of significance. Thus, high values in health concern will influence positive attitude toward organic personal care products. For every increase in health consciousness, attitude toward organic personal care products will increase by 0.327. Health consciousness has a positive influence on attitude toward organic personal care products.

**H3: Millennial consumers' attitudes towards organic personal care products (ATT OPP) influence purchase intentions (PI)**

PI was not part of the model, and hence a relationship could not be determined since the inclusion of PI made the model a poor fit.

**H4: Millennial consumers' subjective norms (SN) will have a positive influence on their intentions (PI) to buy organic personal care products**

Inclusion of PI made the model a poor fit. However, a direct relationship between attitude toward organic personal care products (ATT OPP) and subjective norms (SN) was established.

**Additional hypothesis: Millennial consumers' attitudes towards organic personal care products (ATT OPP) influence subjective norms (SN)**

The results showed that millennial consumers' attitudes towards organic personal care products (ATT OPP) had a significant positive effect on subjective norms ($= 0.664, p < 0.001$). Since the p-value is less than 0.05, the null hypothesis of no relationship is rejected at the 5% level of significance, and thus there is a positive impact. For every increase of 1 unit in attitude toward organic personal care products, subjective norms increase by 0.664.

**H5: The greater the perceived behavioural control (PBC) is, the stronger the positive relationship between attitude (ATT OPP) and intention to buy (PI) organic personal care products**

PBC was not part of the model, and hence a relationship could not be determined since the inclusion of PBC made the model a poor fit.

**H6: Perceived quality (PQ) will have a positive effect on purchase intention (PI) for organic personal care products**

PQ was not part of the model, and hence a relationship could not be determined since the inclusion of PQ made the model a poor fit.

**H7: Positive attitude towards organic personal care products (ATT OPP) significantly influences the willingness to pay more (WTP).**

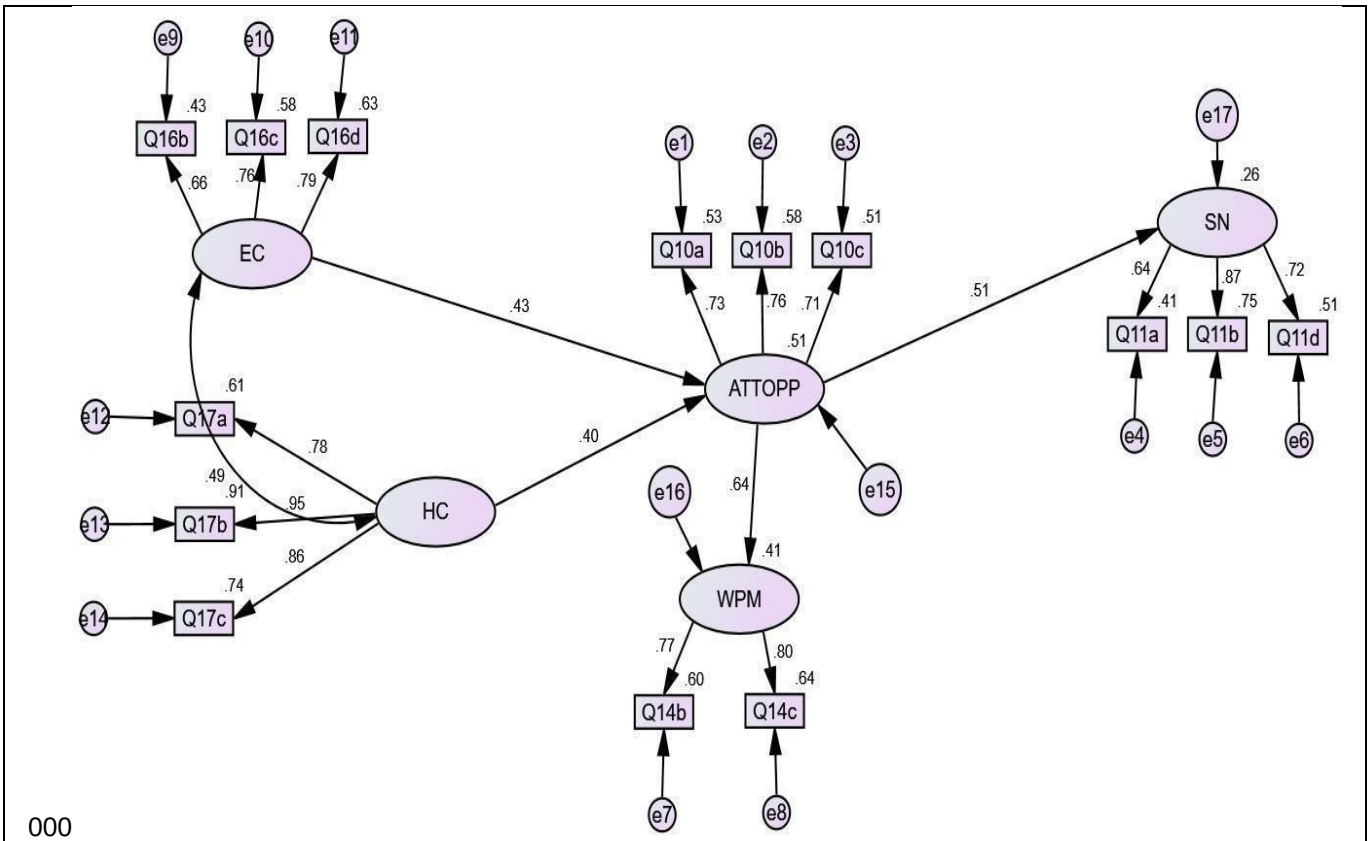
Attitude towards organic personal care products (ATT OPP) was seen to be positively associated with willingness to pay more (WTP) ($= 0.894, p < 0.01$). For every increase of 1 unit in attitude towards organic personal care products (ATT OPP), willingness to pay more (WTP) increases by 0.894.

