University of KwaZulu-Natal

The perception and attitude of Generation Z consumers on e-cigarette marketing: A University of KwaZulu-Natal perspective

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DECLARATION

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ABSTRACT

E-cigarette awareness over the past few years, has experienced a notable increase especially among the youth. E-cigarettes have been promoted heavily on the internet and on social media websites which reach millions of young people (Payne, Orellana-Barrios, Medrano-Juarez, Buscemi and Nugent, 2016). E-cigarette marketers also use eye-catching, colourful and innovative packaging to attract the youth. Therefore, this study aims to quantitatively examine the perception and attitude of Generation Z consumers on e-cigarette marketing.

The study focuses on the perception and attitude of Generation Z (UKZN) students on e-cigarette marketing. In particular the perception and attitude of students towards e-cigarette use, smoking cessation, health risks/benefits, packaging as a marketing tool and regulation of e-cigarettes will be examined.

A sample of 375 students from the University of KwaZulu-Natal (UKZN) Westville campus was drawn using a non-probability convenience sampling technique to generate the results. Participants completed the online questionnaire compromising of four sections. Section A was based on the biographical information of participants. Sections B, C and D were related to questions pertaining to the sub-dimensions of the study. The validity and reliability of the questionnaire were assessed using factor analysis and Cronbach's Coefficient Alpha respectively. Descriptive and inferential statistics were employed to initiate the results of the study.

The empirical results of this study indicate that there is a significant positive relationship between the marketing influence of e-cigarettes and the influence of packaging regulation in South Africa respectively, at a 1% level of significance. There is a significant difference in the perceptions of students, varying in biographical profiles (gender, age, race, study programme and level of study) regarding each dimension of the study. Recommendations from the results of the study provide insight to policymakers and provide them with the power to counter these marketing strategies appropriately.

Keywords: e-cigarettes, e-cigarette marketing, packaging, regulation, perceptions.

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CHAPTER 1: Introduction and overview of the study

1.1 Introduction

Globally, tobacco consumption is the highest most preventable cause of morbidity and mortality. The tobacco epidemic is one of the immense public health threats worldwide. Globally, tobacco use is linked with more than eight million deaths each year (WHO, 2015). The use of e-cigarettes, which are defined by Pisinger and Dossing (2014, p.249) as "battery-enabled devices that allow users to inhale nicotine in vaporised form" has in some cases become an alternative to smoking cigarettes. Pisinger and Dossing further stated that the consumption of e-cigarette vapour is referred to as 'vaping' and e-cigarette users are commonly referred to as 'vapers'. E-cigarettes comprise of a cartridge that contains a liquid mixture that generally comprises of flavourings, distilled water, nicotine and propylene glycol. E-cigarettes do not contain tobacco; however, numerous e-cigarette products are owned, manufactured and promoted by the tobacco industry. The e-cigarette market mainly targets users of traditional cigarettes who intend to quit and those who want a less harmful substitute to tobacco cigarettes (Muposhi and Dhurup, 2018). Globally, there has been a significant market penetration of e-cigarettes despite the fact that their long-term health risks are not known (Grana, Benowitz and Glantz, 2014).

In March 2020, the World Health Organization (WHO) announced the outbreak of the coronavirus disease (Covid-19), as a global pandemic. The WHO (2020) defined Covid-19 "as an infectious disease that attacks the human respiratory system and can cause mild to severe illness and death". The relationship between the spread of Covid-19 and vaping has gained a considerable amount of attention, especially of teenagers and young adults (Patanavanich and Glantz, 2020). Although there has been little research on e-cigarettes and the impact of their use on Covid-19, studies that have been conducted suggest that e-cigarette use is a risk component for the advancement of Covid-19 (Gaiha, Cheng and Halpern-Felsher, 2020; Kale, Herbec, Perski, Jackson, Brown and Shahab 2021; Patanavanich and Glantz, 2020).

Several e-cigarette companies have utilised the pandemic to promote their products, a few marketing e-cigarettes as 'the safer alternative' (WHO, 2021). There is no legislation in

South Africa which specifically regulates the marketing, sale and utilisation of e-cigarettes. This gave rise to concerns over the significant use of e-cigarettes by young adults who are frequently enticed by such novel products. Considering that vaping is a fairly new trend, more research is necessary to comprehend this topic, especially in South Africa. There is little knowledge on the perceptions and attitudes of Generation Z consumers on e-cigarette marketing.

This research seeks to determine the perception and attitudes of Generation Z, UKZN students, on e-cigarette marketing. The study aims to uncover how e-cigarette marketing, packaging and regulations influence Generation Z consumer perception and attitudes towards e-cigarettes. The study also examines the influence that the Covid-19 pandemic had on young adults' perceptions of and attitudes toward e-cigarettes. This chapter presents the background to the study, problem statement, the purpose of the study, contribution of the study, limitations of the study, research questions and objectives.

1.2 Background

The use of traditional cigarettes is linked to great levels of diseases and death worldwide (Kaisar, Prasad, Liles and Cucullo, 2016). As a result, over several generations, marketers have been searching for cigarette alternatives with less risk and which are safer (Hajek, Etter, Benowitz, Eissenberg and McRobbie, 2014). A pharmacist from China named Hon Lik invented the electronic cigarette in 2003 in an attempt to combat this challenge. E-cigarettes were introduced in the market as potential substitutes to traditional cigarettes. According to Dinakar and O'Connor (2016), as cited by Muposhi and Dhurup (2018, p.552), "e-cigarettes are positioned as nicotine reduction therapies and also as smoking cessation aids in the marketplace". Smoking cessation is the process of quitting or stopping tobacco smoking and e-cigarettes commonly identify as a smoking cessation tool, an alternative to traditional cigarettes. Even though some studies conclude that e-cigarettes are an effective smoking cessation tool, some studies retain that e-cigarettes can act as a gateway to tobacco use which might undermine the progress made in reducing tobacco use (U.S. Department of Health and Human Services [USDHHS], 2016).

Since their commercialisation, e-cigarettes have exponentially grown in the global market, (McCausland, Maycock, Leaver and Jancey, 2019). E-cigarette segment revenue is projected

to reach US$540 million in 2022 and the market is expected to grow at an annual rate of 5.54% (CAGR 2023-2027). In a global comparison, most revenue is produced in the United States which generated US$7.64 billion in 2022 (Statista, 2022b). In 2022 the e-cigarette market in South Africa was valued at US$0.54 billion, with the market value estimated to reach US$0.71 billion by 2027 (Statista, 2022b). The market is expected to grow annually by 5.54% (CAGR 2023-2027, see Figure 2.6). Even though some individuals identify e-cigarette marketers as an undependable source of information, their perceptions and grounds for e-cigarette use mirror the marketing claims made by e-cigarette advertising (Mhazo, 2019). Although past studies give insight into the influence e-cigarette marketing has on shaping young adults' perceptions about these products, such studies were not conducted in South Africa.

The insufficient data on e-cigarette marketing in South Africa makes it hard to comprehend the influence marketing has on shaping the youth's perceptions of e-cigarettes in South Africa and the influence it has on initiation and use of e-cigarettes. The study aims to uncover the influence e-cigarette marketing has on young adults' perceptions of, attitudes toward and use of e-cigarettes in South Africa. The insufficient data on the long-term risks of e-cigarettes encourages both users and non-users to depend on their social interaction and on advertising as a means of sharing information. Word of mouth has been established as the most common way of sharing e-cigarette-related information due to the lack of information about e-cigarettes from credible sources. E-cigarette users and non-users speak about e-cigarettes with their peers, colleagues, family members as well as strangers (Mhazo, 2019).

Regulations also play a part in shaping young adults' perceptions of, attitudes toward and use of e-cigarettes. Wagoner, Cornacchione, Wiseman, Teal, Moracco and Sutfin (2016) conducted a study that concluded that participants viewed the lack of e-cigarette regulation as an inference that e-cigarettes are of no harm. The study provides insight into the link between young adults' perceptions of e-cigarettes and the regulatory environment as participants concluded that e-cigarettes would have been regulated like traditional cigarettes if they were harmful in any way. For this reason, young adults may interpret the lack of e-cigarette regulation as being harmless and safe (Wagoner *et al.*, 2016).

1.3 Problem statement

Even though the use of e-cigarettes is gaining popularity in South Africa, limited research has been conducted to examine the influence marketing has on shaping young adults' perceptions of these products. According to Statista (2022) the revenue derived from e-cigarettes in 2014 was US$0.29 billion and has steadily increased to US$0.54 billion in the year 2022. Statista (2022) remarks that e-cigarettes are forecasted to generate US$0.71 billion in revenue for the year 2027.

Some of these products are largely unregulated, proliferating their use, driven by myths, assisted by misleading labels and no health warnings (Noar, Hall, Francis, Ribisl, Pepper and Brewer, 2016). The insufficient evidence about their long-term health risks has not hindered the use and marketing of e-cigarettes among young adults. Therefore, there is a need to investigate, understand and comprehend how young adults perceive e-cigarettes and the knowledge they have of e-cigarette products.

Having insight on the perceptions the youth have and determining resources that provide them with data in relation to e-cigarettes contributes in-depth knowledge of how various effective public interventions could be planned and benefit policymakers to set appropriate regulations. The findings will also contribute to advise future studies on e-cigarettes in South Africa.

Therefore, the study aimed to quantitatively examine the perception and attitudes of Generation Z, UKZN students, on e-cigarette marketing. The study further aimed to uncover how e-cigarette marketing, packaging and regulations influence Generation Z consumer perception and attitudes towards e-cigarettes initiation and use, the benefits/risks perceptions associated with e-cigarette use and e-cigarettes as a cessation tool.

1.4 Purpose of this study

The main purpose of this study is to assess the perception and attitude of Generation Z UKZN students on e-cigarette marketing regarding the dimensions listed above. This study provides valuable insight into the perceptions and attitudes of Generation Z consumers on e-cigarette marketing, hopefully this can help aid marketers or policy makers.

1.5 Contribution of the study

Exploring this research area will create knowledge about the perception and attitude of Generation Z UKZN students on e-cigarette marketing. Since there is little research about knowledge in this area it will provide academics with further research. This study will add to the literature and be useful in relation to the following.

Studying the influence of e-cigarette marketing on perceptions, initiation and use of e-cigarettes by young adults would expound the strategies utilised by e-cigarette marketing to entice young adults, which will be beneficial to policymakers. Investigating the perceptions and attitudes that Generation Z consumers have on e-cigarettes can also provide insight to marketers on the effectiveness of their marketing efforts.

1.6 Research questions

1. How does marketing influence the perceptions and attitudes of Generation Z UKZN students towards e-cigarettes?
2. What influence does packaging have in shaping Generation Z UKZN students' perceptions and attitudes of e-cigarettes?
3. What are students' perceptions and attitudes of the South African regulation on e-cigarettes?

1.7 Research objectives

1. To determine how marketing influences the perceptions and attitudes of Generation Z UKZN students towards e-cigarettes.
2. To determine the influence packaging has in shaping Generation Z UKZN students' perceptions and attitudes of e-cigarettes.
3. To determine students' perceptions and attitudes of the regulation of e-cigarettes in South Africa.

1.8 Limitations of study

- The study was limited to students registered at UKZN Westville campus. Thus, this limited the number of participants from other UKZN campuses. Therefore, the

dissertation findings cannot be generalised to all UKZN students. Likewise, the results also do not represent the perspectives of all young adults, particularly those who have not attended a tertiary education institution.

- The potential for bias in self-reported questionnaires exists, as does the possibility that the researcher's attitude and/or demeanour led participants to make assumptions prior to completing the questionnaire. The study assumed that the participants understood the questions and responded honestly and accurately. Since study results were limited to self-report, there was a possibility of underreporting or of never reporting use of e-cigarettes.

1.9 Summary outline per chapter

The following is a brief structure and breakdown of the various chapters in the dissertation.

- **Chapter 1:** This section presents a short discussion of the topic being investigated by providing an overview of the study, the research problem statement and by explaining the motive behind the study. In this chapter, study objectives and research questions are presented. The chapter concludes with a summary of all chapters covered in the study.
- **Chapter 2**: The purpose of this chapter is to present a literature review relating to the definition of e-cigarettes, including the background of e-cigarettes, health risks, market and regulation.
- **Chapter 3**: This chapter will elucidate the influence of e-cigarette marketing and industry marketing strategies used and the role of e-cigarette marketing strategies in shaping young adults' perceptions.
- **Chapter 4**: This chapter will discuss young adults' perceptions and attitudes of e-cigarettes, including young adults' perceptions and attitudes of e-cigarette smoking cessation, risk and regulations. Furthermore, the relevant theories and a comprehensive survey of previous research pertinent to the study are presented.
- **Chapter 5**: This chapter explains the method used in this study and discusses research constructs that were used to accomplish the objectives of this study. This includes research design, ethical clearance, sampling techniques, data collection methods and data analysis techniques.

- **Chapter 6**: This chapter presents the findings from the questionnaire. The chapter also provides the analysis of results and discussion as related to the objectives. The chapter also provides the analysis of results and discussion as related to the objectives.
- **Chapter 7**: In chapter seven, the data that was gathered for this study is interpreted and discussed to make it more understandable to the reader.
- **Chapter 8**: This is the final chapter of the dissertation report; it provides conclusions of the present research. The research conclusions are drawn from the findings and discussion as presented in Chapter 7. The chapter provides recommendations for future research and research limitations are also highlighted.

1.10 Conclusion

This chapter has introduced the study and has given an overview of what the study aims to achieve. The chapter has provided an overview of the areas to be investigated, the purpose of the study, the main research problems, research objectives, research questions, limitations of the study and finally the structure of the study. The next chapter focuses on the literature study.

CHAPTER 2: Overview of the cigarette market with a focus on e-cigarettes

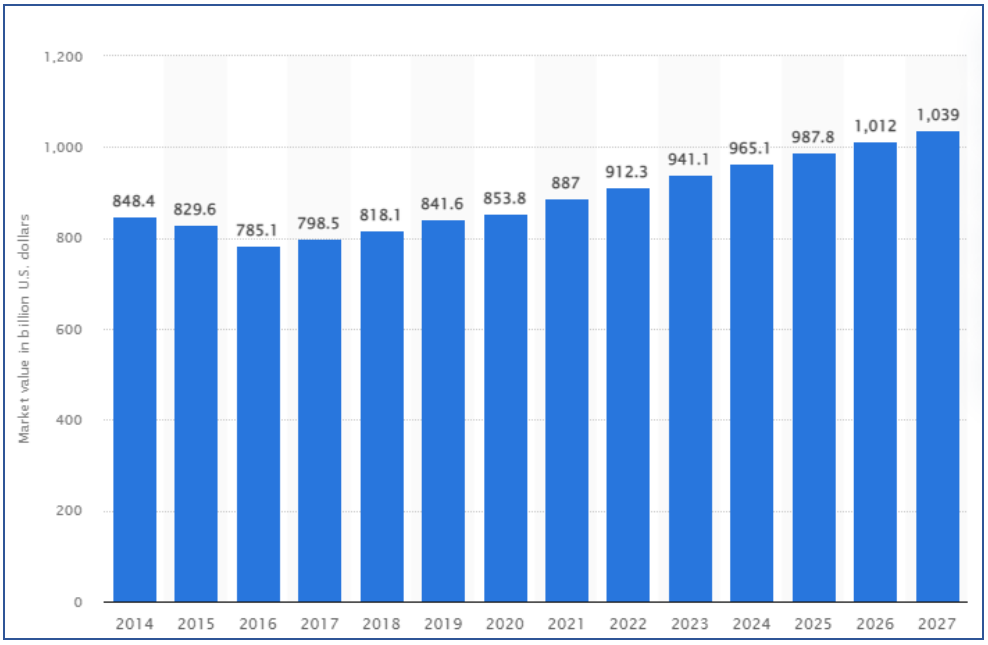
2.1 Introduction

The tobacco industry commonly refers to companies involved in the production of cigarettes, cigars, snuff, snus, chewing tobacco and pipe tobacco, with tobacco representing approximately 95% of the total market (British American Tobacco Annual Report, 2011). This chapter aims to explore and review the literature on the overall tobacco market with a focus on e-cigarettes. The chapter will highlight the tobacco industry's market size and key industry players. The chapter also includes a market analysis of the tobacco industry which highlights the industries strengths, weaknesses, opportunities and threats, leading to the emergence of the e-cigarette market and growth in the industry.

2.2 Tobacco industry

At the end of 2022, the size of the global tobacco market was estimated at US$912.3 billion, an increase of around US$25 billion from 2021 (Koen van Gelder, 2023). According to Statista (2023), in a global comparison, most sales will occur in China in 2023, with sales of US$293.8 million. Increasing number of smokers, emerging markets in developing countries, and introduction of innovative new products such as e-cigarettes are expected to drive the market in the coming years (Grand View Research 2022). According to Statista (2023), by 2027 the global tobacco market will be worth over US$1 trillion (see figure 2.1).

Figure 2.1 Value of the tobacco market worldwide from 2014 to 2027



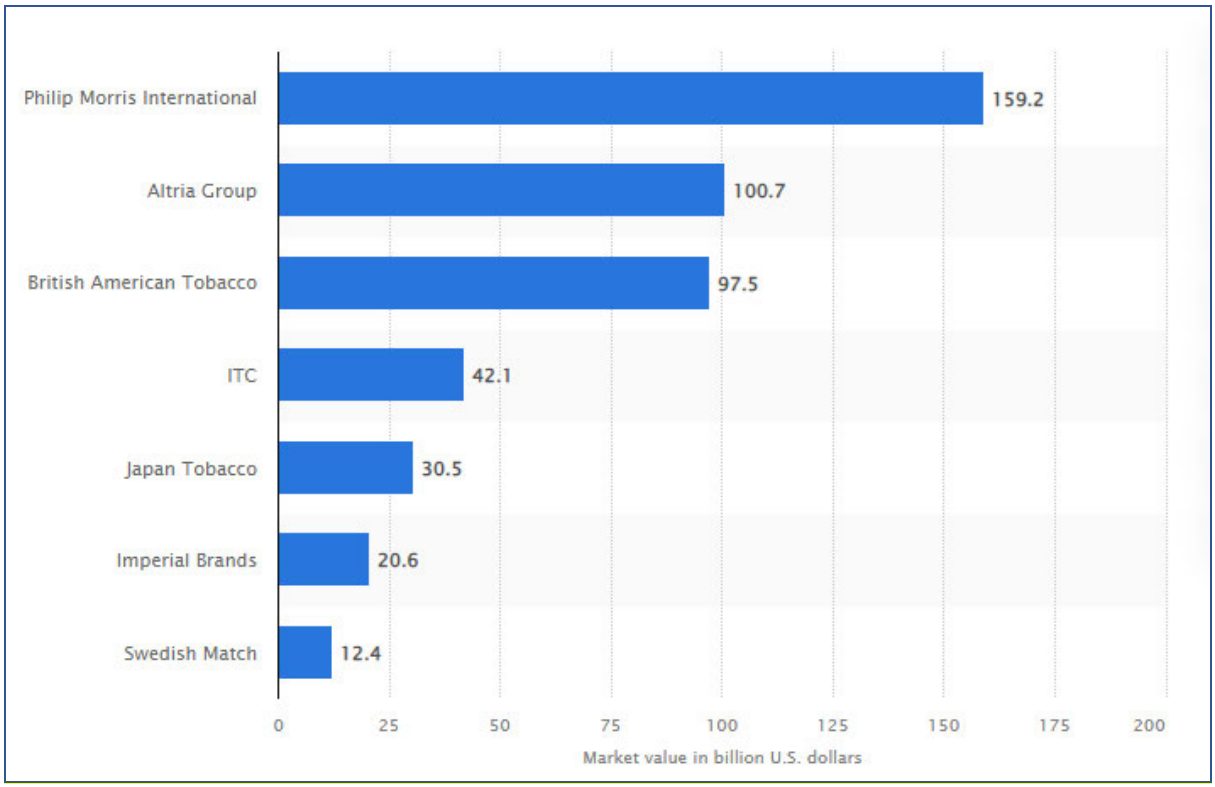
Source: Statista (2023).

2.2.1 Big Tobacco Companies

Big Tobacco is the world's largest privately-owned company with 92% of the tobacco trade. The top six tobacco corporations are Philip Morris International (PMI), British American Tobacco (BAT), Imperial Brands, Japan Tobacco International (JTI), Altria and China Tobacco Corporation (CNTC). Among these, CNTC is a government owned entity that controls tobacco regulation and the production of tobacco products, and the rest are private companies. Therefore, CNTC is often excluded, and big tobacco is commonly referred to as the big five privately owned companies (Statista 2020).

PMI was the world's largest tobacco company as of 2021, with a global market capitalization of approximately US$159.2 billion. In second place is Altria Group, with a global market value of about US$100.7 billion (see Figure 2.2). Other eminent players in the global tobacco industry are BAT, JTI and Imperial Brands, which manufacture cigarettes for world-famous brands such as Winston, Davidoff and West (Koen van Gelder, 2022).

Figure 2.2 Big Tobacco Market Share in 2021



Source: Statista (2022a).

2.3 The South African tobacco market

In 2021, the South African tobacco market was valued at R39.2 billion (US$2.6 billion). The market is expected to reach a CAGR of over 2% between 2021 and 2026. According to Global Data (2022), tobacco products are expected to show steady growth compared to cigarettes in the coming years, which could support the growth of the market. The main distribution channels in the South African tobacco market are convenience stores, hypermarkets, supermarkets, tobacco shops, cash and carry, warehouse clubs and department stores. Convenience stores were the major distribution channel for the tobacco category in 2021 market growth.

After a difficult 2020 for the South African tobacco industry, 2021 saw dynamic growth, with current value sales exceeding pre-pandemic levels. Much of last year's decline was the knock-on effect of both the COVID-19 restrictions, which restricted travel, and the strict ban

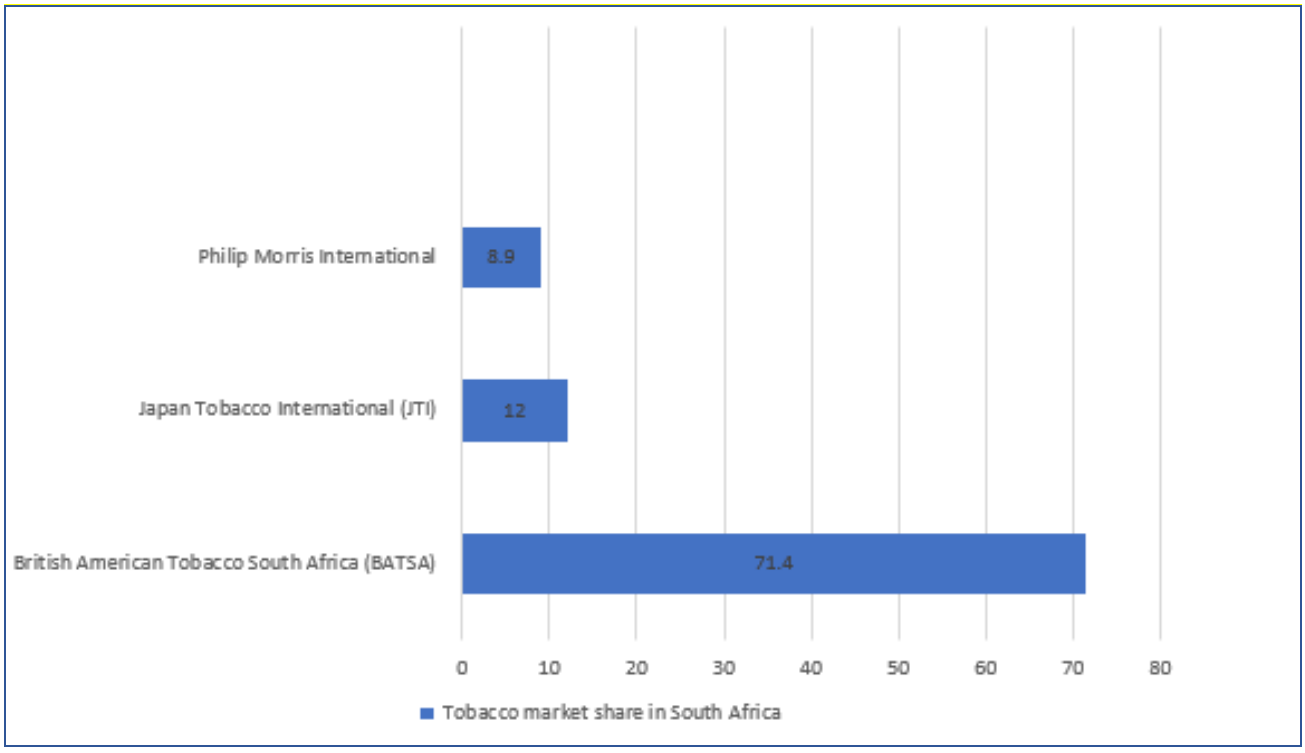
on tobacco and alcoholic beverages, which gravely restricted the industry's ability to sell its products through legal markets (Grand View Research 2022).