**H8: A positive attitude towards Facebook (ATT FB) will have an influence on organic product purchase intentions (ATT OPP)**

ATT FB was not part of the model, and hence a relationship could not be determined since the inclusion of ATT FB made the model a poor fit.

### 4.10.6 Summary of Results of Hypotheses Testing and Confirmed Relationships

Looking at the paths discussed above, the following structural model in Figure 4.11 was obtained.




X2= 236.737, df = 72; p-value < 0.001, Cnmin/df=3.288, CFI =0.931; GFI=0.915; NFI, =0.904, IFI=0.931; TLI=0.912, RMSEA =0.079

**Figure 4. 11: The SEM results of regression weight, probability values and hypotheses result.**

**Table 4. 22: Unstandardised regression weights and the corresponding probability values**

| Construct | Path | Construct | Unstandardised Path coefficients (β) | Standard Error of Regression Weight | Probability | Hypothesis Result |
|---|---|---|---|---|---|---|
| ATTOPP | <--- | EC | 0.372 | 0.062 | $p < 0.001$ | Reject null hypothesis at α = 0.05 |
| ATTOPP | <--- | HC | 0.327 | 0.051 | $p < 0.001$ | Reject null hypothesis at α = 0.05 |
| SN | <--- | ATTOPP | 0.664 | 0.092 | $p < 0.001$ | Reject null hypothesis at α = 0.05 |
| WTP | <--- | ATTOPP | 0.894 | 0.104 | $p < 0.001$ | Reject null hypothesis at α = 0.05 |

All the tested hypotheses were significant, and there was a positive relationship between the constructs. The summarised results of the hypothesis testing are shown in Table 4.22.

**Table 4. 23: The result of the hypothesis testing**

| Hypothesis | Result |
|---|---|
| H1: Environmental concern (EC) will positively influence attitude toward organic personal care products (ATT OPP) | Supported |
| H2: Health consciousness (HC) will positively influence attitude toward organic personal products (ATT OPP) | Supported |
| H3-H4: Millennial consumers' attitudes towards organic personal care products (ATT OPP) influence purchase intentions (PI); Millennial consumers' subjective norms (SN) will have a positive influence on their intentions (PI) to buy organic personal care products | Supported by a direct relationship of ATTOPP to SN |
| H5: The greater the perceived behavioural control (PBC) is, the stronger the positive relationship between attitude (ATT OPP) and intention to buy (PI) organic personal care products | Not tested was dropped from the model |
| H6: Perceived quality (PQ) will have a positive effect on purchase intention (PI) for organic personal care products | Not tested was dropped from the model |
| H7: Positive attitude towards organic personal care products (ATT OPP) significantly influences willingness to pay more (WTP) | Supported |
| H8: A positive attitude towards Facebook (ATT FB) will have an influence on organic product purchase intentions (ATT OPP) | Not tested was dropped from the model |

Looking at Table 4.23, the research hypotheses that were not tested were H5, H6 and H8. The findings support the hypotheses H1 and H2, in which H1 hypothesise that environmental concern affects the attitude to organic personal care products positively, and H2 hypothesise that health consciousness affects the attitude to organic personal care products positively. This finding is consistent with earlier studies suggesting that health and environmental awareness are the two commonly identified factors that determine positive attitude towards buying organic products (Kim & Chung, 2011; Cervellon & Carey, 2011, Matci & Puh, 2016). H3 and H4 were partially tested by a direct relationship between attitude towards organic personal care products and subjective norms. This result is in line with earlier findings of studies conducted in an organic product context (Hsu et al.,2016; Wang et al., 2019). Lastly, the findings confirmed H7 that positive

attitude towards organic personal care products impacts millennial consumers' willingness to pay more for organic personal care products. The findings are consistent with current literature (Anvar & Venter, 2014; Maichum et al., 2016; Mamun et al., 2018), which confirms that the strength of attitudes of individuals about green buying behaviour determines their willingness to pay for organic products. The final model established is shown in Figure 4.12 below.