According to Euromonitor (2022), 2021 was one of the fastest growing years for new product categories, including e-cigarettes products and heated tobacco products, with the latter more than doubling in volume, in comparison to the past year based on two elements. Firstly, young people are showing strong interest in alternative tobacco products, switching directly to e-cigarettes as their smoking medium rather than starting with cigarettes. Further tax increases on tobacco are expected during the forecast period. Secondly, tobacco prices are expected to rise sharply during the forecast period, driven by an overall decline in tobacco smokers who increasingly use alternative tobacco products.

2.3.1 Big Tobacco Companies in South Africa

Historically, British American Tobacco South Africa (BATSA) remains the largest cigarette manufacturer and distributor of tobacco products in South Africa. However, its market share has declined in recent years (Tobacco Tactics, 2021). Euromonitor (2020), estimated that in 2019, BATSA held 71.4% of the market share, followed by JTI (12%), and PMI (8.9%).

Figure 2.3 Tobacco Market share in South Africa in 2019



Source: Euromonitor (2020).

From 2010, local producers have penetrated the market offering cheaper priced brands, such as Gold-Leaf Tobacco, Best Tobacco Company, Amalgamated Tobacco Manufacturers, and Carnilinx Tobacco Company. These entities have gradually gained market share and their presence increased greatly during the Covid-19 pandemic when cigarette sales in South Africa were banned for five months (Van Walbeek, Filby, Van der Zee, 2020).

2.4 Market analysis

Managing the marketing function begins with a thorough analysis of the company's situation. A marketer should conduct a SWOT analysis that identifies the company's overall strengths, weaknesses, opportunities, and threats (Kotler and Armstrong, 2018).

A SWOT analysis helps identify the strengths, weaknesses, opportunities, and threats of a particular project or an overall business plan. The analysis was created by Albert Humphrey in the 1960s (Teoli, Sanvictores and An, 2022). The analysis is utilized for strategic planning and can be used by marketers to stay ahead of market trends. For instance, the analysis can be used to discover previously unidentified opportunities for success and expose threats before they escalate to failure (Alicia Raeburn, 2022).

Faced with strict regulation and legislation, the tobacco industry has faced many issues in recent history from health related issues to bans in cinemas, followed by a ban on smoking on domestic flights, which faced many amendments as years went by adding more tobacco control regulations and legislations which included banning tobacco advertising, promotion and sponsorship and imposing excise tax (van Welbeek 2005). The government has made it difficult for tobacco companies to use traditional marketing methods. Therefore, regular analysis and updating of key decision-making tools is imperative for the industry to manage its business strategically and remain sustainable in a volatile environment.

2.4.1 Swot analysis of tobacco industry

2.4.1.1 Internal Factors

In a SWOT analysis, strengths and weaknesses are characterized as internal factors.

Strengths and weaknesses are categorized as internal factors of a SWOT analysis. For example, resources and experience that are easily available to business are considered as elements of internal factors (Bush 2019).

2.4.1.1.1 Strengths

- Tobacco companies invest heavily in research and development and leverage technologies used in other industrial sectors, such as the automotive industry, to develop new products and reach new customers with high-quality products. For example, Philip Morris International, the world's largest manufacturer and marketer of tobacco products, have already invested $6 billion in research, product and commercial development efforts to incorporate technologies such as temperature sensors widely used in the automotive industry to heat tobacco in their latest product range known as IQOS (Mouratidis 2019).

- Moreover, with crowded markets, a wide variety of products of similar nature, and fierce competition, tobacco companies' intellectual property, such as brand names and logos, helps customers to identify them. In 2020, Forbes estimated the brand value of Marlboro, the leading cigarette brand in the United States, at $26.8 billion (Forbes 2020).
- Cigarettes have an inelastic demand and that has remained a key driver of market growth despite high taxation levels around the world. Furthermore, the availability of small cigarettes helps with smaller amounts of tobacco intake for smokers who wish to reduce their smoking habit and smoking consumption (Grand View Research, 2022).

2.4.1.1.2 Weaknesses

- **Decline in tobacco leaf demand**

Lencucha, Drope, Magati, Sahadewo (2022), noted that global demand for tobacco leaves has diminished in recent years. Tobacco leaf is grown in several South African provinces, but production has declined by 54% between 1990 and 2014 (Du Preez, 2017). As tobacco acreage declined, the number of primary producers and tobacco processors declined (Tobacco Tactics, 2021). In 1996, 620 commercial tobacco farmers were farming 14,700 hectares of land. That number dropped to 175 commercial tobacco growers in 2014, cultivating 4,700 hectares of land. Tobacco cultivation is only a small part of the country's agriculture, with less than 0.01% of agricultural land dedicated to tobacco cultivation (Tobacco Atlas, 2020).

- **Tobacco control**

Even though tobacco companies spend tens of billions of dollars on marketing and brand promotion globally each year, the World Health Organization has reaffirmed its total ban on all forms of tobacco advertising and sponsorship. According to WHO a report on the global tobacco epidemic, below lists the direct and indirect bans on tobacco marketing and sponsorship (WHO, 2013).

- ❖ Prohibition of printing adverts in magazines, newspapers.
- ❖ Broadcasting on radio and TV.
- ❖ Screen advertising (cinemas and billboards).
- ❖ Point of sale (cash register and in-store display).
- ❖ Internet.
- ❖ Promotional discounts.
- ❖ Brand expansion and brand sharing (non-tobacco products and services identified with tobacco brands).

Various researchers are of the opinion that the involvement of government on tobacco control is helpful, banning all tobacco advertising, promotions, and sponsorships and decreases the rate of smoking prevalence. According to Jamal, Phillip, Gentzke, Homa, Babb, and King (2020), proven interventions such as anti-tobacco mass media campaigns and better access to smoking cessation counseling and medications are essential for reducing smoking and smoking-related diseases. Many researchers go on to comment on that comprehensive tobacco control programs and legislations to decrease smoking rate (Bush, 2019; Jones and Silvestri, 2010; Levy, Tam, Fong, and Chaloupka, 2018; Tobacco Tactics, 2021; Van Walbeek, Filby, Van der Zee, 2020).

2.4.1.2 External Factors

Opportunities and threats are categorized under external factors of the SWOT analysis. While these factors may directly or indirectly affect opportunities and threats for the tobacco industry, it is important to understand the negative impact of externalities and act proactively (Kotler and Armstrong, 2018). For instance, the tobacco industry is regulated globally by international conventions or government of host nations, in such a scenario, the industry is obligated to report, understand and act accordingly on these uncontrollable trends and changes.

2.4.1.2.1 Opportunities

- **Tapping into the e-cigarette market**

Tobacco use is declining in both developed and wealthy countries around the world as public awareness of the negative effects of tobacco use increases Van Walbeek, Filby, Van der Zee, 2020). To sustain demand in such countries, the corporations are introducing new products that are considered as a safer alternative to conventional products. Growing popularity of e-cigarettes and vaping devices created a great opportunity for tobacco producers to invest and research in this product segment (Grand View Research, 2022).

Major tobacco industries have adopted various approaches to enter the e-cigarette industry with some opting to develop their own products and others looking into making big acquisitions (Kendell, 2014). This includes BAT, Imperial Brands, the Altria Group, Reynolds American and Japan Tobacco International. In South Africa, Twisp is the most well-known e-cigarette brand. BAT South Africa acquired Twisp in 2019 from a South African e-cigarette manufacturer (Tobacco Tactics, 2021). BAT South Africa has been the leading and largest tobacco producer and distributor of tobacco products in South Africa (Tobacco Tactics, 2021). Figure 2.4 lists more tobacco companies with e-cigarette brands.

Figure 2.4 Tobacco companies with e-cigarettes brands

Company	E-cigarette brand
British American Tobacco	Vype, VUSE, 2019 British American Tobacco South Africa (BATSA) acquired Twisp from a South African e-cigarette manufacturer.
Lorillard	Blu (until 2015).
Imperial Brands	Blu (from 2015), acquired Dragonite in 2013, launched its own e-cigarette 'Jai' in Europe in 2015.
Japan Tobacco International	Bought UK e-cigarette brand E-lites in June 2014 from Zandera.
Philip Morris International (PMI)	2014, PMI acquired UK company Nicocigs, developed its own e-cigarette IQOS Mesh in 2018
Swisher	E-swisher

Source: Tobacco Tactics (2022).

Independent e-cigarette companies (companies that are not associated with tobacco companies) have been known to distance their products from tobacco (Tobacco Tactics, 2021).

- **Covid-19 Pandemic**

In March 2020, WHO declared the Covid-19 outbreak a global pandemic. WHO (2020) defined Covid-19 as an epidemic that attacks the respiratory tract and can lead to serious illness and death. The sale of cigarettes was prohibited at the beginning of the lockdown on the 27th of March 2020, as cigarettes were not regarded as "essential products or services" (Kalideen, Nyatsanza, Naidoo, Govender and Egbe, 2020). The aim of the ban was to encourage public health and prevent the spread of the virus. On the contrary, the tobacco industry took advantage of pandemic and saw an opportunity.

A research article by Ramamurthi, Chau and Jackler (2020) claims that e-cigarette manufacturers have been exploiting the Covid-19 pandemic to promote the selling of e-cigarette products. The study presents examples of advertisements that encourage e-cigarette products as a means of handling stress during the pandemic, with advertising messages such as “Stay Home & Vape”, “Keep Calm and Stay Home”, using social media posts to promote the use of e-cigarettes as ideal companions for those working from home (WHO, 2021). Some e-cigarette producers offer complimentary gifts with e-cigarette purchases of essential supplies like hand sanitiser, branded facemasks and toilet paper. For instance, BAT pushed its branding by sending universal health messages, supplying ventilators, sanitisers, equipment and branding face masks to social media influencers (Hood, 2020.) Horel and Keyzer, (2021) argued that by associating vaping products with the Covid-19 pandemic e-cigarette producers are indirectly implying a health benefit of their products. For example, US Bidi Vapor claimed on Instagram that “A bidi stick a day keeps the pulmonologist away” (Horel and Keyzer, 2021).

2.4.1.2.1 Threats

- **Health implications**

Tobacco smoking is a leading cause of noninfectious diseases worldwide and is a significant risk factor for cardiovascular disease and lung disease (Münzel, Hahad, Kuntic, Keaney, Deanfield, and Daiber, 2020). Smoking is known and well documented to have serious health consequences. Tingum, Mukong, and Mdege (2020), reported that due to the increased risk of smoking-related diseases, early smokers are expected to die approximately six years earlier than comparable non-smokers. According to Statistics South Africa (2017), 19.5% of all reported deaths in 2016 were related to smoking, accounting for approximately 81,975 deaths (Statistics 2017, cited from Tingum, Mukong, and Mdege, 2020).

- **Tobacco regulation**

Tobacco regulation is another factor impacting the tobacco industry, and as the South African government continues to review tobacco laws, this could prove to be a threat to tobacco companies looking to market their products in a declining market (Euromonitor International, 2011). South Africa has had a vigorous tobacco control policy since the early 1990s,

particularly since 1994. South Africa's tobacco control efforts have been widely recognized by the international tobacco industry, and respected tobacco control economists have cited South Africa as an example of a developing country (Van welbeek 2005).

The Tobacco Products Control Act 83 of 1993 is the primary tobacco control law in South Africa and governs many aspects of tobacco control tobacco. Tobacco use was banned in cinemas, and this was followed by a ban on smoking on domestic flights. There were many amendments as years went by adding more tobacco control regulations and legislations which included banning tobacco advertising, promotion and sponsorship and imposing excise tax (Tobacco Control Laws, 2012). The government has made it difficult for tobacco companies to use traditional marketing methods.

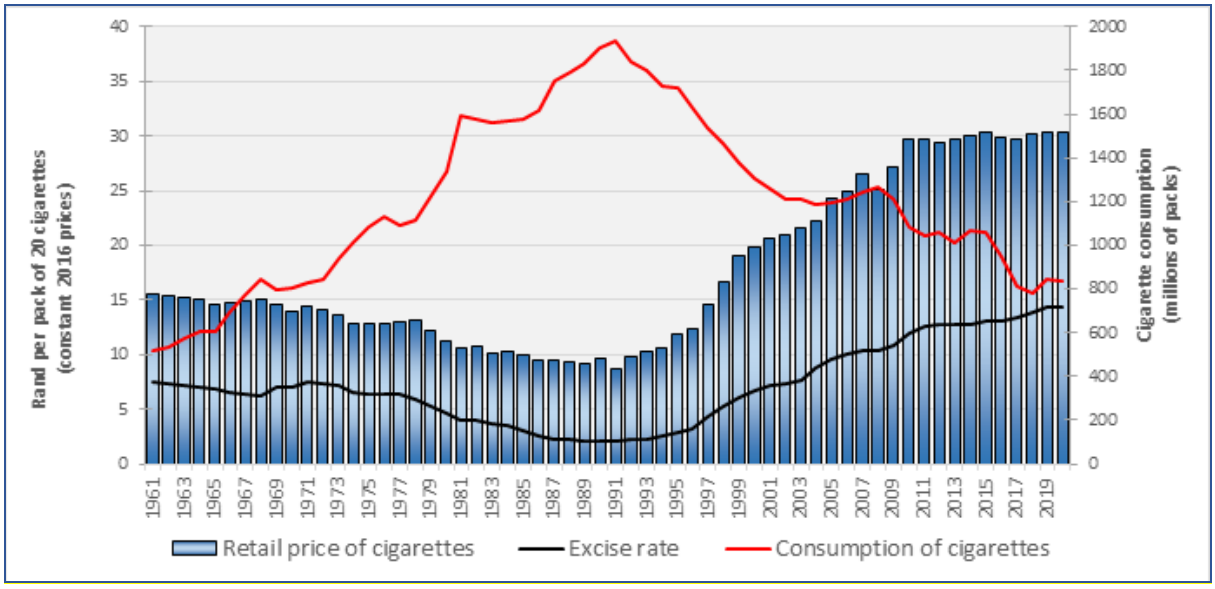
In the years that followed, the African National Congress (ANC) called for a smoke-free cabinet, challenged tobacco companies that failed to prominently display health warnings on cigarette packaging, introduced a 50% tax on the retail price of cigarettes, and in 1999 revised the Tobacco Products Control Act. Smoking in public buildings was banned and the sale of cigarettes without health warnings was illegal. South Africa was at the forefront of African countries to implement strict tobacco control policies (Wisdom, Juma, and Mwagomba, *et al.,* 2018).

- **High tax implication**

When the ANC came into power in 1994, the Minister of Finance declared that the government would increase excise duty on tobacco products from 20% (excluding VAT) to 50% (including VAT) on the retail price over several years (Van Walbeek, Filby, Van der Zee, 2020).

In 1997, the 50% target was achieved (Tobacco Tactics, 2021). Figure 2.5 shows the inverse relationship between cigarette consumption and real cigarette prices. Cigarette consumption declined as excise taxes (and retail prices) increased. At its peak in 1991, South Africans were consuming about 1.9 billion packs per year, but by 2016 it had fallen to about 1 billion packs. Tobacco tax was the main reason for the decline in consumption (Chelwa, Walbeek, and Blecher, 2016).

Figure 2.5 Cigarette consumption and cigarette prices:1961-2020.26



Source: Tobacco Tactics (2021).

- **Illicit Trade**

The decline in sales of South Africa's legal tobacco industry may be attributed to large increases in the cost-of-living, constraining consumer spending and increased sales of illicit tobacco. (Euromonitor International, 2011). Rising costs of living have driven South African consumers to switch to cheaper tobacco products to minimize their spending, sometimes resorting to buying illicit cigarettes that are 50% cheaper than legal cigarettes. This has had a negative impact on legal tobacco sales, which are expected to continue to decline (Van Walbeek, Filby, Van der Zee, 2020).

During the Covid-19 pandemic, the South African tobacco industry was subjected to a 20-week ban on the sale of all raw tobacco, processed tobacco and all processed tobacco products as part of lockdown measures. This caused the industry to lose significant market share to illicit tobacco sales. The industry also faced an 8% increase in excise duty and the announcement of new government initiatives to tighten tobacco control (Research and Markets, 2021).

2.5 E-cigarettes and their market growth

E-cigarettes can be defined as "battery-operated products that produce an aerosolized mixture containing nicotine, flavourings, propylene glycol, glycerin and/or other additives that the user inhales" (USDHHS, 2016, p. 11). E-cigarettes vary widely in design and appearance, but generally operate in a similar manner and are composed of similar components (Figure 2.6).

Figure 2.6 Diversity of e-cigarettes

Source: North Carolina Healthy Homes (2019)

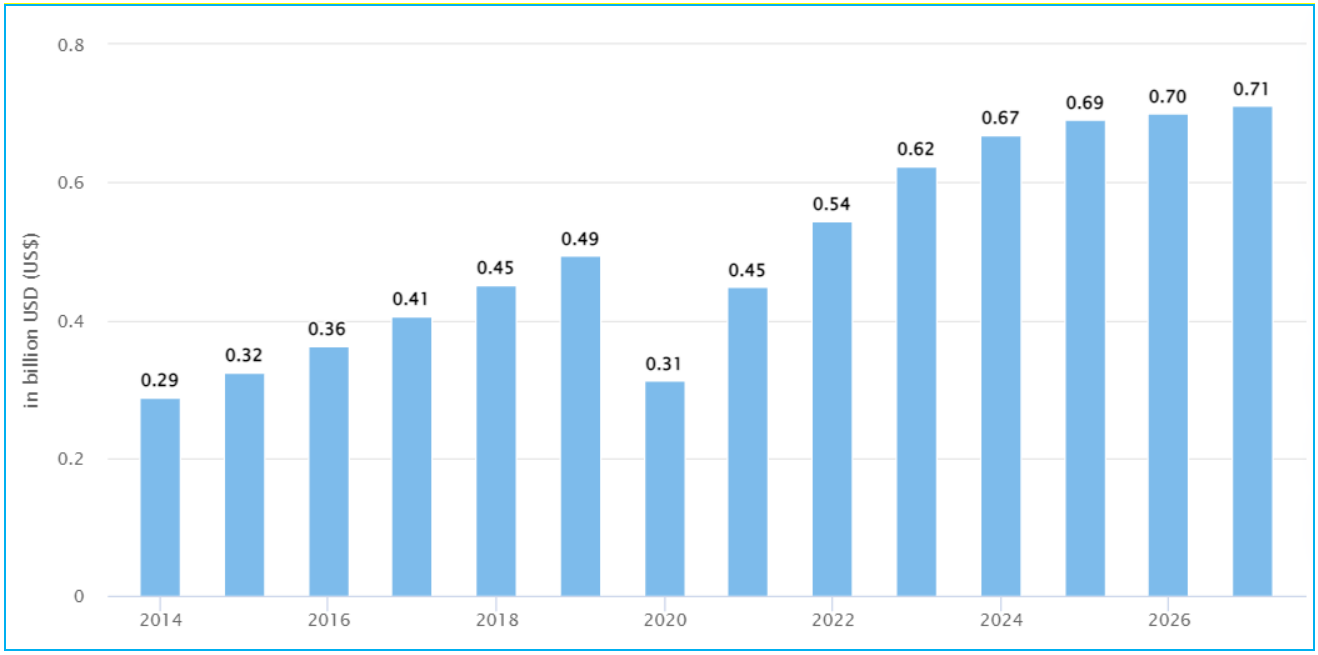
One of the first e-cigarettes was invented by Gilbert Herbert, an American engineer, in 1963. His invention aimed to offer a safer and less harmful way of smoking by substituting traditional cigarettes with heated flavoured air. Gilbert registered a copyright for his invention named "smokeless non-tobacco cigarette" in 1965, but it was not commercialised (Gilbert, 1965, p. 1). A pharmacist from China named Hon Lik reinvented the e-cigarette in 2003 (Bell and Keane, 2012). E-cigarettes were introduced as a potential substitute for traditional cigarettes. According to Dinakar and O'Connor (2016), as cited by Muposhi and Dhurup (2018, p.552), "e-cigarettes are positioned as nicotine reduction therapies and also as smoking cessation aids in the marketplace". Even though some studies conclude that vaping can be an effective method to quit smoking, some studies argue that vaping can act as a gateway to tobacco use which might undermine the progress made in reducing tobacco use (USDHHS, 2016).

E-cigarettes are a relatively new development in the tobacco market and industry, according to Research and Markets (2021), experts foresee high potential in the e-cigarette market, considering that a great deal of smokers would like to quit, and many of them perceive e-cigarettes as a healthier alternative to smoking (Muphoshi and Dhurup, 2021 and Wagner *et al*., 2016). The e-cigarette industry is estimated to be growing at a CAGR rate more than double that of traditional cigarettes, cigars, and cigarettes. However, this industry is very small compared to manufactured tobacco products (Research and Markets, 2021).

E-cigarette segments revenue is projected to reach US$540 million in 2022 and the market is expected to grow at an annual rate of 5.54% (CAGR 2023-2027). In a global comparison, most revenue is produced in the United States which generated US$7.64 billion in 2022 (Statista, 2022b). Since their commercialisation, e-cigarettes have exponentially grown in the global market, (McCausland, Maycock, Leaver and Jancey, 2019). Major e-cigarette markets by revenue are the USA, the UK and other developed European markets like Germany, Italy and France (Canback, 2018). Since 2014, e-cigarette brands in the USA, one of the largest markets, was approximately 466 with over 7,000 flavors (Zhu *et al*., 2014) and in 2017, US e-cigarette revenues were over $4 billion which accounted for 46% of e-cigarette product revenues globally (National Treasury, 2021).

In Africa, according to Muposhi and Dhurup (2021), South Africa is the leading market for e-cigarettes. In 2022 the e-cigarette market in South Africa was valued at US$0.54 billion, with the market value estimated to reach US$0.71 billion by 2027 (Statista, 2022b). The market is expected to grow annually by 5.54% (CAGR 2023-2027, see Figure 2.7). In global comparison, most revenue is generated in the United States with a revenue of US$7.640 million in 2022. Since 2018, over 20 websites have been selling and promoting e-cigarettes in South Africa, and in almost all markets, the use of e-cigarettes is further prevalent among young adults and adolescents (Muposhi and Dhurup, 2018). Caruana (2016), estimated that 70 retailers were marketing e-cigarettes in South Africa, according to Agaku, Egbe and Yusuf (2021), that number has tripled to include 240 vape shops in South Africa.

Figure 2.7 E-cigarette revenue in South Africa



Source: Statista (2022)

Increased health awareness among tobacco cigarette users and increased sales of e-cigarettes via online channels are propelling the acceptance of e-cigarettes in South Africa. The South African e-cigarette market is divided into cig-a-like, vaporisers, T-Vapor, and vape mods. Among the listed e-cigarette groups, the vaporiser group retained the greatest market share in 2018. The increasing popularity of vaporizers could be ascribed to a variety of factors, namely intensive advertising of aerosols and the capability to maintain various flavours simultaneously (Prescient & Strategic Intelligence, 2019). The advancement of e-cigarette devices and the introduction of new flavours are anticipated to further increase the customer base of vaporisers in South Africa. As a result of unclear regulations and import guidelines, South Africa's e-cigarette market is dominated by imported equipment, primarily from China. E-cigarettes at present are very popular amongst adolescents and young adults in the country (Muposhi and Dhurup, 2021). In 2018, people in the 16-24 and 25-34 age groups collectively rendered more than 55% of the market share, which is expected to further boost

demand for e-cigarettes over the forecasted period as e-cigarettes are used as an alternative to traditional cigarettes (Prescient & Strategic Intelligence, 2019).

2.6 Potential health risks of e-cigarettes

Currently, there is insufficient data on the long-term health risks of e-cigarettes and data on short-term health risks is inadequate. Scientific evidence concerning the effects of e-cigarettes on human health is limited and there is inadequate data on long-term effects. Although e-cigarette aerosols may hold fewer toxic substances than traditional cigarette smoke, studies investigating whether e-cigarettes pose less harm than traditional cigarettes are indefinite. Although certain data indicates that vaping may assist smoking cessation, conclusive data is insufficient. Health risks of e-cigarette smoking for both consumers and non-consumers cannot be established with currently accessible data (Callahan-Lyon, 2013; McNeill, Brose, Calder, Hitchman, Hajek and McRobbie, 2015; Wasowicz, Feleszko and Goniewicz, 2015). Even though e-cigarettes deliver lower levels of carcinogens compared to traditional cigarettes, thus posing a lower risk of cancer to users (although not a zero-cancer risk), they still expose consumers to increased levels of ultrathin particles and other toxicants that might significantly enhance the risk of heart and non-cancer lung diseases (Glantz and Bareham, 2018).

E-cigarette vapours have been discovered to contain poisonous chemicals and are not as harmless as advertised (Rubinstein, Delucchi, Benowitz and Ramo, 2018). In addition, Gaur and Agnihotri (2018) noted that it has been established that e-cigarette aerosols and e-liquids contain trace elements of carcinogens such as cadmium, lead and nickel. Grana, Benowitz and Glantz (2014) (cited in Egbe, London, Kalideen, Delobelle and Datay, 2020) also noted that high concentration and prolonged exposure to carcinogens can affect lung function and lead to other diseases.

Research on the effects of e-cigarettes on cardiac health has produced varied outcomes. Some research has demonstrated that susceptibility to e-cigarette smoke presents no significant harm to cardiovascular health (Farsalinos, Tsiapras, Kyrzopoulos, Savvopoulou and Voudris, 2014). These studies have uncovered that severe exposure to e-cigarettes does not have a direct link on heart attacks, coronary circulation and arterial stiffness. Another study by

Farsalinos and Polosa (2014) showed that after acute use of e-cigarettes, the heart rate of smokers did not change significantly. However, other studies indicate adverse effects on users' cardiovascular health, blood pressure and cells in users' blood vessels (Vansickel and Eissenberg, 2013; Nides, Leischow, Bhatter and Simmons, 2014; Yan and D'Ruiz, 2015).

In this regard, Vansickel and Eissenberg (2013) demonstrated that the heart rate of smokers increased sharply after using electronic cigarettes, which was also observed in another study by Nides *et al*. (2013). According to Yan and D`Ruiz (2015), as cited in Qasim, Karim, Rivera, Khasawneh and Alshbool (2017, p.3), e-cigarettes increased heart rate and end-diastolic pressure in smokers but at a lower rate in contrast to traditional cigarettes. It was also discovered that endothelial cell dysfunction and oxidative stress, which have a significant role in the pathogenesis of heart disease, are linked with e-cigarettes, even following a single use, although the effect was lower in contrast to cigarette use. Even if used for single use, this effect is not obvious compared to smoking. Further comprehensive research is required to understand the long-term effects of e-cigarette smoking on cardiovascular health (Qasim *et al.,* 2017).

Canistro *et al*. (2017) showed that in a rat lung cancer model, e-cigarette aerosols have strong mutagenic and cancer-initiating effects. A study by Staudt, Salit, Kaner, Hollmann and Crystal (2018) showed that short-term e-cigarette use also instigates cancer and metastasis advancing elements associated with lung cancer in small airway epithelium. Recently, Tommasi *et al*. (2019) recorded substantial genetic changes in the oral cells of e-cigarette smokers. The additional evaluation showed that these deregulated genetics are linked with signaling pathways involved in cancer.

Research in rats has revealed that prolonged exposure to nicotine in adolescence can affect cognitive functions leading to lower attention span and increased impulsiveness in adulthood. Adolescent rats exposed to nicotine exhibit changed long-term emotional reactions, such as increased anxiety and fear, and can lead to depression-like states in adulthood (WHO, 2016). A paper published in 2015 revealed that mice that were exposed to vapour were either infected with tissue culture influence and checked for loss of weight, fatality, lung and respiratory tract swelling, or are infected with streptococcus pneumonia through intranasal instillation and die a day later (Sussan *et al*., 2015). However, McNeill *et al*. (2015) argued

that numerous issues exist with the study and with the way its findings were interpreted. McNeill *et al*. (2015) argued that the mice model that was utilised had little significance for calculating human risk and did not arouse any new safety concerns. A study on mice by Madison *et al*. (2019) supports this view, that chronic use of e-cigarettes, regardless of nicotine or not, harms the lung defense system, increasing lung susceptibility to germs and viruses.

2.7 E-cigarette legislation and policies

The regulation of e-cigarettes has faced constant controversy. Originally, e-cigarette producers claimed that e-cigarettes were not tobacco products and could not be regulated as such. When the tobacco industry started advertising e-cigarettes as a safer tobacco product, the marketing of e-cigarettes as a non-tobacco product became contradictory. The WHO recommended that e-cigarettes be banned or have constraints put in place on their production, importing, distribution, portrayal, marketing and use (WHO, 2016). Globally, e-cigarette regulations and policies differ widely (Egbe et al., 2018).

As of November 2021, 109 countries regulate e-cigarettes (Global Tobacco Control, n.d.), while 47 countries, including four African countries (Ethiopia, Gambia, Mauritius and Uganda), banned the sale of e-cigarettes (Glantz, 2021). Several countries with e-cigarette policies in place regulate or ban e-cigarette marketing (Truth Initiative, 2021). The categorisation of e-cigarettes varies from country to country. For instance, in Thailand, Vietnam and the USA e-cigarettes are categorised as tobacco products, while in Japan, Chile and the Philippines they are classified as medical products. E-cigarettes in France, UK and Belgium are classified as medicinal and consumer goods, while in Malaysia they are categorised as poison and electrical appliances (Global Tobacco Control, n.d.; Mhazo, 2019).

The European Union has legislated measures for e-cigarettes, such as limiting the concentration of nicotine fluids (maximum of 2%), restricting tank size on e-cigarette devices (maximum of 2ml), necessitating childproof packaging and banning international marketing of e-cigarettes. Certain affiliate countries have more restrictions on taxes and the age of sale taxes (Kennedy, Awopegba, De Leon and Cohen, 2017). Remarkably, the UK has been more vigorous in advocating e-cigarettes as a safer alternative to tobacco cigarettes. Public Health England has urged the National Health Service to make e-cigarettes accessible to smokers

that want to stop or alternate. The UK permits e-cigarettes to be licensed as medical quitting aids (McNeill, Brose, Calder, Bauld and Robson, 2018).

2.7.1 South African regulation of e-cigarettes

South Africa hasn't amended any present regulation or advanced any new policies to regulate e-cigarettes and turmoil continues to surround legislation with regards to e-cigarettes (Businesstech, 2022). Various countries regulate e-cigarettes as a tobacco product, with e-cigarettes being subjected to the same laws as tobacco products (Golegal, 2017). The spokesperson for the Western Cape Department of Health, Mark van der Heever, explained that e-cigarette products do not contain tobacco hence they cannot be regulated as a tobacco product in terms of the Tobacco Control Act. However, he further notes that e-cigarette products resemble traditional cigarettes so they might be seen as challenging the "denormalisation" of tobacco use (Nosa, 2017).

The relevant legislation for e-cigarette regulation specifically within South Africa does not address e-cigarettes but rather refers to products that contain nicotine. Nicotine in South Africa is registered as a drug or medicine in terms of the Medicines and Related Substances Act, 1965 (Act 101 of 1965), which allows for the registration of medicines and related substances meant for human and animal use (Global Tobacco Control, n.d.; National Treasury, 2021).

In accordance with the Medicines and Related Substances Act, Schedule 3 substances can only be sold at pharmacies and be bought with a prescription (Muposhi and Dhurup, 2018). However, e-cigarettes that do not contain nicotine and do not make any smoking cessation claims are not covered by the Medicines and Related Substances Act and are consequently unregulated (Nosa, 2017). The Minister of Health, Dr Aaron Motsoaledi at the time, explained that it would be tricky to box e-cigarettes as any other type of cigarette as not all e-cigarettes contain nicotine which meant that the government would have to spend time and money to find out which e-cigarettes did not contain nicotine (Nosa, 2017).

The Tobacco Products Control Amendment Act, which proposes to submit e-cigarettes to the same laws that regulate tobacco cigarettes in South Africa, has been introduced (Government Gazette, 2018). The government has proposed the Control of Tobacco Products and

Electronic Nicotine Delivery Systems Bill where it wishes to regulate e-cigarette products similarly as traditional cigarettes. The bill was published for public comment in May 2018 but has not yet been tabled (Businesstech, 2022; National Treasury, 2021). The plans would restrict online marketing and sales, instruct plain packaging and age restrictions and ban vaping in public places (The Global State of Tobacco Harm Reduction [GSTHR], n.d.). The amendment bill is currently under deliberation and has not yet been approved.

2.8 Conclusion

This chapter of the literature review illustrated the tobacco industry's market size and key industry players, a market analysis of the tobacco industry which highlights the industries strengths, weaknesses, opportunities and threats, leading to the emergence of the e-cigarette market and growth in the industry. The ensuing chapter will discuss e-cigarette characteristics and marketing strategies used by the e-cigarette industry to attract the youth and young adults.

CHAPTER 3: E-cigarette characteristics and marketing strategies

3.1 Introduction

Exposure to advertising and marketing has a major influence on the youth's smoking behaviour (Zhu, Li, He, Li, Xu, Yu, 2019). Evidence of more positive attitudes regarding intent to smoke, smoking initiation and smoking have been associated with youth being exposed to e-cigarette promotion in movies, magazines and different types of media (Truth Initiative, 2021). E-cigarettes have been promoted heavily on the internet through advertisements sponsored by e-cigarette companies, as well as on YouTube and Twitter (Kim, Miano, Chew, Eggers and Nonnemaker, 2017; Luo, Zheng, Zeng and Leischow, 2014). Mobile adverts are a popular place for e-cigarette advertising because they can reach millions of young people.

3.2 Traditional methods of marketing tobacco products

South Africa has implemented a number of comprehensive tobacco-control policies in the Tobacco Product Control Act of 1993, including health warnings on cigarette packs and advertising material, tobacco advertising, and sponsorship (Chelwa, Van Walbeek, Blecher, 2017 and Tingum, Mukong, and Mdege, 2020). The government has made it difficult for tobacco companies to use traditional marketing methods (Tobacco Tactics, 2021).

Advertising and packaging bans in South Africa that limits the use of traditional marketing methods for the South African tobacco industry according to the Tobacco Product Control Act includes:

- **Advertising of tobacco products Act 63 of 2008, Section 3 (1) (a)**

No person shall advertise or promote, or cause any other person to advertise or promote, a tobacco product through any direct or indirect means, including through sponsorship of any organisation, event, service, physical establishment, programme, project, bursary, scholarship or any other method (Tobacco Control Laws, 2012).

- **Promotion of organised activities Act 63 of 2008, Section 3 (2) (a)**

No manufacturer, importer, distributor or retailer of tobacco products shall organise or promote any organised activity that is to take place in whole or in part in the Republic; make any financial contribution to any organised activity that is to take place, or is taking place, or

has taken place in whole or in part in the Republic (Wisdom, Juma, and Mwagomba, *et al.,* 2018).

- **Charitable financial contributions or sponsorships Act 63 of 2008, Section 3 (3)**

A manufacturer or importer of a tobacco product may make a charitable financial contribution or sponsorship, provided that such contribution or sponsorship is not for the purpose of advertisement (Avenant,2015).

- **Prescribed notices on tobacco products Act 63 of 2008, Section 3 (10)**

Rotating text-only health warnings covering 15 percent of the front of the package and 25 percent of the back of the package are required on cigarette packaging. Misleading packaging and labeling, including terms such as "light" and "low tar," is prohibited (Tobacco Control Laws, 2021).

3.3 Characteristics of e-cigarettes

E-cigarettes have various names, such as vapes, vape pens, e-cigs, mods and tanks. Danovitch and Mooney (2019, p.43) noted that a typical e-cigarette consists of a cartridge that stores e-cigarette liquid (e-liquid), a battery and a heating element. E-liquid, or more colloquially known as e-juice or vape juice, is a solution that consists of humectants (either propylene glycol and/or glycerol), nicotine, distilled water, flavouring and other additives that are optional.

The mechanism of e-cigarette inhalation of liquid involves instant heating and cooling of the liquid, creating aerosol vapour (Dinakar and O'Connor, 2016). The battery-powered current passes through the spiral resistance system that stores the e-liquid in the atomizer to saturate it, thereby heating the liquid. The liquid is then evaporated into an aerosol mist, a combination of liquid and gas droplets, that is inhaled or 'vaped' by the user through the mouthpiece. Activating this process can be started by the air sensor when inhaling, imitating a cigarette, or by pressing the button manually (Talih, Balhas, Salman, Karaoghlanian and Shihadeh, 2016). There are big differences in the manufacture and use of e-cigarettes. There are approximately 460 brands and 8,000 different e-liquid flavours, such as the famous menthol flavour and flavours similar to fruits, sweets and beverages. E-liquid solutions are not only different in taste, but also contain nicotine concentration, pH and other additives

(Danovitch and Mooney, 2019). The nicotine strength varies from 0 to 24mg/ml up to 36mg/ml, however, the average concentration of e-cigarette activation containing nicotine averages about 18mg/ml, compared to about 6-13mg of nicotine (12mg on average). Compared to traditional cigarettes, this is significantly higher, depending on brand and producer. However, despite this, the exact concentration of nicotine released to the blood following inhalation is generally lower compared to the level after tobacco use (Glasser *et al*., 2017).

3.4 Advertising and marketing methods used by e-cigarette companies

3.4.1 Online marketing

The increasing popularity of e-cigarettes has been largely attributed to aggressive promotion over the internet (Rom, Pecorelli, Valacchi and Reznick, 2015). E-cigarette internet vendors have been actively engaged in various promotional activities to increase the appeal and presence of their products online. Regulation of this environment is particularly challenging and has led to calls for targeted policymaking including robust age verification and restrictions on marketing and promotion (Greenhalgh, Scollo and Winstanley, 2021). While traditional cigarette websites generally require age-verified accounts for entry, a study by O'Brien, Navarro and Hoffman (2018) found that most e-cigarette websites only required having an account for making purchases. Several studies in New Zealand also cited that most online retailers did not require age verification and most did not mention addiction or health effects (Gurram, Thomson, Wilson and Hoek, 2019; Hardie, McCool and Freeman, 2021).

According to a 2016 US Surgeon General report, use of social networking sites (SNSs) to buy e-cigarette brands for marketing is increasingly prevalent, due to their ability to reach teenagers and young adults most susceptible to peer and media influence. Online sales make up a large portion of the entire market for both adolescents and adults; over one-third of teens who vape are estimated to purchase either online or in-store (Pepper, Coats, Nonnemaker and Loomis, 2019).

Caruana (2016) proclaims that 70 franchises were estimated to be promoting e-cigarettes in South Africa, primarily utilising the internet. Research has been undertaken in different countries to evaluate the marketing claims applied to promote e-cigarettes on the internet (Paek, Kim, Hove and Huh, 2014) since there are limited South African studies that

attempted to present an analysis of e-cigarette marketing claims online (Muposhi, and Dhurup, 2018). Such research is deemed to be of critical significance since, as Paek *et al*. (2014) pointed out, information found on the internet plays an important role in forming e-cigarette users' and non-users' perceptions and attitudes.

Luo *et al.* (2014) examined what content people are being exposed to on YouTube concerning e-cigarettes by evaluating the amount, representation and reach of e-cigarette videos. The study established that most of the e-cigarette information on YouTube promotes vaping and rates vaping as socially acceptable. The top three most popular types of videos were promotional videos created by e-cigarette companies, user sharing videos created by customers and product review videos created by suppliers. Concerning the topics reported in these "pro" e-cigarette videos, the majority argued that e-cigarettes were healthy compared to tobacco cigarettes and included scenes displaying that vaping was pleasant or socially acceptable. The study also found that compared to "anti" e-cigarette videos, "pro" e-cigarette videos are viewed more often and rated better. Luo *et al*. (2014) also noted that e-cigarette products generally appear in several flavours, colors, fancy packaging and those with mythical cartoon characters that attract the youth. The e-cigarette industry also uses well-known people to endorse their products (Ganz *et al.*, 2015; Hansen *et al*., 2018; McCausland *et al*., 2019; Pokhrel *et al*., 2015a).

McCausland *et al*. (2019) conducted a similar study that sought to determine and explain the messages displayed on social media that are linked with e-cigarettes. The study identified that various fundamental marketing strategies were being employed by commercial social media accounts. These included using popular hashtags that allowed marketing messages to "piggyback" on trending topics and expand diffusion reach, the use of fake user accounts to spread spam, positive perspectives, the offer of product giveaways and discounts. The use of social media marketing and networking initiated by the e-cigarette industry might have assisted in the rapid increase in e-cigarette popularity. McCausland *et al.* (2019) also suggested that the absence of social media regulations might be contributing to an ever-growing role in the dissemination of e-cigarette products and pro-vaping messages.

3.4.2 Strategic placement of vape stores

Cheney, Gowin and Wann (2015) pointed out that point of sale e-cigarette stores displayed e-cigarette products in clear cases to catch customers' attention. There are shops that show advertising material that advertise e-cigarettes as a healthier alternative. These advertising materials could spread misleading information regarding the health and safety of these products (Tan and Bigman, 2014). In a study conducted by Wagoner, Song, Egan, Sutfin, Reboussin, Spangler and Wolfson (2014), the presence of e-cigarette advertising near college campuses in North Carolina and Virginia tripled on store exteriors and quadrupled in store interiors in just one year.

A 2021 study showed strategic placement of e-cigarette shops was used as a form of promotion and advertisement. Agaku, Egbe and Yusuf (2021b) conducted a study on 240 vape shops in South Africa and geo-coordinates of the recognised e-cigarette shops were connected to the individual-level data of 18,208 participants in a 2018 web survey of South African adults. Agaku *et al.* (2021b) utilised logistic regression to quantify the relationship between proximity to e-cigarette shops and tobacco-related behaviours. The researchers identified that e-cigarette shops were grouped around universities and most were established within the past five years. Results showed that half of the vape shops were inside a 5km radius of a university, 39% of stores were inside a 10km radius of a university campus and 65% were inside a 20km radius. Proximity to e-cigarette shops was related with ever e-cigarette use among young adults aged 18-29 years. Proximity of e-cigarette shops to those aged 18-29 years was associated with positive perceptions and ever use of e-cigarettes. The study observed that living close to e-cigarette shops was linked with using an e-cigarette in the past or currently.

Giovenco, Casseus, Duncan, Coups, Lewis and Delnevo (2016) conducted a similar study in New Jersey, US, that came to the similar conclusion that e-cigarette shops near schools was positively linked with use of e-cigarettes. Giovenco *et al.* (2016) also noted the point-of-sale environment around schools may contribute to e-cigarette use among youth. Barnoya, Monzon, Pinetta, Grilo and Cohen (2021) examined point-of-sale marketing of e-cigarettes in two of the largest cities in Guatemala. The authors found that e-cigarettes were readily available and strategically placed to reach children and, in most stores, e-cigarette products were found near candy. Agaku *et al.* (2021b), Giovenco *et al.* (2016) and Pinetta *et al.* (2021) suggested that these significance discoveries justify the regulation of lifestyle marketing

focused on adolescents and young adults and the limitation of access to these products by adolescents.

Product placement in film, TV and music videos provides large reach for e-cigarette companies, especially to adolescents and young adults, and can serve to normalise and glamorise e-cigarette use and link it with inspirational celebrities. One investigation discovered that few official music videos from the Billboard Hot 100 featured e-cigarette product placement and imagery. Although such placement showed up in a generally low number of videos, they had collectively received billions of views. Hip Hop videos were the most likely genre to include e-cigarette product placement, while the predominant theme of videos was Image/Lifestyle/Sociability (Escobedo, Rosenthal, Saucier, Unger, Cruz, Kirkpatrick and Allem, 2021). There are also many examples of characters in television shows (Farley, 2018; Freeman and Watts, 2021) and movies (Lee, 2017) using e-cigarettes.

Majmundar, Unger, Cruz, Kirkpatrick and Allem (2021) conducted an online survey on young adults (18-24 years of age) residing in California. The study examined the relationship between self-reported levels of exposure to music videos with any e-cigarette product placement or imagery and susceptibility to e-cigarette use. Majmundar *et al.* (2021) reported that participants exposed to any e-cigarette product placement or imagery in music videos were more likely to report lifetime e-cigarette use compared with participants with no exposure.

3.4.3 Pricing discounts and specials and loyalty programmes

E-cigarette companies have used a scope of giveaways, promotions and discounts in order to advance their items. Various reports include comprehensive examples of e-cigarette companies offering free samples of their products to adolescents (Chapman, 2021; Doward, 2020). In 2020, Vype (an e-cigarette owned by BAT) had 30 days of giveaways on its Instagram page, including prizes such as headphones, trainers and sunglasses (Vype, 2020).

A content analysis of e-cigarette retail websites by Grana and Ling (2014) found that 80% of websites indicated a discount or sale, while Huang, Kornfield, Szczypka and Emery (2014) found that 34% of commercial tweets referenced the words “price” or “discount.” Both Facebook and Twitter give companies and brands the chance to offer discounts and online vouchers (blu™, n.d.; Vapor4Life, n.d.). In a study of online e-cigarette retailers, 28% of the

websites offered a promotion such as a discount, free products, or a loyalty programme (Williams, Derrick, Liebman and LaFleur, 2018). Without age restrictions or age confirmation on the websites adolescents can get access to these websites easily and thus acquire the discount or vouchers (Williams *et al.*, 2018).

A cross-sectional investigation of Twitter that analysed more than 73,000 tweets accessed through a licensed Twitter data provider over a two-month period in 2012, found extensive marketing of e-cigarettes (Huang *et al.*, 2014). Most e-cigarette content during this period was advertising and promotion. In fact, 90% of the tweets included commercial content such as branded promotional messages or hyperlinks to business websites, and only 11% was recognised as being independent (not sponsored), demonstrating people's experiences or opinions, or being linked to non-promotional content. Commercial tweets frequently included sales and price discounts (Huang *et al.*, 2014).

Jo, Kornfield, Kim, Emery and Ribisl (2016) conducted a study using 2,847 tobacco-related tweets about price discounts and vouchers. They found that e-cigarettes, not traditional cigarettes, were the most mentioned product (90%), and about one-third of all e-cigarette-related tweets included a discount code. Cheney *et al.* (2015) examined the marketing strategies for local e-cigarette shops in a large metropolitan region in Oklahoma. The results concluded that most e-cigarette shops offered discounts to students and faculty of local universities, especially those found near a school. Owners described advertising on campus, buying ads for digital signage at the stadium for sports matches, putting adverts in the school-sponsored cellphone application and targeting malls, restaurants and bar areas close to universities on the weekends by placing flyers on cars.