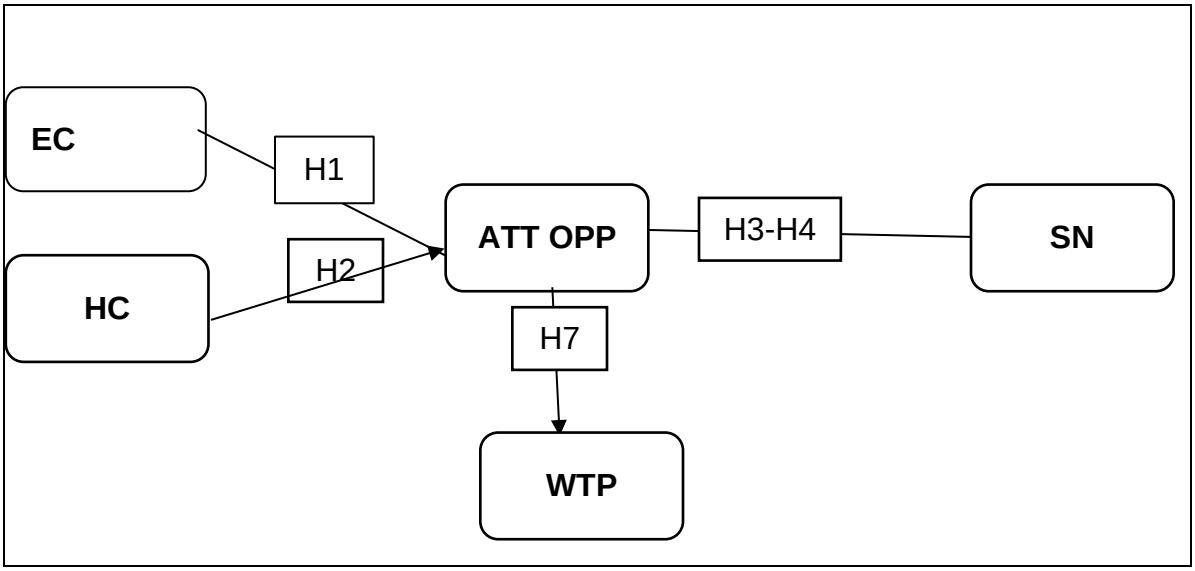



**Figure 4. 12: The final model for the SEM results**

The final model resulted in paths which were highly significant, with critical ratios greater than 6 and p-values less than 0.001.

## 4.11 Conclusion

The purpose of this chapter was to present empirical findings. The chapter started with the definition of the respondents' demographic profile, and descriptive statistics of the individual variables were addressed with their corresponding mean and standard deviation values. The test for the reliability included the Cronbach alpha, the composite reliability, and the average variance extracted. The validity was assessed through convergent and discriminant validity. The model fit was then assessed for confirmation through the application of thresholds and indices to conclude that the collected data fit

the model. Thereafter, structural equation modelling was used to assess the hypothesised model developed in Chapter 3.

Results from the model showed that environmental concern, health consciousness, attitude, and social norms are significant positive predictors of millennials' willingness to pay more for organic personal care products. Attitude towards Facebook and organic products perceived behavioural control, quality perception and purchase intentions were not tested because their inclusion resulted in a poor fit. In addition, the model showed a significant positive relationship between attitude towards organic products and subjective norms emerged. Similarly, there was an observed positive significant relationship between attitude and willingness to pay more for organic personal care products.

# CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

## 5.1 Introduction

This chapter provides a summary of the research, draws some conclusions, and offers recommendations based on the findings stated in the previous chapter. The chapter then discusses whether the aims were accomplished. After that, the proposed model of factors influencing South African millennial consumer attitudes towards personal organic products is discussed. The chapter then ends with a discussion of the study limitations and recommendations for future research and conclusion.

## 5.2 Overview of the study

Chapter 1 introduced the subject, providing the research context. This chapter presented the problem statement, where study objectives were outlined. The chapter briefly described the analysis process and ended with a rationale for the current study. Chapter 2 offered a thorough understanding of the key issues in this study. Additionally, the chapter included a theoretical grounding for the study, proposed the conceptual model and formulated a set of critical hypotheses for further empirical examination. Chapter 3 provided a detailed discussion of methodology. The chapter focused on research design, population sampling, data collection and data analysis. In chapter 4, the statistical analysis and conclusions from the data collected were discussed. The findings were explored with a view to identifying similarities and differences between this study and previous studies and literature. Chapter 4 addresses the key results and consequences of the findings. Finally, the study's contribution is provided and concluded with recommendations for future research.

### 5.2.1 Primary objective

The primary aim of this study was to determine the factors that influence millennial consumers' attitudes towards organic products in South Africa.

### 5.2.2 Theoretical objectives

To address the primary aim of the study, the theoretical objectives are to review the literature on:

- Review the literature on the Theory of Planned Behaviour (TPB)
- Review the literature on factors influencing organic products purchase intentions
- Review the literature on green marketing
- Review the literature on organic products
- Review the literature on social media and its impact on consumer behaviour
- Review the literature on social media networks, with a focus on Facebook
- Review the literature on the millennial cohort

### 5.2.3 Empirical objectives

- To identify the motivating factors that influence the purchase of organic products.
- To evaluate the subjective norms of organic products.
- To study the relationship between environmental concern and attitude towards organic products.
- To study the relationship between health consciousness and attitude towards organic products.
- To determine the impact of millennials' attitude towards Facebook on attitude towards organic products.
- To determine the impact of perceived quality (PQ) on purchase intention (PI) of organic personal care products.
- To assess consumers' willingness to pay more (WTP) for organic products,
- To determine the impact of attitude towards organic products and social norms.