García, Sidhu, Allem, Baezconde-Garbanati, Unger and Sussman (2016a) introduced the first study to examine the marketing practices of vape shops across ethnic communities in the USA. The findings show that e-cigarette stores frequently give free samples to their customers, with this practice most common in the Korean and non-Hispanic white group. The study also found that a large majority of e-cigarette stores permitted their customers to have samples containing a moderate level - 6-10 mg/ml - of nicotine (García *et al.*, 2016a; García *et al.*, 2016b). Cheney *et al.* (2015) noted in their study that free samples attract new and returning customers to vape shops.

3.4.4 Fruity and kid-friendly flavours

When it comes to e-cigarettes specifically, they can be promoted with a greater number of flavours than tobacco cigarettes. According to Vasiljevic, Petrescu and Marteau (2016), e-cigarettes are advertised in 7,764 distinct flavours. Especially concerning is the utilisation of candy-like flavours (e.g. bubble gum, milk chocolate, cotton sweets) utilised effectively in the past to draw children to tobacco smoking (WHO, 2007). According to the Truth Initiative (2018), 43% of young people who had never utilised e-cigarettes before attempted their first one because of appealing flavours. Middle schoolers who use e-cigarettes and vape additionally report that their number one flavours were fruits, candy, desserts and other sweets, respectively.

Figure 3.1 E-liquid flavours

Source: Truth Initiative (2021).

The wide scope of sweet flavours is one of the most commonly cited reasons for e-cigarette experimentation among children, along with curiosity (Measham, O'Brien and Turnbull, 2016; Kong, Morean, Cavallo, Camenga and Krishnan-Sarin, 2015; Harrell, Weaver, Loukas, Creamer, Marti, Jackson, Heath, Nayak, Perry, Pechacek and Eriksen, 2016; Pepper, Ribisl and Brewer, 2016; Hilton, Weishaar, Sweeting, Trevisan and Katikireddi, 2016).

Similarly, Kinouani, Leflot, Vanderkam, Auriacombe, Langlois and Tzourio (2020) noted that young adults cite curiosity and flavours as common reasons for experimenting with e-cigarettes. Flavoured e-cigarettes seem to inspire more prominent allure and interest in

purchasing and attempting e-cigarettes than advertisements for non-flavoured products. Meernik, Baker, Kowitt, Ranney and Goldstein (2019) conducted a quantitative study that examined the impact of flavours in e-cigarettes on perceptions and use. Results showed that flavours in e-cigarettes decrease harm perceptions and increment eagerness to attempt e-cigarettes. Among adults, e-cigarette flavours increase product appeal and are a main reason many adults use e-cigarettes. The role of flavoured e-cigarettes in smoking cessation remains unclear.

Measham *et al.* (2016) conducted a multi-method study in England that explored young people's attitudes and behaviours to cigarettes and e-cigarettes. The study found that young people utilised e-cigarettes essentially for flavour blends and to perform "tricks"; smoking cessation was a less significant motivation to use e-cigarettes. Many of the young people who participated in the study reported weekly use of e-cigarettes or vape products and said they normally bought a few flavoured e-fluids or vapours all at once, often from local shops or retail outlets offering multi-purchase discounts.

Candy, fruit and menthol-flavoured e-cigarettes appeal to the youth more than tobacco or alcohol-flavoured e-cigarettes (Pepper *et al.*, 2016). Given adolescents' interest in trying e-cigarettes with certain flavours, policymakers ought to consider restricting marketing promoting flavoured products via channels that reach large numbers of young people. Considering that flavours assume a significant part in expanding the allure of products, restricting the accessibility and advertising of flavoured products via channels that are available for a large number of young people might diminish appeal. Chen *et al.* (2017) and Gendall and Hoek (2021) proposed that legislative efforts to ban e-cigarettes with child-friendly flavours ought to be improved.

3.4.5 Marketing tactics during Covid-19

While the Covid-19 pandemic highlighted the vulnerability of the world's population to severe respiratory infection, e-cigarette industries found various ways of getting around public health measures that restricted access to non-essential products and exploited the context for their own commercial ends (WHO, 2021).

A research article by Ramamurthi, Chau and Jackler (2020) claims that e-cigarette manufacturers have been exploiting the Covid-19 pandemic to promote the selling of e-cigarette products. The study presents examples of advertisements that encourage e-cigarette

products as a means of handling stress during the pandemic, with ad messages such as “Stay Home & Vape”, “Keep Calm and Stay Home”, using social media posts to promote the use of e-cigarettes as ideal companions for those working from home (WHO, 2021). Some e-cigarette producers offer complimentary gifts with e-cigarette purchases of essential supplies like hand sanitiser, branded facemasks and toilet paper. By associating vaping products with the Covid-19 pandemic e-cigarette producers are indirectly implying a health benefit of their products. For instance, US Bidi Vapor claimed on Instagram that “A bidi stick a day keeps the pulmonologist away” (Horel and Keyzer, 2021).

3.5 Packaging as an advertising tool in e-cigarette marketing

Packaging was created to store, secure, distribute, transport and contain the product, as well as to create useable appeal for customers and businesses. However, the real scope of packaging is far more extensive as packaging additionally determines and reveals the qualities of the product, casts brand values and distinguishes the product from its opponents. Furthermore, regarding the practical functions, research suggests that packaging is a significant element of the overall e-cigarette marketing strategy. By employing the same strategies used by manufacturers of other consumer products, e-cigarette packaging is utilised to promote the product (Ferraro, Bettman and Chartrand, 2009). For instance, Kotler and Keller (2012) noted that packaging is the consumer’s first encounter with the product and good packaging attracts the buyer and motivates product choice. Packaging may serve as a “five-second commercial” and is utilised to “convey persuasive information”.

Many leading e-cigarette marketers use visual or highly visible eye-catching packaging, comprising of high-quality plastic folding boxes, which makes it attractive while offering as much information as possible (Connolly, 2016). Generally, the packaging environment of e-cigarette products is less restrictive; currently in South Africa e-cigarette packaging is not regulated (WHO, 2021), allowing e-cigarette manufacturers to make statements and use packaging to communicate their brand and product differentiation.

Figure 3.2 E-cigarette packaging vs traditional cigarette packaging

Source: Vape King (n.d.).

3.5.1 Packaging design elements

The relationship between consumer buying behaviour and the packaging design elements of products has been noted in previous studies (Abdelaziz *et al.*, 2021; Ghosh, 2016; Silayoi and Speece, 2007). Packaging design elements, especially the graphics, act as a significant specialised communication tool used to satisfy consumers' information needs about product characteristics (Cahyorini and Rusfian, 2012). Likewise, Poturak (2014) confirmed that packaging design elements such as colour, printed information, background image and packaging materials might impact customers' buying behaviour.

According to Hamdar, Al Dana and Al Chawa (2018), packaging updates and redesigns can have an instant impact on sales. It has been demonstrated that packaging influences consumers' perceptions of products and their buying decision. For instance, Venter, van der Merwe, de Beer, Kempen and Bosman (2011) show that packaging provides virtual stimuli to

potential consumers, which is essential to attract their attention and shape perceptions of product quality, while Fraser (2018) linked aesthetic packaging with consumers' purchasing intentions.

Al-Samarraie, Eldenfria, Dodoo, Alzahrani and Alalwan (2019) found that packaging contents like graphics, colours, country of birth and label information were the most important factors that influence consumers' purchasing decisions. Cohn, Johnson, Abudayyeh, King and Wilhelm (2021) suggest that colours and descriptors on e-cigarette packaging influence perceptions of appeal, harm and addictiveness.

Laverty, Vardavas and Filippidis (2016) suggested that the seemingly greater receptivity of the youth to design and packaging features highlights discoveries from tobacco smoking and shows the significance of e-cigarette promotion. This has been noted to show the comparable themes of independence, as previously done in tobacco adverts.

3.5.1.1 Graphics

Product graphics typically comprise of the general layout, colour combination, typography and product photography (Silayoi and Speece, 2007). The qualities of a package's graphical design have the potential to appeal to the consumer's aesthetic sense and stimulate their interest in a product. This also increases the chances of a purchase (Grewal, Hmurovic, Lamberton and Reczek, 2019).

Manufacturers of e-cigarette-related products are utlising cartoons as a marketing technique, despite restrictions on cartoon marketing for combustible cigarettes (Kirkpatrick, Cruz, Unger, Herrera, Schiff and Allem, 2019). The utilisation of cartoons in tobacco product promotions has been notably effective in previous years. For instance, past examination in youngsters, youths and young adults demonstrates that the animation character Joe Camel (created by RJ Reynolds as a mascot for its image) was successful at raising awareness and appeal of combustible cigarettes, as well as expanding uptake and proceeded with utilisation of these items (DiFranza, Richards, Paulman, Wolf-Gillespie, Fletcher, Jaffe and Murray, 1991).

Figure 3.3 Joe Camel mascot

Source: Campaign for Tobacco-free Kids (2013).

Blu™ e-cigarettes has included a cartoon pitchman named "Mr Cool" in their site. It was suggestive of the Joe Camel cartoon character that effectively marketed cigarettes to the youth during the 1990s.

Figure 3.4 E-cigarette blu™ cartoon Mr Cool vs Joe Camel traditional cigarette cartoon in the 1990s

Source: Campaign for Tobacco-free Kids (2013).

Allem, Cruz, Unger, Toruno, Herrera and Kirkpatrick (2019) identified that many e-juice manufacturers and vendors use cartoons in their logo designs (see Figure 3.5), suggesting that

cartoon imagery is integral to the companies' brand recognition strategy. Abdelaziz, Owusu-Amankwah and Ihuhwa (2021) examined the influence of youth-directed packaging ('kiddie' and cartoonish) on the sale of e-liquid products. The findings pointed out that e-liquids with youth-directed packaging sell better in contrast to e-liquid products with no youth-directed packaging. Abdelaziz *et al.* (2021) further note that the marketing of these products gives a no or low harm effect perception to their users. The promotion of e-cigarettes with different flavours such as fruit, candy and mint diminishes the health hazards associated with these products and instead highlights possible pleasant experiences with these products making them attractive to the youth.

Kirkpatrick *et al.* (2019) assessed the influence cartoon-based marketing has on e-cigarette use. The study supported findings by Abdelaziz *et al*. (2021) that exposure to cartoon-based advertising of e-cigarette products might be associated with a potential increase in e-cigarette use. Cartoon-based marketing illustrations were associated with an increased probability of e-cigarette use. Cartoon-based illustrations were positively linked with two perceived advantages, which were social facilitation and enjoyment of taste.

Figure 3.5 Cartoon-based South African E-liquids

Source: Vape King. (n.d.).

3.5.1.2 Colours

Colour is a crucial element of product packaging and it is a powerful marketing tool that impacts consumer buying choices (Kumar, 2017). It creates moods, causes customers to notice a product and emphasises its quality. Keller (2009) asserts that colour is a significant visual variable for product packaging and offers a specific level of uniqueness to the product brand.

Colour psychology has demonstrated that individuals attach meanings and emotionally respond to colour, with colour associations shared among people from similar geographical and cultural backgrounds (Ford, 2014; Madden, Hewett and Roth, 2000; Poturak, 2014). For example, heterosexual men will quite often report that red outfits improve female allure, while heterosexual females deny any outfit colour affecting that of men (Kumar, 2017). Every colour causes various meaning according to the consumer perception. For instance, cigarette smokers mistakenly associate lightly coloured packages with reduced harm (Ford, 2014).

Colour is a vital component of design because of the way that it is typically striking and memorable. The package colour can essentially affect buyers' capacity to perceive a product. Brand recognition is the shopper's capacity to recognise or connect a product with a brand. Colour is, hence, considered to be a fundamental piece in planning the visual personality of the brand and for brand communication (Kauppinen-Räisänen, 2014). The study by Kauppinen-Räisänen (2014) states that packaging colours and brand colours remain closely connected. Instances of the significance of colour in brand affiliations are organisations like Kodak with their signature yellow and Coca-Cola's unmistakable red. The result is that these organisations are effectively recognisable around the world.

Cohn, Johnson, Abudayyeh, King and Wilhelm (2021) examined the influence of flavour, colour and descriptors of e-cigarette packages on young adults' perceptions. The study concluded that colours and descriptors on e-cigarette packaging influence product attractiveness and harm perceptions. Cohn *et al.* (2021) found that menthol e-cigarette packages were rated as more "attention-grabbing," "appetising" and "fun to use". Participants reported low e-cigarette harm perceptions to e-cigarettes that were rated "attention-grabbing," "appetising" and "fun to use". The authors further explained that individuals exposed to packages in colour in contrast to those in black and white reported lower perceptions of harm and addictiveness and reported greater product appeal.

3.5.1.3 Packaging technology

The drive for upgraded individual fulfilment has prompted innovative packaging procedures that are useful to consumers and producers (Kotler, 2002). As indicated by Silayoi and Speece (2004), customers are prepared to pay more for items with innovative packaging features. Hence, innovation encapsulated in product packaging can assist with educating marketers about buyers' discernments regarding product quality, time span of usability, maintainability and safety. Silayoi and Speece (2007) reported that packaging technology can significantly impact customers' purchasing behaviours. It is presumed that when product characteristics are pertinent to customers' preferences, they would be able to make their buying decision faster. This is supported by Wyrwa and Barska (2017), who stated that consumers commonly prefer packaging technology that gives sturdiness.

Lien Design created a line of products for RĒL VAPE; the design was created to not only be visually pleasing, but also practical with its own reusable base.

Figure 3.6 RĒL Vape packaging design

Source: Creative Pool (n.d.).

Blu™ created packs of e-cigarettes called "smart packs" (Figure 3.7) with sensors that tell consumers when other e-smokers are close by. At the point when they get inside 50 feet of each other, the packs vibrate and streak a blue light (Royal College of Physicians, 2016). The reusable packs, which act as a charger for the cigarettes, can be set to trade data about their owners, similar to contact information on social networking sites, which can be downloaded

onto PCs. The packs additionally advantageously vibrate when a smoker approaches a retail outlet that sells blu™ cigarettes (Brustein, 2011).

Figure 3.7 Blu™ cigs smart pack

Source: Crook, J. (2011).

Subsequently, in 2015 and 2016, Reynolds presented VUSE gadgets that included Bluetooth innovation. Reynolds portrayed its new gadget as "sleek and sophisticated" and noted that it is taking advantage of the arising pattern of 'The Internet of Things,' flawlessly associating ordinary actual gadgets to the universe of cellphones, PCs and tablets (RJ Reynolds Vapor Company, 2016). In 2017, BAT acquired the whole company and its VUSE range of e-cigarettes (Tobacco Tactics, 2022).

Through this innovation, e-cigarette organisations can use client information for advertising, prolong and improve a consumer's compulsion by controlling puff-by-puff nicotine conveyance and gather information on usage patterns of all users. E-cigarette companies can likewise screen the utilisation of flavours and other item changes that draw in and keep up with users to forestall quitting.

3.5.1.4 Label information

Label information aids as a verbal communication element that assists to communicate information about a product to customers (Kotler, 2022; Ribeiro, Carneiro, De Melo Ramos, Patterson and Pinto, 2018). It includes cognitive processes (transfer information), which might persuade an individual's emotions (affective) and actions (behavioural). Information

can be gathered into semantic and non-semantic data. Semantic data incorporates the presence of clear information about the product name, usage warning and purpose. On the other hand, non-semantic information comprises of a suited colour combination for easy reading, a fitting text style and cautioning colours (Wyrwa and Barska, 2017). Moreover, non-semantic information can possibly cause disarray for buyers, since label information can have either an excessive amount of information or too little information, or can contain incorrect information which is misdirecting (Silayoi and Speece, 2004).

Kong, Derrick, Abrantes and Williams (2018) examined the shipping, packaging and product features of a wide assortment of e-cigarettes bought online by youth and adults. Product packages were evaluated for external and interior packaging features such as health warnings and product information, and a total of 125 orders were analysed. The study found that product content was seldom stated outside the packaging; only 44.6% of orders included health warnings, 60% of products provided product information and some products had unsupported claims. Some products claimed to be an effective cessation device or a recommended form of nicotine replacement therapy (NRT), even though e-cigarettes are not an FDA approved form of NRT. One product included a false claim that the WHO recommended their product as a form of NRT. Other claims such as 'freedom to smoke anywhere' and 'free of tar and other carcinogenic substances' marketed e-cigarettes as healthier alternatives to traditional cigarettes. Consistent with previous literature, many claims were empirically unsupported.

3.5.1.5 Warning labels on e-cigarette packaging

A warning can be defined as a specific class of displays to warn customers about certain risks or harms of using a product (Andrews, 2011, p. 150). A warning can influence consumers' views concerning harm perceptions with product use, but warnings do not necessarily impact all user groups consistently (Berry, Burton and Howlett, 2017). Currently, in South Africa, Health warnings on e-cigarette packaging are required by law (GSTHR, n.d.).

When designed adequately, warnings regarding risks associated with cigarette smoking have decreased the craving to smoke, increased perceived risks of cigarette smoking and reduced intention to buy cigarettes (Sanders-Jackson, Schleicher, Fortmann and Henriksen, 2015). Although extensive research has been conducted on tobacco labelling (Noar, Hall, Francis,

Ribisl, Pepper and Brewer, 2016), research on e-cigarette labels and their influence on the youth is just emerging. There have been few studies that have investigated the influence of health warnings and flavours on how young people perceive e-cigarettes and e-cigarette warning labels.

Sanders-Jackson *et al*. (2015) examined whether and how warning statements affect young adults' perceptions of televised advertisements for e-cigarettes. The findings suggest that exposure to health warnings was linked with reduced cravings for e-cigarettes amongst e-cigarette users who have experienced cravings before and reduced intention to purchase amongst all participants. Participants who had witnessed industry-themed warnings had reported increased harm perceptions but ranked e-cigarettes as less addictive compared to traditional tobacco cigarettes. Similarly, Katz, Shi, Erkkinen and Hatsukami (2020) found that whether it is people who have tried e-cigarettes in the past or those who have not tried e-cigarettes, the greater the risk, the less likely it is for young people to use e-cigarettes. Katz *et al*. (2020) demonstrated that adding health and risk warnings will result in a lower willingness to use the product through enhanced counter-arguing and risk perception. Wackowski, Hammond, O'Connor, Strasser and Delnevo's (2016) qualitative study found that several current e-cigarette smokers recognised that several warning messages may be significant, but notably for some participants, warning messages would not personally make them quit e-cigarette use.

3.6 Conclusion

This chapter has presented the review of the literature, previous research is essential to provide insight into the use of e-cigarettes by young adults, taking into consideration their experience through the use of e-cigarettes. It is also important to consider the context in which each of these studies was conducted as this review included results from studies in both South Africa and globally; policies may differ and individual cultural contexts around e-cigarette use may have affected the outcomes. The literature has been presented based on the research objectives and questions.

Chapter four will introduce the reader to the other elements pertinent to this study, including young adults' perceptions of e-cigarettes as a smoking cessation device, e-cigarette risk perception, perceptions of and attitudes toward e-cigarettes, perceptions of e-cigarette regulations and young adults' perceptions of e-cigarette regulations.

CHAPTER 4: Perceptions and attitudes of Generation Z towards e-cigarettes

4.1 Introduction

There has been controversy over the safety and efficacy of e-cigarettes. Young adults' perceptions and attitudes towards e-cigarettes continue to be shaped by various factors, for instance, social or individual factors. According to Mhazo (2019), e-cigarette marketing plays a significant role in shaping young adults' perceptions and attitudes toward e-cigarettes. Glantz and Bareham (2018), noted that a common misconception about e-cigarettes is that smoking e-cigarettes are safer than smoking traditional tobacco cigarettes. E-cigarettes have been marketed as devices that can be used as a substitute for tobacco cigarettes, which will help people quit smoking traditional tobacco cigarettes (Pepper, Ribisl, Emery, and Brewer, 2014). This chapter will provide insight into young adults' perceptions of e-cigarette products concerning their effectiveness as a smoking cessation, safety, and regulations.

4.2 Young adults' perceptions of e-cigarettes as a smoking cessation device

E-cigarettes are marketed as a substitute for traditional flammable cigarettes. For current and former smokers, the most commonly cited reason for using e-cigarettes is the health benefits compared to traditional cigarettes, followed by helping to quit smoking. E-cigarettes are considered as potential smoking cessation devices, even though e-cigarettes have not been approved by major health organisations as an aid to quit smoking (Ghosh and Drummond, 2017, Muposh and Dhurup, 2021).

The Surgeon General's Report (2020) on smoking cessation established that there is "inadequate evidence" to presume that e-cigarettes would promote smoking cessation. The National Academies of Sciences, Engineering and Medicine report [NASEM] (2020) recorded similar results, that there has been insufficient data on e-cigarettes and their effectiveness in promoting smoking cessation. Although some data endorsed the usage of e-cigarettes as a tool to promote smoking cessation, recent research suggests that its effectiveness in smoking cessation may be overstated (The Lancet, 2019).

Some research demonstrates that e-cigarettes that contain nicotine are associated with enhanced smoking cessation rates, compared to nicotine-free e-cigarettes. A systematic review, of 50 studies involving adult smokers in the US and other countries in 2020 conducted by Hartmann-boyce, Mcrobbie, Lindson, Bullen, Begh, Theodoulou, Notley,

Rigotti, Turner, Butler, and Hajek (2020) discovered that there's moderate data that nicotine e-cigarettes improve smoking cessation rates as opposed to nicotine replacement treatment or non-nicotine e-cigarettes. The study noted that nicotine e-cigarettes might assist more people to quit smoking compared to behavioural support alone or with no support. The NASEM report (2020) also proclaimed that regular use of e-cigarettes might increase an individual's probability to stop cigarette smoking.

Sutfin, McCoy, Morrell, Hoeppner and Wolfson (2013) studied university students from eight colleges in North Carolina and found that the use of e-cigarettes was not linked with intentions to quit smoking. The researchers noted that for more conventional cigarette smokers, college students using e-cigarettes did not appear to be driven by the urge to quit cigarette smoking. An online survey administered by Dawkins, Turner, Roberts and Soar (2013) also reported similar results as Sutfin *et al*. (2013). The authors found that the motivation for e-cigarette use was mixed; 40% of participants stated a desire for a "partial alternative" to cigarette smoking as a reason to vape, while 66% of participants cited that they desired a "complete alternative", again suggesting that while majority use is used for smoking cessation, a significant proportion is for leisure.

Mhazo (2019) conducted similar research with the aim to qualitatively examine young adults' awareness and perceptions of e-cigarettes. The study focused on students from the University of Cape Town in South Africa. The author found that the majority of the students in the study did not make use of e-cigarettes as a means to quit smoking when they began using e-cigarettes. The study suggested that this may be because the majority of participants began smoking e-cigarettes while they were still in school and below the legal age. Results showed that the main reason why participants began vaping was out of curiosity.

Three other studies found similar results, that smoking cessation was not associated with e-cigarette use (Amato, Boyle and Levy, 2017; Weaver, Huang, Pechacek, Heath, Ashley and Eriksen, 2018; Wu, Wang, Li, Kwong, Lai and Lam, 2018). Two further studies found that e-cigarette use was not linked with smoking cessation among current e-cigarette users and those that are heavily dependent on nicotine. However, e-cigarette consumption was linked with a greater likelihood of a smoking relapse rather than smoking cessation and reduced cigarette use (Selya, Dierker, Rose, Hedeker and Mermelstein, 2018; Young-Wolff, Klebaner, Folck, Tan, Fogelberg, Sarovar and Prochaska, 2018).

In contrast, some studies observed positive associations between e-cigarette smoking cessation and reduced cigarette use. Mantey, Cooper, Loukas and Perry (2017) explored the association between the use of e-cigarettes and subsequent cigarette smoking behaviour at six monthly follow-ups among young adults in 24 Texas colleges. The authors found that participants who cited using e-cigarettes to quit smoking had better odds of cessation at six and twelve-month follow-ups, compared to participants citing e-cigarette use for other reasons which included experimenting with new technology and flavours like bubblegum and cherry.

Barbeau, Burda and Siegel (2013) reported similar results in a qualitative study using focus groups. Findings suggest that among participants, five themes appeared that identified why users view e-cigarettes as an effective smoking cessation device. Participants cited bio-behavioural response (e-cigarette smoking mimicked smoking a real tobacco cigarette), social benefits (vaping community), vaping for fun (users view vaping as a hobby rather than a quit smoking device), personal identity (the advantage of redefining your identity from 'smoker' to 'vaper') and the difference between nicotine cessation and smoking cessation (where participants wanted to quit cigarette smoking but some did not want to quit nicotine, e-cigarettes were viewed as a safer alternative).

Berry *et al*. (2018) used nationally representative data from the Population Assessment of Tobacco and Health (PATH) Study waves 1 (2013-2014) and 2 (2014-2015) to examine the link between e-cigarette use and smoking cessation in the USA. The study revealed that between wave 1 and wave 2, approximately 7% of current cigarette smokers that did not use e-cigarettes quit cigarette smoking. The researchers found that vapers were eight times more prone to cease smoking for almost 30 days than non-users, especially when using second and third generation e-cigarettes. In comparison to non-e-cigarette users, smokers who started vaping on a daily basis but did not quit smoking were six times more likely to reduce their cigarette consumption on average daily by at least 50% between both waves. These results indicate that including e-cigarette frequency is important for an in-depth comprehension of the relationship between vaping and smoking cessation. This study is investigating the relationship between vaping and smoking cessation based on frequency of e-cigarette use - indicating that vaping and e-cigarettes are not synonymous.

However, since most of these studies were carried out in Europe and North American contexts, the evidence cannot be generalised within a South African context.

4.3 E-cigarette risk perception

Several studies have found that participants have different responses to the perception of e-cigarette risks. Some people claim that the use of e-cigarettes is safer compared to tobacco, while other studies believe that e-cigarettes are more harmful than their tobacco alternative as the effects of e-liquid chemicals are unknown (Glantz and Bareham; 2018, Hajek *et al*., 2014; Sutfin *et al*., 2013). This demonstrates the current scientific status of the use of e-cigarettes concerning limited knowledge of the long-term health risks associated with them (Callahan-Lyon, 2013; Qasim *et al*., 2017; McNeill *et al*., 2015; Truth Initiative, 2021; Wasowicz *et al*., 2015).

Most e-cigarette users and young people who are familiar with e-cigarettes seem to believe that they are the safer option, less addictive than the traditional tobacco cigarette and can help smokers quit smoking (Griesbach and Platts, 2016; Mhazo, 2019; Wagoner, Cornacchione, Wiseman, Teal, Moracco and Sutfin, 2016; Zhu *et al*., 2014). One of many reasons why the e-cigarette is considered safer than the tobacco cigarette is because it does not contain many toxins and carcinogens that are found in a tobacco cigarette (Egbe *et al*., 2020; Gaur and Agnihotri, 2018; Rubinstein *et al*., 2018). Studies have shown that the marketing of e-cigarettes aims to allow possible users to regard the e-cigarette as a safer alternative to cigarettes or as a smoking cessation tool. However, there has been limited empirical evidence associating young adults' exposure or susceptibility to e-cigarette marketing and the perception that e-cigarettes are a less harmful alternative to tobacco cigarettes (Pokhrel *et al*., 2015a). This study aims to address this gap as such evidence could encourage the development of effective e-cigarette regulations.

Griesbach and Platts (2016) conducted a qualitative study that found that the most common view cited by participants was that the use of e-cigarettes is safe or, at least, less harmful than traditional tobacco cigarettes. Participants who expressed such views believed that e-cigarettes do not contain or contain fewer toxins than traditional tobacco cigarettes, and in some cases, participants argued that e-cigarettes do not contain tar. The view that e-cigarettes are less harmful than traditional tobacco cigarettes, but are "not completely safe" was often associated with a lack of information. In addition, discussions among participants often stated that the general feeling that inhaling substances into the body may be "unnatural" and therefore unhealthy. Participants frequently cited that their uncertainty was due to a lack of

information. They stated that they did not have enough information or did not currently have enough evidence to conclude the safety of e-cigarettes.

Wagoner *et al*. (2016) found similar results, that adolescents and young adults perceived the use of e-cigarettes as being a safer alternative to traditional tobacco cigarettes. Adolescents and young adults reported that e-cigarettes do not generate second-hand smoke; the dominant perception was that e-cigarettes produce water vapour. Participants perceived that the use of e-cigarettes would be safer than tobacco cigarettes. Wagoner *et al*. (2016) claim this might be due to the absence of regulations, e-cigarette marketing and uncertainty of ingredients in e-cigarettes.

Mhazo (2019) noted that young adults perceived the use of e-cigarettes as being a safer and healthier alternative to traditional tobacco cigarettes despite their lack of awareness about the chemical components of e-liquid. Thus, it was concluded that young adults do not base their perception on risk regarding the chemical components of e-cigarette liquid, but rather stated general properties of e-cigarettes like the pleasant smell they produce, costliness, and neatness as indicators of safety and health.

4.4 Young adults' perceptions of and attitudes toward e-cigarettes

Past studies have discovered both positive and negative perceptions of e-cigarettes, most of which focus on the views of minors and young adults' perceptions (Camenga *et al*., 2015; Mhazo, 2019; Wipfli *et al*., 2020). Given the proclaimed rise in e-cigarette use among this group, the focus on youth is not surprised (Muposhi and Dhurup, 2021). Collectively, these studies have concluded that the attractiveness of e-cigarettes is associated with aspects like social benefits (pleasant smell or no yellowing of teeth), novelty, new technology and flavours. Due to the insufficient research on the use of e-cigarettes within South Africa, furthermore it would be tricky to identify whether the use of e-cigarettes is related to these social viewpoints.

McQueen, Tower and Sumner (2011) held one-on-one interviews with a small group of e-cigarette users and pointed out a "culture of vaping" amongst adult users. Participants stated many benefits of using e-cigarettes over tobacco cigarettes, which included better breathing and restoring of sense of smell and taste. Barbeau *et al*. (2013) published comparable results, as participants mentioned the social benefits of using e-cigarettes and the power to redefine

their identity from “smoker” to “vaper”. Being referred to as a “vaper” is seen to be more socially acceptable as there is a social stigma attached to being a “smoker”.

A qualitative study was conducted by Pokhrel, Herzog, Muranaka and Fagan (2015b) that aimed to discern the reasons why young adult e-cigarette users like and dislike e-cigarettes. Results indicated several dimensions of attractiveness such as health improvement from quitting tobacco cigarettes, pleasant smell compared to cigarettes which also allowed discreet smoking, sensory pleasure and self-regulation. Negative perceptions of e-cigarettes included fear of the unknown health risks linked with e-cigarette use, high expenditure of e-cigarette products and potential nicotine addiction. A longitudinal study by Biener and Hargraves (2015) reported that users most frequently cited bad breath, dry mouth and cracked lips as the negative effects of e-cigarettes.

Simmons, Quinn, Harrell, Meltzer, Correa, Unrod and Brandon (2016) qualitatively investigated users’ perceptions of e-cigarettes using a focus group; findings suggest that participants pointed to various facets of e-cigarettes’ appeal as opposed to other cessation therapy alternatives. These included fewer side effects, the power to control the e-cigarettes to suit one’s preference (nicotine intake, flavours, voltage) and the opportunity to evade the social stigma of being a “smoker” by identifying as a “vaper”. Few participants pointed out that vaping can be an inconvenient process, like charging batteries and making sure “their tank is full”, compared to the simplicity of smoking tobacco cigarettes.

Griesbach and Platts (2016) reported that the most common perceptions cited by young adults were that an e-cigarette was not a serious device that promotes cessation of smoking but rather that smoking one was a hobby to them and that the use of these devices was considered “cool” and looked fun to use and experiment with. The use of e-cigarettes has negative perceptions, which include participants reporting that e-cigarettes are not an effective smoking cessation tool; the views were expressed mainly by cigarette smokers. Participants listed many perceived failures of the use of e-cigarettes compared to traditional tobacco cigarettes such as they would not be enjoyable, they do not stop cigarette cravings and vaping causes “fuzziness” on the tongue and mouth. Mainly smokers of traditional cigarettes and users of e-cigarettes noted that the use of e-cigarettes felt like users were exchanging one addiction for another.

4.5 Young adults' perceptions of e-cigarette regulations

Regulation and policies also play a role in influencing young adults' perceptions, e-cigarette use and behaviours (Wagoner *et al*., 2016; Wipfli *et al*., 2020). Mhazo (2019, p.48) contended that the absence of e-cigarette regulation isn't just taken advantage of by marketers through selling e-cigarette products to adolescents, but it's additionally assumed a part in forming participants' perceptions of these products. In countries where there is little or no regulation of e-cigarettes, the use of e-cigarettes by some individuals is done in areas or situations where the use of traditional cigarettes is prohibited (Mhazo, 2019). In such instances, e-cigarettes are used to maintain smoking habits rather than reduce smoking. Wagoner *et al*. (2016) conducted a focus group study that sought to understand young adults' perception of e-cigarettes. The study aids in understanding the association between young adults' perceptions of e-cigarettes and the regulatory environment. The authors found that participants suggested that the absence of e-cigarette regulation implies that e-cigarettes are harmless and if they did pose a threat to health, this would result in these products being regulated in a similar way to traditional cigarettes. Mhazo (2019) reported similar results. While some people might translate the absence of regulation on e-cigarettes as a result of them being relatively new, due to the lack of regulation, others may be led to believe that these products are safe and harmless.

Wipfli *et al*. (2020) conducted a similar study using an online survey to understand university students' perceptions of e-cigarette regulation in the Asia-Pacific. The study found that in countries where the use of e-cigarettes had been regulated, students had become more mindful of e-cigarette products, which resulted in a higher probability of using e-cigarettes. The regulations may stem from a government acknowledgment of the growing prevalence of e-cigarettes in these countries. In contrast, in countries that banned e-cigarettes, students had negative perceptions towards e-cigarettes resulting in a low probability of them making use of e-cigarettes, even though they reported having access to them. It had been found that in countries where there is little or no regulation on e-cigarettes, students fell in the middle, with less positive attitudes towards e-cigarettes but with continued availability of e-cigarettes; this promoted acceptance to experimentation and use of e-cigarettes. The study noted that the uncertainty may be due to national policy disputes about e-cigarettes, wherein certain cases, advocates of e-cigarettes have gained prominence in the media as a harm reduction tool and influence over regulatory decisions. The results illustrated that e-cigarette bans are effective

in decreasing e-cigarette demand and possibly promoting negativity towards the use of e-cigarettes by students.

Griesbach and Platts (2016) reported that participants in their study suggested a general level of support for the regulation of e-cigarettes, either in product regulation or regulation of sale and use. Participants raised concerns about the lack of current regulation; some participants suggested that similar regulations should exist between e-cigarettes and traditional cigarettes. Overall, the participants advocated for better regulation of e-cigarettes, particularly concerning the sale of e-cigarettes to adolescents, advertising and device safety. It was also suggested by participants that high taxes on devices should be circumvented, as this could potentially encourage people to switch to traditional cigarettes.

4.6 Theory underpinning this study

Consumer perceptions and attitudes are created based on experiences as well as information received from word of mouth, peers, family and friends, as well as marketers that are held in one's memory (Kotler and Keller, 2012; Lappeman, Egan, Rightford, and Ramogase, 2021). Customer perceptions are shaped by opinions and beliefs, where the consumer starts to perceive that the attitude object (person, situation or thing) holds certain characteristics and acts of behavior would lead to outcomes. The opinions and beliefs are repeatedly reinforced and finally give rise to attitudes (Schiffman and Kanuk, 2010).

The desire to comprehend consumer attitudes and their relationship with customers purchasing behaviour has inspired psychologists to develop theories or models that capture the underlying dimensions of attitudes (Schiffman and Kanuk, 2010). Arnould, Price and Zinkha (2002, p.459) noted that attitude models elucidate how a consumer processes information that influences the choices they make. Cognitions and emotions are included in the consumer information process.

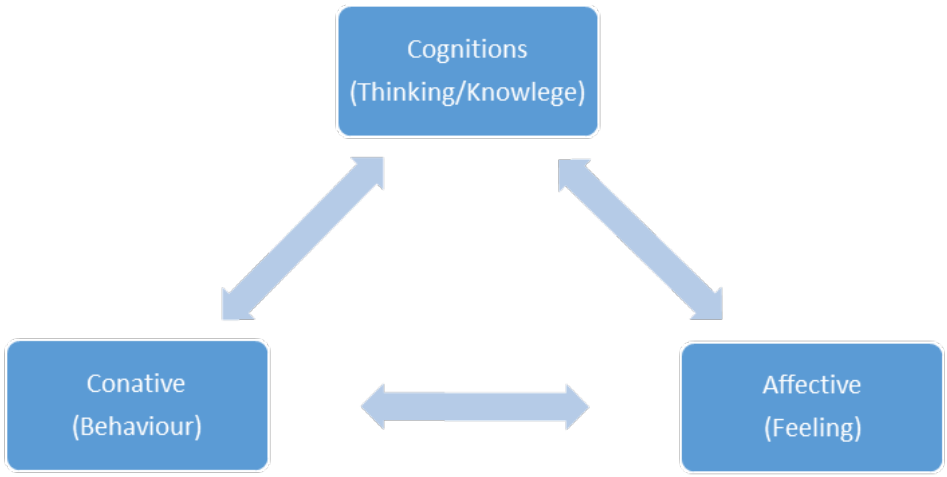
Eminent consumer attitude theories or models mentioned in literature include the theory of reasoned action, the theory of planned behavior, tri-component attitude model, attitude toward object model and hierarchy of effects model. However, for the purposes of this study the tri-component model was adopted. The various models mentioned above offer various perspectives on the attitude components and how these components are related but the tri-component model is the most significant as it measures attitudes which is ultimately influenced by perception. (Solomon *et al.,* 2019).

The limitation of these theories lies in their failure to acknowledge the complex relationships between individual thoughts, emotions and actions. This limitation is discussed by the tri-component attitude model which describes how people deliberately view situations and how they react to those situations (Rosenberg and Hovland, 1960). Nonetheless the tri-component attitude model is the basic model of consumer attitude (Assael, 2004; Arnould *et al*., 2002; Blythe, 2008; Makanyeza, 2014; Mohd-Nasir & Abdul-Rahim, 2020; Schiffman & Kanuk, 2010; Solomon, Bamossy, Askegaard, & Hogg, 2019). The tri-component attitude model is commonly used in the context of consumer marketing research to measure consumers' attitudes towards certain objects or products (Gerritsma and Vork, 2017).

4.6.1 Tri-component Attitude Model

The theoretical framework that will be adopted for this study is the tri-component attitude model. This model was established by Rosenberg and Hovland (1960) to define the ultimate effect of different external stimuli on the attitude and behaviour of individuals (Mohd-Nasir and Abdul-Rahim, 2020). The tri-component attitude model designates that attitude comprises of three main components, specifically cognition, affective and conation (Figure 4.1).

Figure 4.1: The tri-component attitude model



Source: Solomon (2019).

This model will be used in order to capture the three dimensions of attitudes, namely beliefs (cognition), feelings (affect) and intentions to buy (conation) as proposed by Assael (2004), Schiffman and Kanuk (2010) and Solomon *et al.,* (2019). According to Arifin, Khoir and Purwanto (2020), the cognitive component refers to knowledge, facts, beliefs and

assumptions about the product or object. For example: “I believe e-cigarettes are not an effective cession tool”. Cognitions relate to the knowledge and perceptions that are obtained by consumers through a combination of direct experience with the attitude product together with connected information from different sources (Schiffman and Kanuk, 2010). In this study the cognitions component was translated to determine how e-cigarette marketing influences the perceptions of Generation Z UKZN students towards e-cigarettes, as well as their beliefs about e-cigarettes. In order to better understand the influence of e-cigarette marketing on respondents’ perceptions, the study asked questions relating to what respondents think about e-cigarettes, whether they believed e-cigarettes are harmless or are a safer alternative to traditional cigarettes, or serve as a good smoking cessation tool.

The affective component comprises of an individual’s feelings or emotions regarding the attitude object (Chowdhury and Salam, 2015; Makanyeza, 2014). For example: “I don’t like e-cigarette products”. Assael (2004), Schiffman and Kanuk (2010) and Solomon *et al.,* (2019) concur that the affective component is explained as the feelings or emotions of consumers about a certain product or brand. They also view this component as the overall brand evaluation. A person’s positive feeling about e-cigarettes might lead them to conclude that smoking e-cigarettes would be a positive, pleasant and good experience. In marketing, Affect is consumer’s feelings towards various product/services or on different marketing activities relating to the overall attribute. Assessing consumer feelings depends on their positivity, that creates a response towards a particular product, eventually they have an influence on consumer purchase intention and the decision process (Sahney, 2019). This component helped translate how e-cigarette marketing and lack of e-cigarette regulations might lead Generation Z consumers to conclude that e-cigarettes are safe and that using e-cigarettes would be a positive, pleasant and exciting experience.

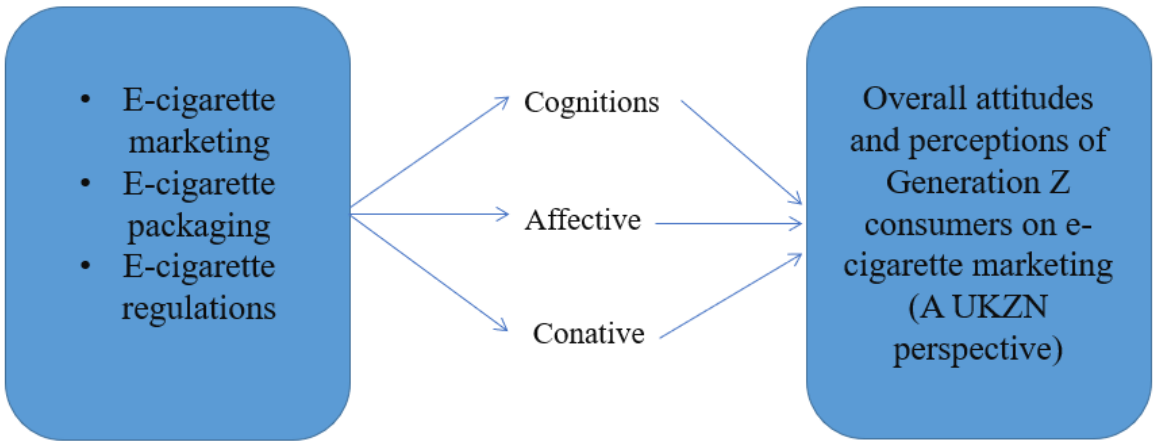
The third dimension of the study relates to the influence of innovative packaging on the use of e-cigarettes. Intention or certain action that persons take towards particular object is describe by behavioural or conative element. The conative component relates to the intention to buy, which is also known as behavioural intention (Assael, 2004; Chowdhury and Salam, 2015; Schiffman and Kanuk, 2010). The conative component is the consumer’s tendency to act towards a certain product or brand. In some interpretations, conation can relate to the behaviour itself (Schiffman and Kanuk, 2004). For example: “I will not purchase any e-cigarette products”. This component can also consist of personal opinions, perceptions, and

knowledge about a topic or subject. An individual's opinion may not be based on objective evaluation or may not be true, but it plays an important role in how the person perceives reality, and even in his/her attitude towards the object. This component helped translate whether e-cigarette marketing and packaging influenced UKZN Generation Z consumers to buy and use e-cigarettes. The component of "behaviour" was translated into questions relating to what respondents think about e-cigarette packaging; whether e-cigarette packaging grabbed their attention, whether they find e-cigarette packaging appealing and whether it lead them to try the product.

4.6.1.1 Conceptual framework

Ideas that generated from the previous literature were implemented to build a better understanding of the research questions. The area of interest is shown in Figure 4.2. This conceptual model is based on the tri-component model (Solomon,2019) of attitude which identifies the customer's feelings, belief and behavioral intention. Those three components will test and be used to measure the overall consumer perceptions and attitude towards e-cigarette marketing.

Figure 4.2 Conceptual model:



Based on the literature review, the researcher determined the following research aim of this study to fill the gap in the literature:

- **Research Aim**: To explore the perception and attitude of Generation Z UKZN consumers on e-cigarette marketing.

To achieve the research aim, three research objectives were established in accordance with the tri-component. The three research objectives (or research questions) correspond to affective, behavioural and cognitive components of attitude respectively:

- **Research Objective 1 (Cognitive):** To determine how marketing influences the perceptions of Generation Z UKZN students towards e-cigarettes. The equivalent research question is *"How does marketing influence the perceptions and attitudes of Generation Z UKZN students towards e-cigarettes? "*

In this study the cognitive component was translated to determine how e-cigarette marketing influences the perceptions of Generation Z UKZN students towards e-cigarettes, as well as their beliefs about e-cigarettes. In order to better understand the influence of e-cigarette marketing on respondents' perceptions, the study asked questions relating to what respondents think about e-cigarettes, whether they believed e-cigarettes are harmless or are a safer alternative to traditional cigarettes or serve as a good smoking cessation tool.

- **Research Objective 2 (Conative "behavioral"):** To determine the influence that packaging has in shaping Generation Z UKZN students' perceptions of e-cigarettes. The equivalent research question is *"What influence does packaging have in shaping Generation Z UKZN students' perceptions and attitudes of e-cigarettes?"*

The component of "behaviour" was translated into questions relating to what respondents think about e-cigarette packaging; whether e-cigarette packaging grabbed their attention, whether they find e-cigarette packaging appealing and whether it led them to try the product.

- **Research Objective 3 (Affective)**: To determine students' perceptions or feelings about the regulation of e-cigarettes in South Africa. The equivalent research question is "*What are students' perceptions and attitudes of the South African regulation on e-cigarettes?*"

This component helped translate how e-cigarette marketing and lack of e-cigarette regulations might lead Generation Z consumers to conclude that e-cigarettes are safe and that using e-cigarettes would be a positive, pleasant and exciting experience. A structured

questionnaire was carefully designed according to the tri-component to shed empirical light on these three research objectives/questions.

4.6.2 Consumer decision-making process

Marketing decisions are about understanding what, when, where and how consumers buy. It is also about understanding how much money they are willing to spend, most importantly, why are they buying (Astute, n.d.). Comprehending why they buy includes knowledge of the social and mental processes behind that decision. Majority of marketers acknowledge that consumers have choices. Consumer behavior research involves trying to understand how consumers decide what to buy so that they can make objective and informed decisions about key marketing variables (Lappeman, Egan, Rightford, and Ramogase, 2021).

This process is called the consumer decision-making process. According to Kotler, Armstrong and Parment (2016), the consumer decision-making process includes five stages (Figure 4.3), namely: "need/problem recognition, information search, evaluation of alternatives, purchase decision and post-purchase decision". The five-stage model acts as a base for more modern concepts as it emphasises the "moments that matter" in the process of the consumer decision-making process (Stankevich, Akhunjonov, Obrenovic, 2017). The consumer decision- making process model proposes that buyers go through the 5 stages in their buying process. However, once the process is started, consumers can often skip several steps or consumers can withdraw at any stage of making the purchase (Niosi, 2021).