## 5.3 Main findings of the study

Consistent with the literature, several factors were found to influence the attitudes of South African millennial consumers towards organic personal care products. Exploratory factor analysis was performed, and six factors were extracted, namely:

- attitude commitment to organic products and Facebook (ATT FB)
- attitude towards organic personal care products (ATTOPP)
- environmental concern (EC)
- health consciousness (HC)
- willingness to pay (WTP)
- subjective norms (SN)

These six factors explained that 61.7% of the total variance in millennial consumers' attitudes towards organic products. All the standardised estimates were positive, showing that the paths declared had all the coefficients showing positive influence. ATTFB, PBC, PQ and PI were a poor model fit and therefore excluded from the measurement model. Based on the factors extracted from the exploratory factor analysis, correlation analysis was performed to guide the Structural Equation Modelling where measurement and structural models were developed to find the causal relationships among the constructs. There was a significant correlation among the pairs of constructs.

Structural Equation Modelling (SEM) was used to empirically test the factors that influence South African millennial consumers' attitudes towards organic personal care products. Confirmatory factor analysis was performed, and fit indices were computed to assess a measurement model. A structural model was then employed to evaluate causal relationships between constructs. The measurement model consisted of five latent variables, namely:

- environmental concern
- health consciousness
- attitude
- willingness to pay
- subjective norms

After computing fit indices, it was seen that the measurement model showed acceptable levels of fit. The structural model was then tested based on the measurement model.

The results showed that South Africa millennials' environmental concern (EC) and health consciousness (HC) had a significantly positive influence on their attitudes towards organic products. Thus, these variables are the major antecedents for attitude towards organic personal care products. This study supports previous findings that environmental concern and health consciousness influence attitude towards organic products (Chen, 2009; Cheung, Lau & Lam, 2015; Wang et al., 2019; Nguyen, Nguyen, Nguyen, Lobo & Vu, 2019) and in an organic skincare context (Kim & Chung, 2011; Cervellon& Cary, 2011, Matci & Puh, 2016). Also, the results revealed that millennial consumers' attitudes towards organic personal care products had a significant positive effect on subjective norms, and are in line with earlier findings of studies conducted in an organic product context (Hsu et al., 2016). Results further indicated that attitude was the strongest significant predictor of willingness to pay for organic personal care products and in line with the TPB (Ajzen, 1991) and the current literature (Anvar & Venter, 2014; Maichum et al.,2016; Mamun et al., 2018), which indicates that the degree of individuals' attitudes to the performance of green purchase behaviour determines their willingness to pay for organic products. The findings of this study suggest that South Africa millennial consumers' attitude towards organic personal care products may be explained following the model presented in Figure 5.1.

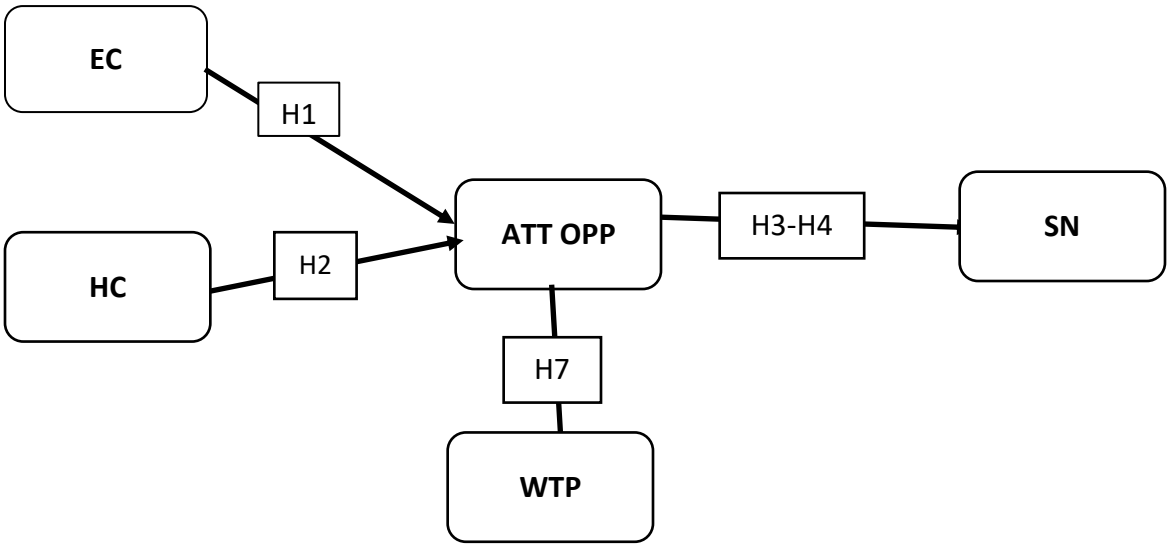



**Figure 5. 1: The final model for the SEM results**

## 5.4 Recommendations

Based on the research findings, some recommendations are suggested to help marketers develop strategies to influence consumers' willingness to pay for organic personal care products.