Figure 4.3 Stages in the consumer decision making process

Source: Lappeman *et al.,* (2021)

- **Stage 1: Need/problem recognition**

The need recognition takes place when a consumer recognises a need or a problem and the need is induced either by an external, such as advertising, a family member purchases, or internal, such as stress or feeling hungry, stimulus. For instance, a smoker feels stressed out from school or work and realises the need to smoke to calm their nerves (Kotler, Armstrong and Parment, 2016). The ability for e-cigarettes to solve a perceived problem leads to a

purchase if the benefit value is greater than the cost of purchasing it. Recognizing that there is a need that must be met and satisfied, meets the criteria of a consumer recognizing a need. Kotler and Keller (2016), explained that consumers can also experience the same feeling towards wants instead of needs but wants can be easily traded off when their buying power or ability is too low and wants can be abandoned as long as basic needs are met. The next stage of the process is "Information search".

- **Stage 2: Information Search**

After the need has been recognized the next step is information search. The consumer begins to search information, in this case about e-cigarettes. After a need is identified, the consumer can search for information to help recognise and evaluate alternative products, services, and outlets that will meet that need or desire (Niosi, 2021). This process is simply the consumer recalling "decision relevant" information in the form of memories prior to evaluating alternatives. Stankevich, Akhunjonov, Obrenovic (2017) and Kotler *et al*., (2016), suggested that this search can either be external or internal. External information search includes the collection of information from outside sources, such as the general marketplace, neighbors, peers and family. While internal information search comprises of recovering experiences and knowledge from memories.

The various sources of information can have different influences depending on the consumer and the product. Kotler and Keller (2012), argued that out of all these sources, consumers generally gain the most information from advertisements. However, personal sources tend to be the most conclusive source as they are usually trusted more.

- **Stage 3: Evaluation of alternatives**

At this stage, consumers start asking questions about whether it is the right product or if they need something else to satisfy the identified problem. Stages 2 and 3 occur in conjunction with each other and the consumer can switch between them many times before proceeding to the next stage. When evaluating alternatives, consumers read various reviews and compare benefits, prices, and the best or easiest places to buy the product (Niosi, 2021).

Consumers use their own knowledge gained in the previous step to pinpoint which option best suits their needs, in order to narrow down their options before making an informed decision. Stankevich *et al.,* (2017) also emphasized that consumers who have product

preferences and brand loyalty may not be involved in this stage of the consumer decision-making process.

- **Stage 4: Purchase decision**

The purchase decision is mostly affected by the previous stages of the consumer decision-making process. Kotler and Keller (2012), explained that the evaluation of alternatives stage influences consumer purchasing decisions and intentions across different brands. According to Shrestha (2016), this stage aids as the end goal of the consumer. Stankevich et al., (2017), states that consumers buy to satisfy their needs and desires. After making a purchase decision, the consumer goes through two stages. In the first stage, consumers choose how to purchase, for example consumers will choose a certain retailer or website over a competitor. The second stage includes in-store choices, figuratively or literally, which can be influenced by point-of-purchase advertising, sellers, posters in websites, and media, (Stankevich et al., 2017). Lappeman *et al.,* (2021) noted that the entire sale can undone at this stage if the customer experience does not meet or exceed expectations. The experience we refer to is the point at which customers give money for the products they want, whether in-store or online.

- **Stage 5: Post-purchase behaviour**

The post-purchase behaviour is the final stage of the consumer decision-making process. At this stage, consumers will review and analyse the purchase they made. Consumers evaluate whether the product they purchased exceeded their expectations or did not satisfy their demands. The consumer's expectations and the product's perceived performance are the key factors determining consumer satisfaction (Kotler *et al.,* 2016). According to Stankevich *et al.,* (2017), the positive satisfaction of a purchased product can result to repurchasing. However, if the purchase did not satisfy consumer demands, this may lead to negative consequences and influence the decision-making process of potential consumers. Ganlari, Deka and Dutta (2016), noted that dissatisfied customers will most likely peruse other alternatives to reduce their disappointment and can also replace the product.

The term cognitive dissonance is utilized to describe this stage. Niosi (2021) defined cognitive dissonance as "the state of having inconsistent thoughts, beliefs, or attitudes, as relating to behavioural decisions and attitude change". From a marketing perspective, this means that consumers try to justify their purchases and may even continue to validate their choices by consuming product advertisements. Post-purchase evaluation also continuously

ongoing as new offers come and go, encouraging purchasers to make new choices (Lappeman *et al.,* 2021).

4.7 Conclusion

This chapter has presented the review of the literature to provide insight into young adult's perceptions of e-cigarette products with regards to their safety, regulations and smoking cessation. Assessing perceptions will help regulators and public health officials understand what motivates people to use e-cigarettes and how they affect smoking cessation. The literature provides some theoretical explanation in understanding how young adults perceive e-cigarettes. However, research has mostly been conducted in the USA and European countries. Research must continue, especially regarding the public's awareness and perceptions of e-cigarettes from a South African context. Chapter five will discuss the research methodology adopted in this study.

CHAPTER 5: Research methodology

5.1 Introduction

Research methodology refers to the methods of collecting information and data (Long, 2014). Sekaran and Bougie (2016) describe the investigation as a process of searching for problems after comprehensively investigating the factors of the situation. Keyton (2001) also described research as the process of asking questions and finding answers. Saunders, Lewis and Thornhill (2007) identify research methodology as the theoretical and philosophical conjectures that establish how research is carried out. Research methodology also discourses how the chosen techniques affect specific research. The objective of research methodology is to show the phases, processes and approaches of data collection and analysis in this study.

This chapter describes the methodology employed in this research and reviews the research concepts that were utilised to achieve the aim of this study. This comprises of the sampling method, research design, data collection techniques and data analysis. The methodology utilised includes an in-depth analysis of the theoretical framework as well as data collection techniques relevant to a quantitative study. It examines the significance of the sampling and data collection methods in questionnaire design and construction. It also offers important information for data analysis by identifying various techniques and tests that have been applied. Therefore, the chapter demonstrates the validity and reliability of the study.

5.2 Research process

The research process consists of a series of steps or actions required for effectively conducting research, Singh (2021) defines the research process as a process of multiple scientific steps in conducting the research work. According to Schindler (2019), the research process can be defined as a set of processes with several well-defined phases, specifically, the process involves clarifying the research question, designing the study, collecting and preparing data, analysing and interpreting the data, and reporting the findings and recommendations. Similarly, Clifford (cited in Bairagi and Munot, 2019). defined the research process as a process that involves identifying a problem, formulating a hypothesis or proposed solution, collecting, organising, and analysing data, drawing conclusions, and

determining whether it fits the formulated hypothesis. The research process has been developed by various authors, hence the research process does not follow a specified set of steps, the steps may differ however, the steps are interlinked with the other steps in the process. Figure 5.1 depicts the process that was followed in this study.

Figure 5.1 Research process

Source: Bairagi and Munot (2019); Singh (2021), Schindler (2019).

5.2.1 Step 1: Identify the research problem

Kumar (2019) noted that the first and most important step of the research process is the formulation of the research problem. Without a clear research problem, an economical and clear plan is impossible.

In this regard, Malhotra and Peterson (2006) defined a research problem as a statement that defines the essence of the problem certain research is addressing. Taking this into account Zikmund, Babin, Carr and Giffin (2010) affirm that a researcher needs to formally define the problem that needs to be addressed by developing research questions and transforming them into actionable research objectives. This needs to be done correctly otherwise the rest of the research process will be misguided.

Globally, tobacco consumption is the highest most preventable cause of morbidity and mortality (World Health Organisation [WHO],2021). The tobacco epidemic is one of the most immense public health threats worldwide. Globally, tobacco use is linked with more than eight million deaths each year (WHO, 2015). E-cigarettes do not contain tobacco; however, numerous e-cigarette products are owned, manufactured and promoted by the tobacco industry. Globally, there has been a significant market infiltration of e-cigarettes even though their long-term health risks are not known.

Even though the use of e-cigarettes is gaining popularity in South Africa, limited research has been conducted to examine the influence marketing has on shaping young adults' perceptions of these products. E-cigarette products are largely unregulated, which proliferating their use, driven by myths and assisted by misleading labels and no health warnings. The insufficient evidence about their long-term health risks has not hindered the use and marketing of e-cigarettes among young adults. Therefore, there is a need to investigate, understand and comprehend how young adults perceive e-cigarettes and the knowledge they have of e-cigarette products.

Having insight into the perceptions that the youth have and determining resources that provide them with data in relation to e-cigarettes contribute to in-depth knowledge of how various effective public interventions could be planned and benefit policymakers to set appropriate regulations. The findings will also contribute to advise future studies on e-cigarette use in South Africa.

Therefore, the purpose of the study was to quantitatively examine how marketing influences young adults' perceptions and attitudes around the initiation and use of e-cigarettes, the benefits and risk perceptions associated with e-cigarette use, the role e-cigarette packaging

plays in consumer behaviour and attitudes, the effectiveness of e-cigarettes as a cessation tool and finally the influence of the regulatory environment on young adults' perceptions and attitudes about e-cigarettes. In addition, the study will seek to establish young adults' perceptions about e-cigarettes during the Covid-19 pandemic.

5.2.2 Step 2: Determine the research objectives

The objective of the study describes why the study is being undertaken and is used to address the problem (Sekaran and Bougie, 2016). Kumar (2019) defined research objectives as "specific statements of goals that you set out to be archived at the end of your research journey."

The fundamental objectives of this study are:

RO1: To determine how marketing influences the perceptions and attitudes of Generation Z UKZN students towards e-cigarettes.

R02: To examine the influence packaging has on shaping Generation Z UKZN students' perceptions and attitudes of e-cigarettes.

R03: To ascertain students' perceptions and attitudes of the regulation of e-cigarettes in South Africa.

5.2.3 Step 3: Develop the research design

A research design is a procedural plan that is adopted by the researcher to answer questions validly, objectively, accurately and economically. Kumar (2019) further explains that a research design addresses questions that determine the path the researcher proposes to take for their research. Sekaran and Bougie (2016) explain that research design is an outline or plan for the assortment, estimation and investigation of information brought up to answer research questions.

According to Hair, Celsi, Bush and Ortinau (2013), while each research problem is different, most research objectives can be attained by using one or a combination of the three types of research designs, which are exploratory research, descriptive research, causal research, or empirical research as discussed below.

5.2.3.1 Exploratory research

Exploratory studies relate to circumstances where little or no research has been done in the past (Sekaran, 2010). Du, Davis and Bezuidenhout (2014) describe that in exploratory studies, because the research design needs to be flexible to allow for an understanding of an unknown area of research, data replication (reliability) and accuracy (validity) are usually not scientific criteria.

Cant (2003) and Malhotra (2008) explained that exploratory research can be utilised for some of the following purposes:

- Hypotheses development.
- Express a problem or elucidate it more succinctly.
- Discover other courses of action.
- Distinguish major variables and relationships for further analysis.
- Obtain knowledge for developing an approach to a problem.
- Generate priorities for further research.

5.2.3.2 Descriptive research

Du, Davis and Bezuidenhout (2014) noted that the objective of descriptive research is to depict the characteristics of phenomena, relations between variables or relationships between phenomena as accurately as possible. There are various ways of explaining objects and phenomena, and thus descriptive research can be used for both qualitative and quantitative studies. Kumar (2011) noted that a descriptive study objective is to:

- Explain a problem, phenomenon, or situation systematically,
- Offer information about a particular phenomenon, for instance, the living conditions of a community.

5.2.3.3 Casual research

McDaniel and Gates (2015) cite that in causal research, the researcher investigates whether the value of one variable causes or controls the value of another variable for the purpose of creating a link amongst them. According to Sekaran and Bougie (2016), casual research is concerned in depicting one or more factors that are causing a problem.

5.2.3.4 Empirical research

Pattern (2017) described empirical research as creating scheduled observations by ensuing careful plans for doing observations, executing in a systematic thoughtful process that merits being named research. In empirical research conclusions of the study are strictly drawn from concretely empirical evidence, and therefore "verifiable" evidence.

Empirical research is informed by:

- Empiricism - a philosophy that assumes knowledge is grounded in what you can see, hear or experience.
- Positivism - a philosophy that presumes the universe is an orderly place; a non-random order of the universe exists; events have causes and occur in regular patterns that can be determined through observation.

In the case of this study, an empirical research design was employed because there was limited information with regards to the influence marketing has towards shaping young adults' perceptions of e-cigarettes. The study used a positivism approach; positivism can be defined as an approach to the study of society that depends especially on scientific evidence, quantifiable observations that lead to statistical analysis (Sekaran and Bougie, 2016). According to Kumar (2011), positivists are interested in rigour and replicability of their research, the reliability of observations and generalisability of findings. Validity of research findings is one of the key advantages of this approach.

5.2.4 Step 4: Conduct the empirical study

5.2.4.1 Research approach

There are three approaches that a researcher may choose for a study, namely quantitative, qualitative and mixed methods. Creswell (2013) cited that quantitative methodology is applied to quantify or measure opinions, attitudes, behaviours and any defined constructs.

Quantitative research enables for a broader study, including a larger number of participants, and improving the generalisation of the results. The benefit of utilising quantitative research is that it gives researchers a fast and easy way to measure and analyse large amounts of data (Sekaran and Bougie, 2016). This study used a quantitative research methodology as result of its ability to focus on objective measurements and numerical analysis of data gathered

through questionnaires. This allowed the researcher to gather quantifiable data which will allow the researcher to provide insight into the study.

5.2.4.2 Study site

The study site was the University of KwaZulu-Natal (UKZN) Westville campus only. UKZN consists of five campuses, namely Howard College, Westville campus, Edgewood campus, Medical School and Pietermaritzburg. For this research, the study was conducted on the Westville campus.

5.2.4.3 Target population

Sekaran and Bougie (2016) defined the target population as the whole group of individuals, events or things that a researcher wished to explore. According to Wiid and Diggines (2013), the target population is the total group of people or entities from whom information is required. The target population for this study was UKZN Westville campus students (smokers and non-smokers). Included in the target population are all registered students from the Westville campus, which is made up of the following colleges: College of Agriculture, Engineering and Science, College of Health Sciences, College of Humanities and the College of Law and Management Studies.

A total of 11,155 students are registered at the Westville campus (Ii.ukzn.ac.za, 2021) and students are aged 18 and upwards. This enabled the researcher to include a sample of individuals from all age groups in this study. The target population of this study also contained individuals from various demographic backgrounds. This allowed the researcher to grasp the influence e-cigarette marketing has on Generation Z consumers from various demographic backgrounds. Table 5.1 outlines the figures of students registered at the university for 2021.

Table 5.1 University of KwaZulu-Natal, Institutional Intelligence Reports: Student Registration by College and Campus (2021)

College	UG	PG	Howard	Pmb	Med Sch	Westville	Edgewood	TOTAL
COLLEGE OF AGR, ENG & SCIENCE	6837	1937	2415	2695		3664		8774
COLLEGE OF HEALTH SCIENCES	4355	2118	1022		2577	2874		6473
COLLEGE OF HUMANITIES	15798	3604	9210	3797			6395	19402
COLLEGE OF LAW & MAN STUDIES	5793	2514	1749	1941		4617		8307
TOTAL	**32783**	**10173**	**14396**	**8433**	**2577**	**11155**	**6395**	**42956**

Source: University of KwaZulu-Natal (2021).

5.2.4.4 Sampling technique

Kumar (2019) described sampling as the process of choosing a few respondents (a sample) from a larger group (the sampling population) to become the basis for estimating the prevalence of information of interest. A sample is a sub-group of the population the researcher is interested in.

The simplest and appropriate method for determining a sample size for a given population was noted by Sekaran and Bougie (2013), whose book elucidated the scientific guidelines with a table which determines the sample size as seen in Table 3.2. The population to sample size table indicated that an appropriate sample size for the population of 11,155 was 375. Therefore, choosing a sample size of 375 respondents accurately reflected the population of Westville campus and granted a broad view of Westville campus students' perceptions and knowledge of e-cigarettes.

According to Kumar (2019), there are two sampling methods, namely probability sampling and non-probability sampling. These can be classified by their basis of representation as well as selection techniques. Probability sampling refers to whether each unit in the population has an equal opportunity to be part of the sample (Du, Davis and Bezuidenhout, 2014). In probability sampling the study population has an equal and independent chance of selection in the sample. Probability sampling can either be restricted or unrestricted and entails either simple random sampling, systematic, stratified random, cluster or double sampling.

According to Sekaran and Bougie (2016), in non-probability sampling the elements do not have a known or predetermined chance of being selected as subjects. Du, Davis and

Bezuidenhout (2014) explained that non-probability sampling is used when it is nearly impossible to determine who the entire population is or when it is difficult to gain access to the entire population. Non-probability sampling consists of convenience, judgement and quota sampling.

The sampling method that was used in this study was convenience sampling. Convenience sampling is a non-probability sampling design that is primarily guided by the convenience to the researcher in terms of selecting the potential respondents (Kumar, 2019). Research is gathered from members of the population conveniently accessible to the researcher. Convenience sampling is quick, convenient and inexpensive. However, this sampling process is not generalisable at all (Sekaran and Bougie, 2016). Despite this disadvantage, the advantages of this design were imperative for the study.

5.2.4.5 Sample size

Zamboni (2018) defined sample size as a direct count of the number of samples measured or observations being made. Kumar (2019) described sample size as the number of individuals, usually denoted by the letter 'n', from which researchers obtain required information.

The simplest and appropriate method for determining a sample size for a given population was described by Sekaran and Bougie (2016), whose book elaborated the scientific guidelines with a table which assists in deciding on the sample size. The study used Sekaran and Bougie's (2016) sample size table to determine the sample size. The study's population was 11,155, therefore, choosing a sample size of 375 respondents accurately reflected the population of Westville campus and grants a broad view of Westville campus students' perceptions and knowledge of e-cigarettes.

Pertaining to respondents' biographical variables, namely gender, age, race, study programme and level of study, only the top two and the lowest figures will be explained in this chapter as further discussion concerning the aforementioned variables will be included in chapter six.

Gender

According to the findings, the majority of the respondents were females (56.9%), whereas 43.1% of the respondents were male. According to the Department of Higher Education and Training (2020), between the year 2013 to 2017, the gross enrolment for females in tertiary intuitions has been higher than that of males by approximately 40%. According to the

University of KwaZulu-Natal (2021), student registration report, more females were registered at UKZN then males in 2021.

Age

According to the research findings, the highest proportion of respondents were from the 18-24 year (90.4%) age category, followed by the 25-34 year (9.3%) age group category. The 35 year and over age category had a proportion of 0.3% of the respondents.

Race

According to the findings, the sample of this study included respondents from four race groups. Africans constituted the highest proportion of the respondents (89.1%). The second highest group of respondents was Indians (7.4%), followed by Coloureds (2.3%). The White race group had the lowest percentage of respondents (1.3%).

Study programme

The findings indicate that the majority (83.9%) of the respondents enrolled for a degree. Respondents from the Honours degree category accounted for 9.6% of the sample, while 4.2% of students were enrolled for Masters. More so, 1.3% of the students in the sample were registered for a Postgraduate Diploma and 1% of the students were pursuing their PhD.

Level of study

The findings indicate that most students that participated in the study were third year students (31.2%). Respondents enrolled for first year constituted 27% of the sample. The results further indicated that second year students represented 25.1% of the respondents. Table 5.2 indicates the sample size for a given population size that was used for this study.

Table 5.2 Sample Size for a Given Population Size

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Source: (Sekaran, 2003).

5.2.5 Step 5: Data collection

Data collection is the process of gathering information for a specific purpose. There are numerous methods used to gather primary research data. Some of these methods are interviews, focus groups, observations and surveys. In this study data was collected using primary sources and secondary sources. The study utilised primary data by using questionnaires as an instrument for collecting data which allows for many participants and is cost effective. Questionnaires were administered electronically; the distribution of online questionnaires to Westville campus students was easy and quick. A link to the online questionnaire accompanied with the Letter of Informed Consent was emailed to all registered Westville campus students via the University Notices that are emailed to students' email account. Secondary data that was used for this study was collected from journal articles,

books, company websites, government publications, newspaper articles, case studies, statistical bulletins and research papers.

5.2.5.1 Questionnaires

Questionnaires are written lists of questions, the answers to which are recorded by respondents. Respondents read the questions, interpret what is expected and then write down the answers (Kumar, 2019). The questionnaire was formatted using Google docs. Students had to continue to the terms obtained in the informed consent letter. Once they agreed to participate, they were directed to a link which allowed access to the questionnaire. Upon completion of the questionnaire the completed instrument was directly sent to the researcher's email address.

In order to provide justification for the use and administration of online questionnaires in this study, there are numerous advantages of this questionnaire approach, as indicated by Kumar (2019), which are outlined below:

- It is less expensive: Questionnaires save time, human and financial resources. The use of questionnaires is convenient and inexpensive, especially when they are administered collectively to a study population.
- Convenience for respondents: Respondents can answer questions according to their schedule and at their own pace.
- It offers greater anonymity: There is no face-to-face interaction between respondents and the interviewer so this method provides greater anonymity. In some situations where sensitive questions are asked it helps to increase the likelihood of obtaining accurate information.
- No interview bias: If interviewers are present there is a possibility that they could influence respondents' answers.

The drawbacks of questionnaires are:

- Low response rate.
- Self-selecting bias.
- Lack of opportunity to clarify issues.
- The response to a question may be influenced by a response to other questions.

5.2.5.2 Nature and purpose of the questionnaire

Questionnaires can be administered personally, mailed or distributed electronically to respondents (Sekaren and Bougie, 2016). For this study, questionnaires were administered online using Google docs; the distribution of online questionnaires to Westville campus students was easy and quick. A link to the online questionnaire accompanied with the Letter of Informed Consent was emailed to all registered Westville campus students via the University Notices that are emailed to students' email account.

In a questionnaire, the main types of questions utilised are open-ended and closed-ended questions. Closed-ended questions are structured in such a way that it provides respondents with a set of pre-decided categories to select from (McLeod, 2018). Closed-ended questions are quicker and easier to answer; for this purpose, the study used closed-ended questions in the questionnaire.

The questionnaire was divided into four sections. Section A of the questionnaire used a nominal scale. Nominal scales can be defined as a scale utilised for labelling into clear classifications without any quantitative value or order. Biographical information of participants was the focus in section A. Sections B, C and D used an ordinal scale; a 5-point-likert scale was utilised with five options ranging from (1) Strongly disagree to Strongly agree (5). Section A had five questions, section B had 32 questions, section C had 11 questions and section D had seven questions.

The sections of the questionnaire (Appendix C) are as follows:

- Section A of the questionnaire is based on the biographical details of the respondent.
- Section B is based on the knowledge and perceptions Generation Z has of e-cigarettes.
- Section C is based on the influence of e-cigarette packaging.
- Section D is based on the perceptions and influence of e-cigarette regulations.

5.2.6 Step 6: Data analysis and findings

The data collected to address the research problem was gathered by means of an online questionnaire with closed-ended questions, the data collected needed to be analysed and interpreted. Data analysis was discussed for the research approach method in section 5.2.4.1. A detailed discussion of the findings will be covered in the next chapter of this study (Chapter 6).

Data analysis can be defined as the process associated with surfacing meaning and knowledge from various data sets that is gathered during the data collection process (Coghlan and Brydon-Miller, 2014).

Visual summary can be employed to analyse data. This refers to the tables and graphs that researchers use to validate their data. Tables and graphs are employed to help the viewer of the results understand what is happening.

Once data collection was complete, the raw data was coded on a spreadsheet utilising Microsoft Excel. The data was organised in accordance with the responses submitted by the respondents. Once coded, the data was inputted in Statistical Package for the Social Sciences (SPSS) software where the data was analysed. Owing to the fact that human error can take place in data being captured incorrectly during this step, spot checks of random entries in the data were made (Sekaran and Bougie, 2013).

5.2.6.1 Descriptive statistics

Sekaran and Bougie (2016) explain that descriptive statistics are frequencies, measures of central tendency and measures of dispersion which provide descriptive information about a data set.

- **Frequencies**

Frequencies relate to the times different subcategories of a specific phenomenon occur, from which the rate and the combined percentage of their occurrence can be effectively determined (Trochim, 2020).