### 5.4.1 Recommendations based on health consciousness and attitude towards organic personal care products

The study shows firmly the key role of health consciousness, which directly influences customer attitude towards organic personal care products. The findings signal that consumers are motivated to improve or maintain their health and quality of life because of their awareness and concern about their well-being (Cervellon & Carey, 2011). To strengthen a positive attitude towards organic personal care products, marketers should emphasise product safety and health benefits in their marketing campaigns.

### 5.4.2 Recommendations based on environmental concern and attitude towards organic personal care products

The findings showed that millennials' concern for the environment has a positive influence on their attitude towards organic personal care products. Creating a positive attitude toward buying organic personal care products may be an essential factor for retailers to increase consumers' willingness to pay more for the products. Furthermore, consumers who are knowledgeable about organic products believe that buying organic products benefits the environment due to sustainable consumption. Environmental awareness therefore affects consumer assessments of the environmental benefits and their preference for green products, which positively affects the willingness to pay more for organic products (Paul et al., 2016). Retailers should, therefore, provide product and environmental information to improve customer awareness, thereby increasing consumer attitude and consequently increasing their willingness to pay more for organic personal care products.

### 5.4.3 Recommendations based on subjective norms and attitude towards organic personal care products

The study reveals that positive attitudes towards subjective norms affect willingness to pay more for organic personal care products. According to Ajzen (1991), the more agreeable the attitude concerning behaviour, the stronger the individual's intention is to perform the behaviour under consideration. Earlier research on the TPB demonstrated that both attitudes and subjective norms are useful for predicting individuals' behaviours (Tarkiainen & Sundqvist, 2005; Sanne & Wiese, 2018). In addition, Vermeir and Verbeke (2008) argue that social norms or public opinion, followed by automated and social processors, are difficult to predict and adjust, especially in the short-term. Consequently, harnessing the power of social influence is one of the most powerful ways to generate pro-environmental behaviours in consumption (White, Habib, & Hardisty, 2019). Therefore, highly engaged consumers will help policy makers influence their own intent. Sanne and Wiese (2018) also note marketers have trouble explicitly influencing and modifying subjective norms. Since attitudes are related to social norms, a positive attitude

towards organic products is a good starting point for encouraging ecologically aware and health-conscious consumers to accept organic products.

### 5.4.4 Recommendation: Targeting millennials on social media

The research outcome also showed that millennials often access Facebook. This is consistent with a study by Duffet (2015) that confirmed millennials' considerable use of Facebook in South Africa. It is vital for marketers and organisations who want to reach this cohort of consumers to embrace new online communication channels like Facebook. Indeed, over the years, Facebook has created opportunities for the business community to target consumers. Therefore, marketers interested in targeting the millennial cohort should consider Facebook a vital advertising channel for organic personal care products. This finding is in line with the findings of this study, which confirmed that millennials perceived Facebook advertisements as credible (Duffet, 2015; Dondolo, 2014). Furthermore, Kim, Lee, and Yoon (2011) suggest that Facebook features that show an individual's perceptions or views on media messages can provide many opportunities for eWOM generation and viral marketing. Therefore, by increasing engagement with specific Facebook advertisements, marketers could influence "significant others" or friends and family to influence and change subjective norms towards organic personal care products.

### 5.4.5 Recommendations based on attitude and willingness to pay more for organic personal care products

The study also reveals that health consciousness and positive attitudes towards the environment have a direct impact on millennials' willingness to pay more for organic personal care products. According to Mamun et al. (2018), the more positive consumer attitude towards organic products is, the higher the consumer's willingness to pay for organic products. This suggests that consumers' attitude towards organic personal care can be enhanced by creating green values and sustainability awareness, which in turn may create a positive image of organic personal care products among millennial consumers.

Furthermore, the findings highlight the importance of creating a value proposition for organic personal care products explicitly tailored at millennials. Chen and Chang (2012) state that clear communication of green values and the benefits of green products serves as an effective marketing strategy. A green value proposition can also increase the perceived value of organic products and enhance trust among consumers, which may further influence the consumers' green purchasing intention and the willingness to pay more for organic products (Yadav & Pathak, 2016).

## 5.5 Contributions of the study

The contribution of this study was structured into three categories: the theoretical contribution, the managerial contribution, and the contribution to policy.

### 5.5.1 Theoretical contribution

This study contributed to the limited research into behavioural theories and green marketing. It adds to current literature on factors of green purchase behaviour among millennial consumers in South Africa. This study is one of the few studies trying to investigate South African millennials' motives for consuming organic personal products, thereby contributing to a broader recognition of the significance of studying the behaviour of this consumer cohort. This study contributes towards the TPB through the integration of subcomponents: environmental concern and health consciousness as antecedents of attitude. In addition, this study extends the TPB and widens its scope by investigating millennial consumers' willingness to pay more for organic personal care products.

### 5.5.2 Managerial contribution

This study provides marketers with practical insights to better understand how they can influence millennials' attitudes towards organic personal care products. The findings of this study could be applied to identify other antecedents of attitudes towards the willingness of consumers to pay more for organic personal care products, which could greatly assist in developing viable strategies and gaining market share for environmentally sustainable products. Additionally, retailers may use the results of this

study to establish policies and strategies to produce products, understand customer needs, and eventually retain consumers.

### 5.5.3 Policy contribution

Influence on green consumption requires effective public behaviour change and diverse strategies, including policy initiatives (Mamun et al., 2018). According to White et al. (2019), people like to be consistent, so if they follow a sustainable mindset, they are often apt to make more positive changes in the future. Policymakers need to focus on programmes that encourage the public to create desirable, sustainable habits that can spill into other sustainable choices. Furthermore, The OECD (2012) recommend that policymakers should set regulatory conditions that stimulate economic innovation and respond effectively to environmental demands by businesses. These include setting performance standards, industry codes, eco-labels, and certificates.

Scepticism among consumers about manufacturers' environmental claims remains one of the obstacles to adopting organic products (Ottman, 2011). Therefore, product labelling and packaging are the fundamental areas needing substantive policy guidance to create consumer confidence in buying and using organic products (Sharma & Bansal, 2013). An EU (2012) report argued that changes in consumption and production are important to ensure sustainable consumption patterns for organic products. A recommended action for policymakers is the launch of targeted awareness-raising and information campaigns, and education programmes on the life cycle environmental impacts of various organic personal care products.

## 5.6 Limitations and Future Research Opportunities

Apart from its many contributions, this study has some limitations that can be addressed in future research. Due to the non-probability sample technique utilised in this study, the generalisability of these results is limited. Although the attempt was to capture a representative sample of the population, the demographics of the sample showed that most respondents who identified as female comprised 92% and those living in urban areas 88.9%**.** Future research should explore demographic variables comparing gender

differences between male and female millennial attitudes towards organic products. Furthermore, this study focused on one generational cohort and did not provide insights into other generational cohorts, such as Generation Z or the ‘Post-Millennial’ generation – those born between 1997 - 2012.

The use of the online questionnaire to collect data has limitations on the representativeness of the sample (Couper, 2011), so does the risk of including multiple responses by the same subject (Konstan, Rosser, Ross, Stanton, & Edwards, 2005). In addition, the study used Facebook to collect data. As a result, Facebook, friends, and friends of friends may result in a sample that is skewed and not sufficiently representative.

Furthermore, Ajzen (1991) proposed that the TPB is subject to additional predictors (Ajzen, 1991) and Cervellon and Carey (2011) suggest that there is a lack of consumer information regarding organic products. Therefore, future research could examine other external variables, such as consumer knowledge and eco-labelling, to examine the effects on the TPB variables. Also, not all the findings from the SEM model confirm the TPB. A question that arises from this study is whether a meaningful relationship exists between millennial consumers' perceived behavioural control (PBC) and organic personal care products purchase intention. Responding to this question is of relevance to the green marketing field since PBC is considered a good predictor of an individual's intention to buy organic products (Kim & Chung, 2011; Paul et al.,2016). Finally, based on this preliminary investigation, future research should continue to examine Facebook as a tool to communicate organic product marketing to further our understanding of this growing communication and advertising platform, and thereby aid in the development of relevant marketing and advertising strategies.

## 5.7 Conclusion

This chapter provided an overview of the study and summarised the study objectives. It addressed the main research findings and presented recommendations based on the study findings. The chapter then concluded with limitations and recommendations for future research. Consumer interest in health and environmental issues is growing, presenting the organic personal care industry with an immense opportunity to create marketing strategies that could inspire more customers to buy organic or natural personal care products. As a result, consumers' positive attitudes are influencing their willingness to pay more for organic personal care products. Furthermore, the millennial cohort is acknowledged to fuel the trend towards green consumerism. Earlier research reported discrepant results about the effect of motives on attitude and purchase intention towards organic products. Studies have reported both significant and insignificant relationships (Tarkiainen & Sundqvist, 2011; Kim & Chung, 2011), highlighting that our understanding of the role of motives (i.e. health consciousness) in supporting the consumption of organic products is still inconclusive. The research findings show that health concern and environmental concern are the most important predictors of attitude towards organic personal care products. Also, attitude leads to social influence (subjective norms). Finally, consumers' positive attitudes have an impact on their willingness to pay more for organic products. These findings are consistent with prior research. The study has proposed a model of the factors that influence South African millennial consumers' attitude and their willingness to pay more for organic personal care products.

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## APPENDIX A

# ONLINE QUESTIONNAIRE

### Consumer attitudes towards organic products in South Africa

Dear Respondent,

My name is Mongezi Lupindo, a master's student at the School of Management Studies, Faculty of Commerce at the University of Cape Town. I am conducting research on the factors that influence consumers' attitudes towards organic personal care products in South Africa. I invite you to participate in this study. Your participation in this study is voluntary and you are free to withdraw from the study anytime. Your responses will be treated in the strictest confidence, will remain confidential and will be invaluable to completing this study. Research data may be presented in a conference paper or published as articles in accredited journals. Your identity will not be revealed in any publication resulting from this study. Data will be stored by the researcher for a period of one year on a secure University of Cape Town network drive. After that time, it will be permanently destroyed from the network drive using a relevant software programme. Future use of the stored data will be subject to further Research Ethics review and approval if applicable.