- **Measures of central tendency**

The measure of central tendency is a single value that characterises the manner in which a cluster of data groups around a central value. There are three measures of central tendency, mean, median and the mode (Trochim, 2020).

- The mean is the average of a set of figures (Sekaran and Bougie, 2016).
- The median is the score found at the exact middle of the set of values (Trochim, 2020).
- The mode is defined as the number that occurs most frequently in a set of data (Sekaran and Bougie, 2016).
- **Measures of dispersion**

Dispersion can be defined as the dispersion of the values around the central tendency; it includes the range, the standard deviation and the variance. The range is the highest value minus the lowest value (Trochim, 2020). Sekaran and Bougie (2016) define standard deviation as a measure of dispersion for parametric data, the square root of the variance. According to Sekaran and Bougie (2016), the variance demonstrates the dispersion in the data set and is acquired by deducting the mean from each of the observations, figuring out the outcomes, adding them and dividing the total by the number of observations.

5.2.6.2 Inferential statistics

Inferential statistics helps the researcher draw conclusions about the population from a sample.

- **Analysis of Variance (ANOVA):** ANOVA is an analysis tool that is utilised to test whether the means of two or more groups differ significantly from one another. According to Sekaran and Bougie (2016), ANOVA assists in investigating the significant mean differences between more than two groups on an interval or ration-scaled dependent variable.
- **Statistical Significance (T-Test):** A rather simple test in inferential statistics, the T-Test is utilised to compare the means of two variables and understand if they differ from each other. Sekaran and Bougie (2016) explain that a T-Test demonstrates if there are any important differences in the means for two groups in the variable of interest.
- **Regression Analysis:** A regression analysis is a statistical procedure that enables the researcher to take a prediction about a result variable based on knowledge of some predictor variable.
- **Correlation Analysis:** This test is utilised to comprehend the extent to which two variables are dependent on one another. The strength of any relationship, if it exists, between the two variables can be derived from this.

5.2.7 Step 7: Conclusion and recommendations

The final chapter of this study includes the conclusion, which involves interpreting the data that has been collected and suggesting possible recommendations. The conclusions and recommendations of this study will be discussed in detail in Chapter 7.

5.3 Data quality control

Data control is essential in research to guarantee truthfulness and consistency. The study will focus on validity and reliability. According to Simon (2011), validity and reliability must be addressed in every research study to ensure the credibility, dependability and accuracy of the information.

5.3.1 Validity

Validity refers to the degree that a questionnaire measures what it is intended to measure (Saunders, 2011). Validity can be defined "as the degree to which a concept is precisely measured in a quantitative study" (Heale and Twycross, 2015). Validity indicates how well the instrument measures a concept (Sekaran and Bougie, 2013). According to Collis and Hussey (2009), validity focuses on the extent to which research findings accurately denote what is happening in the research problem and is mostly associated with quantitative research studies.

There are three types of validity, namely content validity, construct validity and criterion validity.

- Content validity is the range to which a research instrument precisely measures all elements of a construct (Heale and Twycross, 2015).
- Construct validity attests to how good the results collected from the utilisation of the measure suit the theories around which the trial was arranged concept (Sekaran & and Bougie, 2013).
- Criterion validity is the degree to which a research tool is linked to other tools that measure the same variables (Heale and Twycross, 2015).

For the purpose of this study, content validity was employed to validate the questions contained in the questionnaire. Factor analysis was used to measure validity, which Sekaran and Bougie (2014) identifies as a multivariate technique that confirms the dimensions of the concept that has been operationally defined, as well as indicating which of the items are most appropriate for each dimension.

Furthermore, in order to ensure that the data collection instrument was reliable and valid, a pilot study was conducted. The questionnaire that was used for this research was distributed amongst students to ensure that all the questions being asked were easily understandable, clear and free of errors. Furthermore, the researcher utilised a sample that was large enough

comprising of students (the target population under investigation), to yield the appropriate research outcomes.

5.3.2 Reliability

Reliability refers to the consistency of a measure (Heale and Twycross, 2015). Sekaran and Bougie (2016,p. 223) claim that reliability of a measure demonstrates the degree to which it is without bias. Kumar (2019) noted that reliability indicates accuracy, stability and predictability of a research instrument - the higher the reliability, the higher the accuracy.

In the study, reliability was measured through Cronbach's Coefficient Alpha, which is used to measure the internal consistency of group items (Creswell, 2013). According to Collis and Hussey (2009), reliability refers to a test of how consistently a measuring instrument measures and focuses on credibility and accuracy.

The alpha coefficient of Cronbach is a calculation of the reliability coefficient dependent on the degree to which the objects on the instrument are positively related (Serakan and Bougie, 2016). The lower the coefficient is to 1, the higher the accuracy of the statements in the questionnaire.

5.4 Pilot testing

According to Wright (2020), pilot testing can be defined as the dry run of a research study which permits the researcher to trial their research approach on a small number of test participants prior to conducting the main study. Pilot testing permits the researcher to make necessary alterations to the data collection tools and techniques before the actual collection of data. Hence, pilot testing was helpful in improving the instruments employed in the study.

For the purpose of this study, pilot testing was conducted on 15 participants; this was conducted to give the researcher a warning in advance about any shortcomings in the questionnaire that required amending prior to the commencement of the research.

5.5 Limitations of the study

Every study has certain limitations. It is imperative to include them in the research for the purpose of attaining an accurate perspective of the topic.

The limitations of this research include:

1. The study focused only students registered at UKZN Westville campus. Thus, this limited the number of participants to UKZN Westville campus only. Hence the findings cannot be generalised across other campuses.
2. Another limitation was non-response due to the Covid-19 pandemic. Students were not allowed on campus and this may have limited the responses from students due to inaccessibility to internet connection and inability to receive emails.
3. Non-probability sampling was adopted; hence the findings cannot be generalised to other Generation Z populations.

5.6 Ethical consideration

The researcher obtained ethical approval for this research from the University of KwaZulu-Natal Ethics Committee. The researcher obtained a gatekeeper's letter from the office of the Registrar seeking permission to be allowed to administrator the questionnaire to students online.

Participants of the study accessed a Letter of Informed Consent that stated what the study was about, and only once they consented to participate were they allowed to proceed. Participants were given written assurance that their participation in the study was voluntary. Participants in the research study were not forced to be a part of the research and could withdraw at any given moment with no consequences.

The anonymity and privacy of participants was upheld by the School of Management, Information Technology and Governance at UKZN. The information collected was treated with strict confidentiality and was not used for other purposes besides for the study. All data collected was locked in secure storage and will be destroyed after five years.

5.7 Conclusion

This chapter has provided and underlined the significance of research methods regarding this study. All the methods have been applied based on the research design which is empirical in nature. It described the necessary steps needed to gather the primary data.

The chapter also provided the important techniques regarding the sampling process. This permitted the researcher to make the appropriate selection of respondents needed for the study. This also displayed the utilisation of convenience sampling after considering the limitations mentioned. The researcher had been able to effectively collect quantitative data by

using the questionnaire as a tool. This reflected the benefits relevant for the study. This chapter also described the methods required for valid and reliable data analysis. Therefore, this chapter is considered the basis of the research, and the interpretation of the results will be discussed in the following chapter. Chapter 6 shows the results of the study.

CHAPTER 6: Presentation of results

6.1 Introduction

The results of the research study are discussed in this chapter. The researcher used both inferential and descriptive statistics to analyse data. The information is displayed in narrative, tabular and graphical formats. The data from the sample was first entered into Microsoft Excel 2016 and then processed using the Statistical Package for the Social Sciences (SPSS) 27. Pie charts and tables were used to show the data. Data is presented according to the research objectives and associated research questions that have been answered in this chapter as follows:

1. To determine how marketing influences the perceptions and attitudes of Generation Z UKZN students towards e-cigarettes.
2. To determine the influence packaging has in shaping Generation Z UKZN students' perceptions and attitudes of e-cigarettes.
3. To determine students' perceptions and attitudes of the regulation of e-cigarettes in South Africa.

6.2 Presentation of results

Descriptive statistics as well as inferential statistics were used to analyse the data from the questionnaires.

6.2.1 Descriptive statistics

- **Biographical details of respondents**

In this study, frequencies and percentages have been used to outline the biographical variables. The biographical details of the 311 respondents are outlined in Table 6.1.

Table 6.1: Frequency distribution of biographical variables

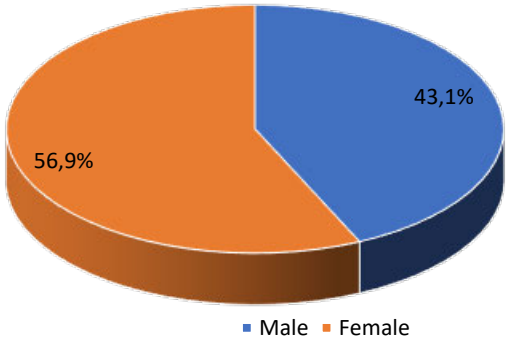
		n	%
Gender	Male	134	43,1%
	Female	177	56,9%

	Total	311	100%
Age	18-24 years	281	90,4%
	25-34 years	29	9,3%
	35 years and over	1	0,3%
	Total	311	100%
Race	African	277	89%
	Coloured	7	2,3%
	Indian	23	7,4%
	White	4	1,3%
	Total	311	100%
Study programme	Degree	261	83,9%
	Honours	30	9,6%
	Postgraduate Diploma	4	1,3%
	Masters	13	4,2%
	PHD	3	1%
	Total	311	100%
Level of study	First year	84	27%
	Second year	78	25,1%
	Third year	97	31,2%
	Fourth year	42	13,5%
	Other	10	3,2%
	Total	311	100%

As evident in Table 6.1, the biographical variables included gender, age, race, study programme and level of study.

Figure 6.1 provides an illustration of the gender proportions of the 311 respondents of this study.

Figure 6.1: Composition of Sample: Gender



As illustrated in Figure 6.1, the majority of the respondents were female (56.9%), whereas 43.1% of the respondents were male.

Figure 6.2 provides a graphical depiction of the percentages of respondents from the various age categories of the study.

Figure 6.2: Composition of Sample: Age

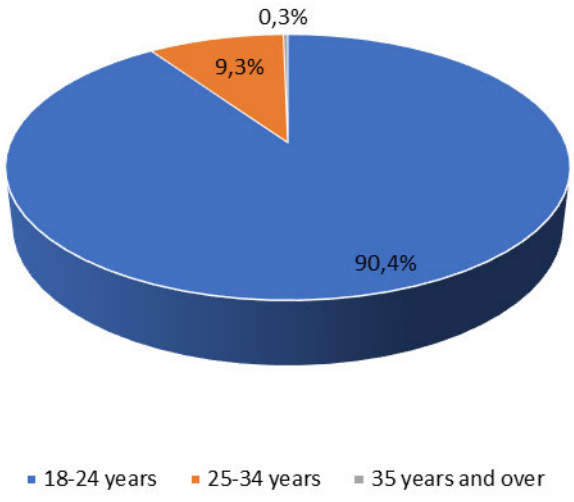
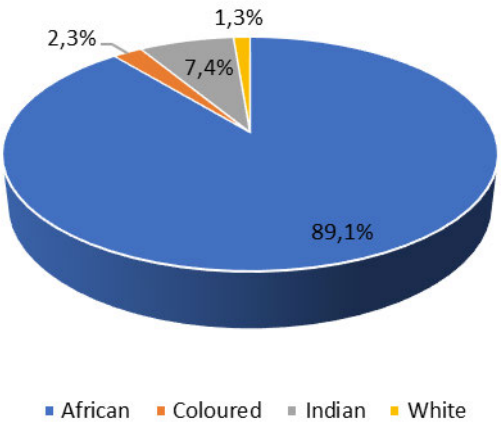


Figure 6.2 illustrates that the highest proportion (90.4%) of respondents were from the 18-24 year age category, followed by the 25-34 year (9.3%) age group category. The 35 year and over age category had a proportion of 0.3% of the respondents. Majority of respondents fall

under Generation Z (1997-2023). Based on the results, it can be assumed that the greater part of the university population comprises of students from this age category. Mhazo (2019) noted that perceptions of e-cigarettes can differ according to age as some studies have indicated that young adults are more likely than older adults to use e-cigarettes because they are considered as "cool" or "trendy" whereas older adults primarily see such devices as mechanisms that help to reduce or quit smoking.

Figure 6.3 depicts a graphical representation of the percentages of respondents according to race groups.

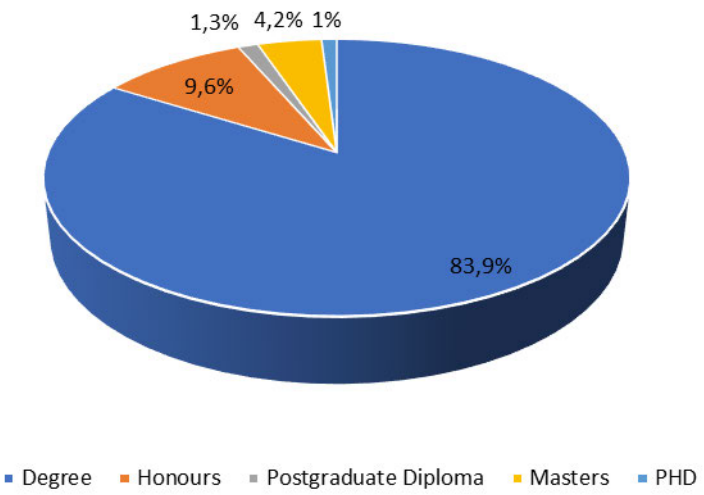
Figure 6.3: Composition of Sample: Race



As seen in Figure 6.3, the sample of this study included respondents from four race groups. Africans constituted the highest proportion of the respondents (89.1%). The second highest group of respondents was Indians (7.4%), followed by Coloureds (2.3%). The White race group had the lowest percentage of respondents (1.3%).

A graphical representation of the study programme is illustrated in Figure 6.4.

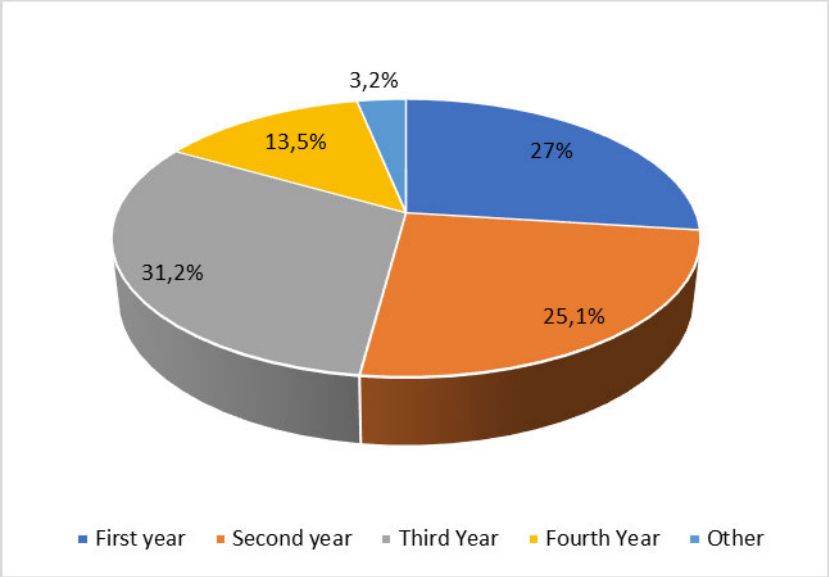
Figure 6.4: Composition of Sample: Study programme



As seen in Figure 6.4, the results indicated that the majority (83.9%) of the respondents enrolled for a degree. Respondents from the Honours degree category accounted for 9.6% of the sample, while 4.2% of students were enrolled for Masters. More so, 1.3% of the students in the sample were registered for a Postgraduate Diploma and 1% of the students were pursuing their PhD. Based on the results it can be assumed that the majority of students that are completing their degree are between the ages of 18 and 24. Moreover, the results also demonstrate that there is a significant difference in the perceptions of students varying in study programme regarding the marketing influence of e-cigarettes. The findings depict that students enrolled for a postgraduate diploma place greater focus on marketing influence of e-cigarettes as compared to the other students enrolled in different study programmes.

Figure 6.5 depicts a graphical illustration of level of study.

Figure 6.5: Composition of Sample: Level of study



According to Figure 6.5, most students that participated in the study were third year students (31.2%). Respondents enrolled for first year constituted 27% of the sample. The results further indicated that second year students represented 25.1% of the respondents.

6.1.2 Importance that students attach to the key dimensions of the study

The results obtained relating to the key dimensions of the study will be presented using descriptive statistics. UKZN students were asked to rate their perceptions of the various key dimensions of the study using a 5-point Likert scale. The higher the mean score, the more positively the dimension is viewed (see Table 6.2).

Table 6.2: Descriptive Statistics: Key dimensions on Tobacco substitute e-cigarette marketing

Key Dimensions of the Study	Minimum	Maximum	Mean	Std. Deviation
Marketing influence towards e-cigarettes	1,000	5,000	2,721	0,509
Influence of packaging	1,000	5,000	2,965	0,554
Regulation of e-cigarettes in South Africa	1,000	5,000	2,960	0,521

Table 6.2 shows that students attach varying degrees of importance to the key dimensions of the study which, in descending level of mean score values, are:

- Influence of packaging (Mean = 2,965)
- Regulation of e-cigarettes in South Africa (Mean = 2,965)
- Marketing influence towards e-cigarette use (Mean = 2,721)

Students attach the greatest level of importance to the influence of packaging and the regulation of e-cigarettes respectively (Mean = 2,965) and the least level of importance to the influence of marketing towards e-cigarette use (Mean = 2,721). Therefore, in order to assess how students, view each of these dimensions, frequency analysis were conducted. This included the assessment of the frequency distribution of the scale items to determine whether or not the data was normally distributed (See Table 6.3 and 6.4).

Table 6.3: Descriptive Statistics: Frequency distribution

Have you used e-cigarettes?		
	Frequency	Percentage
Yes	93	29,9
No	218	70,1
Total	311	100
If so, how recently?		
	Frequency	Percentage
I have not used e-cigarettes	214	68,8
Within the last 7 days	36	11,6
Within the last 30 days	15	4,8
Within the last 6 months	28	9
Within the last year	18	5,8
Total	311	100
How frequently do you use e-cigarettes?		
	Frequency	Percentage
I have not used e-cigarettes	216	69,5
Within the last 7 days	33	10,6
Within the last 30 days	15	4,8
Within the last 6 months	47	15,1
Total	311	100

Table 6.4: Descriptive Statistics: Frequency distribution of the scale items

I have clear knowledge about e- cigarettes		
	Frequency	Percentage
Strongly disagree	48	15,4
Disagree	46	14,8

Neutral	96	30,9
Agree	84	27
Strongly agree	37	11,9
Total	311	100
I know what e-cigarettes are		
	Frequency	Percentage
Strongly disagree	30	9,6
Disagree	26	8,4
Neutral	50	16,1
Agree	139	44,7
Strongly agree	66	21,2
Total	311	100
E-cigarettes are safe		
	Frequency	Percentage
Strongly disagree	66	21,2
Disagree	81	26
Neutral	124	39,9
Agree	32	10,3
Strongly agree	8	2,6
Total	311	100
Smoking e-cigarettes is completely harmless		
	Frequency	Percentage
Strongly disagree	84	27
Disagree	95	30,5
Neutral	90	28,9
Agree	28	9
Strongly agree	14	4,5
Total	311	100
I prefer smoking e-cigarettes as they are less addictive than regular cigarettes		
	Frequency	Percentage
Strongly disagree	107	34,4
Disagree	61	19,6
Neutral	71	22,8
Agree	56	18
Strongly agree	16	5,1
Total	311	100
E-cigarettes are easily accessible		
	Frequency	Percentage
Strongly disagree	40	12,9
Disagree	48	15,4
Neutral	103	33,1
Agree	87	28
Strongly agree	33	10,6
Total	311	100

The use of e-cigarettes is less harmful on both users and bystanders		
	Frequency	Percentage
Strongly disagree	68	21,9
Disagree	78	25,1
Neutral	103	33,1
Agree	49	15,8
Strongly agree	13	4,2
Total	311	100
It is my opinion that no differences exist between e-cigarettes and traditional cigarettes		
	Frequency	Percentage
Strongly disagree	64	20,6
Disagree	106	34,1
Neutral	81	26
Agree	47	15,1
Strongly agree	13	4,2
Total	311	100
E-cigarette marketing and use in South Africa is a concern		
	Frequency	Percentage
Strongly disagree	11	3,5
Disagree	49	15,8
Neutral	175	56,3
Agree	60	19,3
Strongly agree	16	5,1
Total	311	100
E-cigarettes are positively presented on social media		
	Frequency	Percentage
Strongly disagree	21	6,8
Disagree	42	13,5
Neutral	94	30,2
Agree	113	36,3
Strongly agree	41	13,2
Total	311	100
E-cigarettes on social media do not highlight health concerns regarding consumption and risks		
	Frequency	Percentage
Strongly disagree	21	6,8
Disagree	33	10,6
Neutral	83	26,7
Agree	111	35,7
Strongly agree	63	20,3
Total	311	100
E-cigarettes are positively presented on social media as compared to traditional cigarettes		
	Frequency	Percentage
Strongly disagree	19	6,1

Disagree	41	13,2
Neutral	92	29,6
Agree	105	33,8
Strongly agree	54	17,4
Total	311	100
The use of e-cigarettes helps with quitting tobacco cigarette smoking		
	Frequency	Percentage
Strongly disagree	47	15,1
Disagree	60	19,3
Neutral	129	41,5
Agree	58	18,6
Strongly agree	17	5,5
Total	311	100
I would recommend other young adults to use e-cigarettes instead of traditional cigarettes		
	Frequency	Percentage
Strongly disagree	86	27,7
Disagree	63	20,3
Neutral	86	27,7
Agree	57	18,3
Strongly agree	19	6,1
Total	311	100
I support my family and friends' decision to use e-cigarettes		
	Frequency	Percentage
Strongly disagree	84	27
Disagree	65	20,9
Neutral	91	29,3
Agree	53	17
Strongly agree	18	5,8
Total	311	100
I find the information advertised on social media about e-cigarettes to be highly informative, entertaining and influencing		
	Frequency	Percentage
Strongly disagree	41	13,2
Disagree	79	25,4
Neutral	114	36,7
Agree	66	21,2
Strongly agree	11	3,5
Total	311	100
The sources that provide information about e-cigarettes are trustworthy		
	Frequency	Percentage
Strongly disagree	35	11,3
Disagree	59	19
Neutral	171	55
Agree	34	10,9

Strongly agree	12	3,9
Total	311	100
E-cigarettes help me to cope with nicotine addiction		
	Frequency	Percentage
Strongly disagree	108	34,7
Disagree	63	20,3
Neutral	101	32,5
Agree	31	10
Strongly agree	8	2,6
Total	311	100
I know how e-cigarettes work		
	Frequency	Percentage
Strongly disagree	64	20,6
Disagree	55	17,7
Neutral	88	28,3
Agree	82	26,4
Strongly agree	22	7,1
Total	311	100
E-cigarettes have health benefits		
	Frequency	Percentage
Strongly disagree	80	25,7
Disagree	78	25,1
Neutral	114	36,7
Agree	32	10,3
Strongly agree	7	2,3
Total	311	100
E-cigarettes are affordable		
	Frequency	Percentage
Strongly disagree	42	13,5
Disagree	52	16,7
Neutral	149	47,9
Agree	57	18,3
Strongly agree	11	3,5
Total	311	100
I check for e-cigarette products on websites and social media		
	Frequency	Percentage
Strongly disagree	137	44,1
Disagree	73	23,5
Neutral	52	16,7
Agree	38	12,2
Strongly agree	11	3,5
Total	311	100
I have come across e-cigarette advertising while using the internet		
	Frequency	Percentage