The Ethics in Research Committee at the University of Cape Town, Faculty of Commerce, has approved and granted permission to proceed with the study. You will not be requested to supply any identifiable or sensitive information in this research. The questionnaire will take 10 minutes to complete. By completing this questionnaire, you implicitly give consent to take part in the study. Should you have any questions regarding the research, please feel free to contact Mongezi Lupindo on +27 73 166 7293 or mongezilupindo@gmail.com

SECTION A

This section seeks some background information about you. It is necessary to obtain this information, as this will have a significance on the results of the survey. Please indicate your answer by crossing (x) in the appropriate block.

**Q1. What is your gender?**

- ○ Male (1)
- ○ Female (2)
- ○ Other (3) _____

**Q2. What is your age?**

- ☐ Under 18 years old (1)
- ☐ 18 - 21 years old (2)
- ☐ 22 -25 years old (3)
- ☐ 26 -30 years old (4)
- ☐ 31 -34 years old (5)
- ☐ 35 years or older (6)

**Q3. Where do you live?**

- ○ Urban (1)
- ○ Rural (2)

**Q4. Please indicate your ethnicity**

- ○ African (1)
- ○ White (2)
- ○ Indian (3)
- ○ Coloured (4)
- ○ Other (5) _____
- ○ Prefer not to answer (6)

**Q5. Please specify your highest level of education**

- ☐ High school (1)
- ☐ Some tertiary (2)
- ☐ Bachelor's degree (3)
- ☐ Postgraduate (4)

**Q6. Experience using Facebook**

- ○ Under 3 months (1)
- ○ 3 - 6 months (2)
- ○ 6 months - 1 year (3)
- ○ 1 - 2 years (4)

**Q7. Time spent on Facebook each time**

- ○ Under 1 hour (1)
- ○ 1-3 hour (2)
- ○ Over 3 hours (3)

**Q8. Time spent on Facebook per week**

- ○ Under 10 hours (1)
- ○ 11 - 20 hours (2)
- ○ Over 21 hours (3)

Defining Organic Personal Care Products: these are made with ingredients with the minimum use of chemicals, pesticides, and fertilisers. They include skincare (body lotion, cleanser, and face moisturiser) and hair care (shampoo and conditioner).

SECTION B: **LEVELS of ATTITUDE COMMITMENT AND FACEBOOK**

**Q9. In this section, you are requested to select only ONE choice that represents your viewpoint regarding organic products and Facebook. Indicate your level of agreement with the following statements.**

| | Strongly disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly agree (5) |
|---|---|---|---|---|---|
| I only follow sustainable companies on Facebook because they fill my news feed with Environment ally friendly products news (Q9_a) | ○ | ○ | ○ | ○ | ○ |
| Facebook represents my friends and our values for environment ally friendly products (Q9_b) | ○ | ○ | ○ | ○ | ○ |

| | | | | | |
|---|---|---|---|---|---|
| I would be more likely to visit Facebook if I knew it contained interesting postings on organic products (Q9_c) | ○ | ○ | ○ | ○ | ○ |
| When I participate in discussions on Facebook, I imagine myself influencing sustainability in the future (Q9_d) | ○ | ○ | ○ | ○ | ○ |
| Viewing organic products and adverts on Facebook is more enjoyable than off Facebook (Q9_5) | ○ | ○ | ○ | ○ | ○ |

| | | | | | |
|---|---|---|---|---|---|
| Facebook is a good place to follow my favourite organic product brands (Q9_6) | ○ | ○ | ○ | ○ | ○ |

SECTION C: FACTORS INFLUENCING PURCHASE INTENTIONS OF PERSONAL CARE PRODUCTS

Please select the option that represents your opinion. When answering the next questions, please picture yourself looking at buying an organic personal care product in a store that offers a choice of various options

**Q10. Attitude towards organic personal care products**

| | *Strongly disagree (1)* | *Disagree (2)* | *Neither agree nor disagree (3)* | *Agree (4)* | *Strongly agree (5)* |
|---|---|---|---|---|---|
| *I think that Environmental protection is important when making a purchase decision (Q10_a)* | ○ | ○ | ○ | ○ | ○ |
| *I prefer to buy organic skin care products to non-organic products (Q10_b)* | ○ | ○ | ○ | ○ | ○ |
| *I think that purchasing organic personal care products is safe (Q10_c)* | ○ | ○ | ○ | ○ | ○ |

**Q11. Subjective norms**

| | *Strongly disagree (1)* | *Disagree (2)* | *Neither agree nor disagree (3)* | *Agree (4)* | *Strongly agree (5)* |
|---|---|---|---|---|---|
| *My family thinks that I should practice environmentally friendly behaviour (Q11a)* | ○ | ○ | ○ | ○ | ○ |
| *My friends think that I should practice environmentally friendly behaviour (Q11b)* | ○ | ○ | ○ | ○ | ○ |
| *My family thinks that I should buy organic personal care products rather than normal products (Q11c)* | ○ | ○ | ○ | ○ | ○ |
| *My friends think that I should buy organic personal care products rather than normal products (Q11d)* | ○ | ○ | ○ | ○ | ○ |

**Q12. Perceived behavioural control**

| | Strongly disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly agree (5) |
|---|---|---|---|---|---|
| I am confident that I can purchase organic personal care products rather than normal products when I want (Q12a) | ○ | ○ | ○ | ○ | ○ |
| I see myself as capable of purchasing organic personal care products in the future (Q12b) | ○ | ○ | ○ | ○ | ○ |
| I have money, time, and willingness to purchase organic personal care products (Q12c) | ○ | ○ | ○ | ○ | ○ |

**Q13. Purchase intentions**

| | Strongly disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly agree (5) |
|---|---|---|---|---|---|
| I intend to purchase organic personal care products next time because of their positive environmental contribution (Q13a) | ○ | ○ | ○ | ○ | ○ |
| I find that organic personal care products are better than no organic alternatives (Q13b) | ○ | ○ | ○ | ○ | ○ |
| I would consider switching to organic personal care brands for environmental reasons (Q13c) | ○ | ○ | ○ | ○ | ○ |

**Q14 Willingness to pay for organic personal care products**

| | Strongly disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly agree (5) |
|---|---|---|---|---|---|
| I intend to pay more for organic personal products (Q14a) | ○ | ○ | ○ | ○ | ○ |
| Organic personal care products offer value for money (Q14b) | ○ | ○ | ○ | ○ | ○ |
| Organic personal care products are good products for the price (Q14c) | ○ | ○ | ○ | ○ | ○ |
| I would pay extra for organic personal products even if the performance were same as on-organic products (Q14d) | ○ | ○ | ○ | ○ | ○ |

**Q15. Perceived quality**

| | Strongly disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly agree (5) |
|---|---|---|---|---|---|
| Organic personal care products have consistent quality (Q15a) | ○ | ○ | ○ | ○ | ○ |
| Organic personal care products have an acceptable standard of quality (Q15b) | ○ | ○ | ○ | ○ | ○ |

**Q16. Environment concern**

| | Strongly disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly agree (5) |
|---|---|---|---|---|---|
| When I think of the ways companies are polluting the environment, I get frustrated and angry. (Q16a) | ○ | ○ | ○ | ○ | ○ |
| I don't buy products that cause potential damage to the environment (Q16b) | ○ | ○ | ○ | ○ | ○ |
| I have convinced my peers to stop using environmentally harmful products (Q16c) | ○ | ○ | ○ | ○ | ○ |
| Being exposed to two alternatives, I buy the one which is less harmful to the environment (Q16d) | ○ | ○ | ○ | ○ | ○ |

**Q17. Health consciousness**

| | Strongly disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly agree (5) |
|---|---|---|---|---|---|
| I think about my health a lot (Q17a) | ○ | ○ | ○ | ○ | ○ |
| I'm alert to changes in my health (Q17b) | ○ | ○ | ○ | ○ | ○ |
| I'm usually aware of my health (Q17c) | ○ | ○ | ○ | ○ | ○ |

Email address (will not be used to spam or identify you)

_____

Strictly confidential
Thank you for your participation

## APPENDIX B

**Faculty of Commerce**
**Private Bag X3, Rondebosch, 7701**
2.26 Leslie Commerce Building, Upper Campus
Tel: +27 (0) 21 650 4375/ 5748 Fax: +27 (0) 21 650 4369
E-mail: com-faculty@uct.ac.za
Internet: www.uct.ac.za
@Commerce_UCT UCT Commerce Faculty Office

29/08/2018

Mr Mongezi Lupindo
School of Management Stuidies
University of Cape Town

REF: REC 2018/008/083

Dear Mongezi Lupindo,

**The Impact of Social Media on Millennials' Purchase Intentions of Organic Products in South Africa: An Application of the Theory of Planned Behaviour.**

We are pleased to inform you that your ethics application has been approved. We are pleased to inform you that your ethics application has been approved.
Unless otherwise specified this ethical clearance is valid for 1 year and may be renewed upon application.

Please be aware that you need to notify the Ethics Committee immediately should any aspect of your study regarding the engagement with participants as approved in this application, change. This may include aspects such as changes to the research design, questionnaires or choice of participants.

The ongoing ethical conduct throughout the duration of the study remains the responsibility of the principal investigator.

We wish you well for your research.

Modie Sempu
Administrative Assistant
University of Cape Town
Commerce Faculty Office
Room 2.26 | Leslie Commerce Building

Office Telephone: +27 (0)21 650 4375
Office Fax: +27 (0)21 650 4369
E-mail: modie.sempu@uct.ac.za
Website: www.commerce.uct.ac.za<http://www.commerce.uct.ac.za/>

## APPENDIX C

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### Letter from the Language Editor

Caroline Bull Content writing, editing and
photography 079 492 8507
carjo82@hotmail.com 14 May 2020

To whom it may concern

This is to confirm that I, the undersigned, have language edited the article of **Mongezi Lupindo (LPNMON003)** entitled:

**Millennials' Attitudes Towards Organic Personal Care Products in South Africa: An Application of the Theory of Planned Behaviour**

The responsibility of implementing the recommended language changes rests with the author(s) of the article.

Yours truly,
Caroline Bull

Signature Removed