Strongly disagree	65	20,9
Disagree	58	18,6
Neutral	65	20,9
Agree	98	31,5
Strongly agree	25	8
Total	311	100
E-cigarette websites can be a very reliable source of information		
	Frequency	Percentage
Strongly disagree	38	12,2
Disagree	61	19,6
Neutral	155	49,8
Agree	50	16,1
Strongly agree	7	2,3
Total	311	100
I check for e-cigarette updates for new products on websites and social media handles		
	Frequency	Percentage
Strongly disagree	152	48,9
Disagree	79	25,4
Neutral	47	15,1
Agree	26	8,4
Strongly agree	7	2,3
Total	311	100
I am well aware of the health risks associated with e-cigarettes		
	Frequency	Percentage
Strongly disagree	47	15,1
Disagree	60	19,3
Neutral	88	28,3
Agree	70	22,5
Strongly agree	46	14,8
Total	311	100
I smoke e-cigarettes because my friends do it		
	Frequency	Percentage
Strongly disagree	167	53,7
Disagree	65	20,9
Neutral	50	16,1
Agree	18	5,8
Strongly agree	11	3,5
Total	311	100
I find e-cigarettes appealing		
	Frequency	Percentage
Strongly disagree	95	30,5
Disagree	67	21,5
Neutral	82	26,4
Agree	56	18

Strongly agree	11	3,5
Total	311	100
Seeking information about e-cigarette products from relatives prior to making a final choice is always advisable		
	Frequency	Percentage
Strongly disagree	41	13,2
Disagree	41	13,2
Neutral	84	27
Agree	85	27,3
Strongly agree	60	19,3
Total	311	100
Few young adults read consumer articles relating to e-cigarette health risks and benefits in newspapers or magazines and find online sources to be more knowledgeable about e-cigarettes and protect against misleading advertising		
	Frequency	Percentage
Strongly disagree	25	8
Disagree	35	11,3
Neutral	132	42,4
Agree	88	28,3
Strongly agree	31	10
Total	311	100
It is important to share product information with friends and relatives about e-cigarette risks and benefits		
	Frequency	Percentage
Strongly disagree	22	7,1
Disagree	24	7,7
Neutral	55	17,7
Agree	105	33,8
Strongly agree	105	33,8
Total	311	100
I usually consider advertisements for obtaining product information about the benefits and risks of e-cigarettes prior to purchase		
	Frequency	Percentage
Strongly disagree	32	10,3
Disagree	51	16,4
Neutral	114	36,7
Agree	76	24,4
Strongly agree	38	12,2
Total	311	100
The packaging gripped my attention		
	Frequency	Percentage
Strongly disagree	24	7,7
Disagree	36	11,6
Neutral	55	17,7
Agree	133	42,8

Strongly agree	63	20,3
Total	311	100
The packaging was appealing		
	Frequency	Percentage
Strongly disagree	15	4,8
Disagree	34	10,9
Neutral	72	23,2
Agree	133	42,8
Strongly agree	57	18,3
Total	311	100
The packaging suggested this product would be fun to vape and use		
	Frequency	Percentage
Strongly disagree	17	5,5
Disagree	32	10,3
Neutral	73	23,5
Agree	126	40,5
Strongly agree	63	20,3
Total	311	100
The packaging immediately created a perception of danger to avoid this product		
	Frequency	Percentage
Strongly disagree	68	21,9
Disagree	122	39,2
Neutral	78	25,1
Agree	33	10,6
Strongly agree	10	3,2
Total	311	100
I was intrigued by the packaging which led me to try out the product		
	Frequency	Percentage
Strongly disagree	69	22,2
Disagree	87	28
Neutral	89	28,6
Agree	58	18,6
Strongly agree	8	2,6
Total	311	100
Attractive, bright packaging piques my curiosity leading me to experiment more with new products		
	Frequency	Percentage
Strongly disagree	51	16,4
Disagree	71	22,8
Neutral	80	25,7
Agree	91	29,3
Strongly agree	18	5,8
Total	311	100
I feel that e-cigarette packaging provides reliable content information		

	Frequency	Percentage
Strongly disagree	45	14,5
Disagree	76	24,4
Neutral	129	41,5
Agree	48	15,4
Strongly agree	13	4,2
Total	311	100
Health warnings on e-cigarette packaging discourage use		
	Frequency	Percentage
Strongly disagree	34	10,9
Disagree	78	25,1
Neutral	126	40,5
Agree	56	18
Strongly agree	17	5,5
Total	311	100
E-cigarette packaging is very informative		
	Frequency	Percentage
Strongly disagree	34	10,9
Disagree	72	23,2
Neutral	145	46,6
Agree	50	16,1
Strongly agree	10	3,2
Total	311	100
E-cigarette packaging comes with easy instructions		
	Frequency	Percentage
Strongly disagree	19	6,1
Disagree	32	10,3
Neutral	173	55,6
Agree	72	23,2
Strongly agree	15	4,8
Total	311	100
E-cigarette warnings have no impact on my consumption		
	Frequency	Percentage
Strongly disagree	50	16,1
Disagree	61	19,6
Neutral	136	43,7
Agree	44	14,1
Strongly agree	20	6,4
Total	311	100
I feel that e-cigarette sale, marketing and use should be regulated in South Africa		
	Frequency	Percentage
Strongly disagree	30	9,6
Disagree	50	16,1
Neutral	98	31,5

Agree	97	31,2
Strongly agree	36	11,6
Total	311	100
E-cigarettes can be used indoors or in public spaces		
	Frequency	Percentage
Strongly disagree	32	10,3
Disagree	54	17,4
Neutral	93	29,9
Agree	109	35
Strongly agree	23	7,4
Total	311	100
I feel that the banning of the sale of e-cigarette products during level 1 lockdown by the government was unnecessary as they are safer than tobacco products		
	Frequency	Percentage
Strongly disagree	45	14,5
Disagree	67	21,5
Neutral	113	36,3
Agree	65	20,9
Strongly agree	21	6,8
Total	311	100
After the ban of e-cigarette products was lifted, I have discontinued vaping		
	Frequency	Percentage
Strongly disagree	44	14,1
Disagree	58	18,6
Neutral	166	53,4
Agree	33	10,6
Strongly agree	10	3,2
Total	311	100
The use of e-cigarettes increases my likelihood of contracting Covid 19 compared to a non-user		
	Frequency	Percentage
Strongly disagree	37	11,9
Disagree	59	19
Neutral	138	44,4
Agree	55	17,7
Strongly agree	22	7,1
Total	311	100
I feel that the sale of e-cigarettes in South Africa is properly regulated		
	Frequency	Percentage
Strongly disagree	22	7,1
Disagree	58	18,6
Neutral	168	54
Agree	57	18,3

Strongly agree	6	1,9
Total	311	100
I am aware that e-cigarettes should be sold only under prescription in South Africa		
	Frequency	Percentage
Strongly disagree	20	6,4
Disagree	64	20,6
Neutral	123	39,5
Agree	78	25,1
Strongly agree	26	8,4
Total	311	100

This section will briefly explore the results generated from the study that pertain to the relevant key research questions and sub-dimensions of the study. A detailed discussion of results will be explored in Chapter 7.

***RQ 1: How does marketing influence the perceptions and attitudes of Generation Z UKZN students towards e-cigarettes*?**

- **E-cigarette knowledge**

Majority of the respondents (65.9%) affirm that they know what e-cigarettes are. However, the results show that 74.3% of the respondents do not confirm that they check for e-cigarette updates regarding new products on websites and social media handles. In terms of respondents knowing how e-cigarettes work, there is a fairly even distribution of scoring opinions for this question. A total of 33.5% of respondents agreed with this statement and 38.3% disagreed, while 28.3% provided a neutral response.

- **E-cigarette initiation and use**

In terms of respondents' perceptions of the sub-dimension of e-cigarette initiation and use, the results indicate that a significant number of respondents disagreed (74.6%) with the statement that they use e-cigarettes because of their friends' influence. A insignificant number of respondents (9.3%) agreed that friends influence their decisions to start using e-cigarettes. This can suggest that respondents in this study are not influenced by friends, but using e-cigarettes is their own choice. Liao, Huang, Huh, Pentz and Chou (2013) noted in their study that examined adolescents from grades 7 to 12 that the magnitude of friends' influence was in general higher during junior high school than high school.

In this study, the majority of respondents (30.2%) found that e-cigarette use is not affordable; it can be assumed that the reason why the majority of respondents are not frequent e-cigarette users can be due to affordability. According to Simon, Camenga, Morean, Kong, Bold, Cavallo and Krishnan-Sarin (2018), past research has shown that e-cigarettes are more likely to be sold in higher income communities.

- **Perception of health risks and benefits of e-cigarettes**

The study indicates that 57.5% of the respondents oppose the idea that smoking e-cigarettes is completely harmless. Furthermore, 50.8% of the respondents do not believe that e-cigarettes have health benefits, while 54% of the respondents disagree that they prefer smoking e-cigarettes as they are less addictive than regular cigarettes. With regards to health risks associated with e-cigarette use, 34.4% of respondents were not aware of the health risks associated with e-cigarette use. In this study, respondents were aware that e-cigarettes are not completely safe, but most respondents were not aware of the specific risks associated with e-cigarette use.

- **E-cigarettes as a cessation tool**

The results depict that e-cigarettes do not help respondents quit tobacco cigarette smoking and the majority of respondents (54%) do not prefer smoking e-cigarettes because they are less addictive than regular cigarettes, while 23.1% of participants use e-cigarettes because they are less addictive than traditional cigarettes. In addition, a considerable percentage of respondents (48%) would not recommend other young adults to use e-cigarettes instead of traditional cigarettes. It can be deduced that the majority of the respondents do not feel that e-cigarettes are an effective smoking cessation tool.

RQ 2: What influence does packaging have in shaping Generation Z UKZN students' perceptions and attitudes of e-cigarettes?

In terms of the *Influence of packaging*, the majority (63.1%) of the respondents affirm that the packaging gripped their attention, while 61.1% of respondents admit that the packaging was appealing. The results of this study further show that 60.8% of the respondents attest that the packaging suggested this product would be fun to vape and use. Furthermore, the results show that 61.1% of the respondents oppose the idea that the packaging immediately created a perception of danger to avoid this product, whereas more than half (55.6%) of the

respondents are indecisive regarding whether e-cigarette packaging comes with easy instructions. Nevertheless, the results also reveal that 61.1% have conflicted opinions on whether the packaging immediately created a perception of danger and need to avoid this product, whereas 50.2% are discordant that they were intrigued by the packaging which led them to try out the product. Regarding the statement on whether attractive, bright packaging piques their curiosity leading them to experiment more with new products, 39.2% are not in agreement with this. More so, 38.9% of the respondents are discordant that that e-cigarette packaging provides reliable content information; while 36% of the respondents contradict this, stating that health warnings on e-cigarette packaging discourage use.

RQ 3: What are students' perceptions and attitudes of the South African regulation on e-cigarettes?

With regard to the *Regulation in South Africa*, more than half (54%) of respondents are indecisive on whether the sale of e-cigarettes in South Africa is properly regulated. In addition, 53.4% of the respondents are indecisive on whether, after the ban of e-cigarette products was lifted, they would discontinue vaping. More so, 44.4% of the respondents in this study are uncertain if the use of e-cigarettes increases their likelihood of contracting Covid-19 compared to a non-user. The results further show that 42.8% of the respondents affirm that that e-cigarette sale, marketing and use should be regulated in South Africa, while 42.4% attest that e-cigarettes can be used indoors or in public spaces. As much as people agree with the statements regarding regulation in South Africa, 36% of the respondents disagree that the banning of the sale of e-cigarette products by the government during level 1 lockdown was unnecessary as they are deemed safer than tobacco products. Additionally, 32.7% of the respondents also expressed a different opinion on whether after the ban of e-cigarette products was lifted, they have discontinued vaping. Furthermore, 30.9% of the respondents failed to agree that the use of e-cigarettes increases their likelihood of contracting Covid-19 compared to a non-user.

6.3 Inferential statistics

6.3.1 Student perceptions on the key dimensions of the study

Hypothesis 1:

There exists a significant intercorrelation amongst the key dimensions (marketing influence of e-cigarettes, influence of packaging and regulation in South Africa) of tobacco substitute e-cigarette marketing relating to students.

Table 6.5: Coefficient Correlation: Key Dimensions of the Study

		Marketing influence of e-cigarettes	Influence of packaging	Regulation in SA
Marketing influence of e-cigarettes	r	1		
	p			
Influence of packaging	r	0.523	1	
	p	0,000**		
Regulation in SA	r	0.399	0.414	1
	p	0,000**	0,000**	

** $p < 0.01$ * $p < 0.05$

The results in Table 6.3 show that all the constructs are positively correlated to each other. These results indicate that there is a significant positive relationship between marketing influence of e-cigarettes, influence of packaging and regulation in South Africa respectively, at the 1% level of significance.

The findings in Table 6.5 reveal there are moderate relationships between the following constructs:

- Marketing influence of e-cigarettes and influence of packaging (r = 0.523).
- Marketing influence of e-cigarettes and regulation in South Africa (r = 0.399).
- Influence of packaging and regulation in South Africa (r = 0.414).

Furthermore, from the findings in Table 6.5, it is apparent that no strong relationships exist between the constructs. However, Hypothesis 1 is not accepted.

6.3.2 Key dimensions of the study and biographical variables

Hypothesis 2:

There is a significant difference in the perceptions of students, varying in biographical profiles (gender, age, race, study programme and level of study), regarding each dimension of the study (marketing influence of e-cigarettes, influence of packaging and regulation in South Africa) (Tables 6.6 to 6.13).

Table 6.6: Mann-Whitney U-Test: Key Dimensions of the Study and Gender

Key Dimensions of the Study	Mann-Whitney U	Z	P value
Marketing influence of e-cigarettes	10338,500	-1,937	0,053**
Influence of packaging	9700,000	-2,756	0,006*
Regulation in SA	10952,000	-1,161	0,246

**p<0.01; *p<0.05

Results in Table 6.6 indicate that there is a significant difference in the perceptions of male and female students regarding the marketing influence of e-cigarettes and influence of packaging at the 5% and 1% level of significance respectively. No other significant differences exist. To determine where the significant differences lie, mean analyses were undertaken in Table 6.7.

Table 6.7: Mean Analyses: Key Dimensions of the Study and Gender

Key Dimensions of the Study	Gender	Mean	Std. Deviation	N
Marketing influence of e-cigarettes	Male	2,787	0,546	134
	Female	2,671	0,475	177
	Total	5,458	1,021	311
Influence of packaging	Male	3,058	0,506	134
	Female	2,894	0,579	177
	Total	5,952	1,085	311

Table 6.7 illustrates that male students perceive the marketing influence of e-cigarettes and the influence of packaging more than their female counterparts.

Table 6.8: Kruskal-Wallis One-way ANOVA: Key Dimensions of the Study and Age

Key Dimensions of the Study	Chi-Square	P-value
Marketing influence of e-cigarettes	3,915	0,141
Influence of packaging	9,433	0,009**
Regulation in SA	3,995	0,136

**p<0.01; *p<0.05

The results in Table 6.8 show that there is a significant difference in the perceptions of students varying in age regarding the influence of packaging, at the 1% level of significance. No other significant differences exist. In order to determine where the significant differences lie, mean analyses were undertaken (Table 6.9).

Table 6.9: Mean Analyses: Key Dimensions of the Study and Age

Key Dimensions of the Study	Age	Mean	Std. Deviation	N
Influence of packaging	18-24 years	2,938	0,541	281
	25-34 years	3,216	0,622	29
	35 years and over	3,273	-	1
	Total	2,965	0,554	311

Table 6.9 indicates that the perceptions of each age group differ from one another regarding the influence of packaging. For instance, 25-34 years old students have high perceptions on the influence of packaging compared to the 18-24-year age group.

Table 6.10: Kruskal-Wallis One-way ANOVA: Key Dimensions of the Study and Race

Key Dimensions of the Study	Chi-Square	P-value
Marketing influence of e-cigarettes	7,088	0,069
Influence of packaging	3,431	0,330
Regulation in SA	3,880	0,275

**p<0.01; *p<0.05

As illustrated in Table 6.10, there is no significant difference in the perceptions of students varying in race regarding the marketing influence of e-cigarettes, influence of packaging and regulation in South Africa.

Table 6.11:Kruskal-Wallis One-way ANOVA: Key Dimensions of the Study and Study Programme

Key Dimensions of the Study	Chi-Square	P-value
Marketing influence of e-cigarettes	12,677	0,013*
Influence of packaging	7,749	0,101
Regulation in SA	5,297	0,258

**p<0.01; *p<0.05

As illustrated in Table 6.11, there is a significant difference in the perceptions of students varying in study programme regarding the marketing influence of e-cigarettes, at the 5% level of significance. No other significant differences exist. Mean analyses were conducted in order to assess where the significant differences lie (Table 6.12).

Table 6.12: Mean Analyses: Key Dimensions of the Study and Study Programme

Key Dimensions of the Study	Study Programme	Mean	Std. Deviation	N
Marketing influence of e-cigarettes	Degree	2,695	0,483	261
	Honours	2,844	0,680	30
	Postgraduate Diploma	3,352	0,440	4
	Masters	2,678	0,474	13
	PhD	3,146	0,365	3
	Total	2,721	0,509	311

**p<0.01; *p<0.05

The results in Table 6.12 reveal that students enrolled for a postgraduate diploma place greater focus on marketing influence of e-cigarettes compared to the other students enrolled in different study programmes.

Table 6.13: Kruskal-Wallis One-way ANOVA: Key Dimensions of the Study and Level of Study

Key Dimensions of the Study	Chi-Square	P-value
Marketing influence of e-cigarettes	2,440	0,655
Influence of packaging	5,602	0,231
Regulation in SA	4,942	0,293

**p<0.01; *p<0.05

As outlined in Table 6.13, the results indicate that there is no significant difference in the perceptions of students varying in level of study. This means that there is no significant difference in the marketing influence of e-cigarettes, influence of packaging and regulation in South Africa in relation to students' level of study.

From the results reflected in Tables 6.6 to 6.13, it is evident that Hypothesis 2 may be partially accepted.

6.4 Statistical analysis of the questionnaire

The results in Table 6.14 below indicate that the Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity were computed which, respectively, reflected adequacy (0.846; Approx. Chi-Square 7356.760) and significance (df = 1378; Sig. = 0.000). Statistical analysis of the questionnaire will be undertaken to determine the questionnaire's validity and using reliability. Therefore, Factor Analysis and Cronbach's Coefficient Alpha will be tested.

Table 6.14: Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		**0,846**
Bartlett's Test of Sphericity	Approx. Chi-Square	7356,760
	df	1378
	Sig.	0,000

6.4.1 Validity of the questionnaire

Table 6.15: Validity of Questionnaire: Factor Analysis

	Component													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
QB1.1			-0,857											
QB1.2			0,936											
QB1.3			0,946											
QB1.4.1					0,772									
QB1.4.2					0,773									
QB1.4.3	0,727													
QB1.4.4	0,633													
QB1.4.5	0,515			0,357										
QB1.4.6					0,314			0,324						
QB1.4.7	0,707													
QB1.4.8					-0,440									0,345
QB1.4.9														0,670
QB1.4.10								0,791						
QB1.4.11								0,586					0,392	
QB1.4.12								0,760						
QB1.4.13	0,545								0,308					0,371
QB1.4.14	0,656													
QB1.4.15	0,694													
QB1.4.16									0,519					
QB1.4.17									0,693					
QB1.4.18	0,388			0,399										

Table 6.15 continued: Validity of Questionnaire: Factor Analysis

QB1.4.19	0,313				0,456									
QB1.4.20	0,623													
QB1.4.21				0,375									0,580	
QB1.4.22				0,748										
QB1.4.23				0,466	0,435									
QB1.4.24				0,420					0,424					
QB1.4.25	0,371			0,642										
QB1.4.26					0,541				0,370					
QB1.4.27			0,329	0,537										
QB1.4.28	0,302		0,361	0,414										
QB1.4.29							0,648						0,304	
QB1.4.30							0,756							
QB1.4.31							0,680							
QB1.4.32				0,321			0,577							
QC1		0,854												
QC2		0,860												
QC3		0,819												
QC4		-0,366											-0,405	
QC5		0,548	0,326											
QC6		0,613												
QC7						0,622								
QC8						0,307					0,576			
QC9						0,727								
QC10						0,683								

Table 6.15 continued: Validity of Questionnaire: Factor Analysis

QC11				0,376						0,376				
QD1										0,545				
QD2										0,372	0,434			
QD3	0,307										0,557			
QD4												0,726		
QD5												0,704		
QD6						0,328				0,670				
QD7						0,314				0,503				
Eigenvalue	10,590	3,254	2,719	2,490	2,143	1,783	1,654	1,455	1,383	1,314	1,260	1,184	1,130	1,084
% of Total Variance	19,982	6,140	5,130	4,697	4,044	3,364	3,120	2,745	2,610	2,480	2,378	2,234	2,132	2,044

The results in Table 6.15 show that 13 items load significantly on Factor 1 and account for 19.98% of the total variance. Of the 13 items, 12 items relate to the marketing influence of e-cigarettes and one item pertains to the regulation in South Africa. Since the majority of items relate to the marketing influence of e-cigarettes, Factor 1 may therefore be labelled likewise.

As indicated in Table 6.15, five items load significantly on Factor 2 which accounts for 6.14% of the total variance. Results further indicate that these five items relate to influence of packaging, which can then be labelled the same for Factor 2.

Table 6.15 reveals that Factor 3 has five items that load significantly and this accounts for 5.13% of the total variance. Four items relate to the marketing influence of e-cigarettes and one item to the influence of packaging. Since the majority of items relate to the marketing influence of e-cigarettes, Factor 3 can be labelled likewise.

Furthermore, Table 6.15 indicates that 11 items load significantly on Factor 4 and account for 4.70% of the total variance. Ten items relate to the impact of marketing influence of e-cigarettes and one item relates to the influence of packaging. The results indicate that the marketing influence of e-cigarettes has the highest loading of (0.748); hence, Factor 4 can be labelled likewise.

Table 6.15 shows that six items load significantly on Factor 5 and account for 4.04% of the total variance. All six items relate to the impact of marketing influence of e-cigarettes. Therefore, Factor 5 can be labelled accordingly.

As shown in Table 6.15, six items load significantly on Factor 6 and account for 3.36% of the total variance. More so, four items relate to the influence of packaging and the other two to the regulation in South Africa. Since the influence of packaging has the highest loading (0.727), Factor 6 will be labelled accordingly.

The results in Table 6.15 show that four items load significantly on Factor 7 and explain up to 3.12% of the total variance. Additionally, four items relate to the marketing influence of e-cigarettes, which will be labelled the same as for Factor 7.

Table 6.15 reveals that four items load significantly on Factor 8 and explain up to 2.74% of the total variance. All four items relate to the marketing influence of e-cigarettes. Therefore, Factor 8 will therefore be labelled similarly.

Moreover, the results in Table 6.16 indicate that five items load in Factor 9 and account for 2.57% of the total variance. Since these five items relate to the marketing influence of e-cigarettes, Factor 9 will be labelled accordingly.

The results in Table 6.15 also show that five items load in Factor 10 and account for 2.48% of the total variance. One item relates to the influence of packaging and four items to the regulation in South Africa. Since the regulation in South Africa has the highest loading (0.670), Factor 10 will therefore be labelled likewise.

Furthermore, the results in Table 6.15 show that three items load significantly on Factor 11 and account for 2.38% of the total variance. One item relates to the influence of packaging and two items to the regulation in South Africa. Since more items load to the regulation in South Africa, Factor 11 will be labelled likewise.

As shown in Table 6.15, the results indicate that two items load significantly in Factor 12 and account for 2.23% of the total variance. Since these two items relate to the regulation in South Africa, this Factor will be labelled the same.

The results in Table 6.15 show that three items load significantly in Factor 13 and account for 2.13% of the total variance. Two items relate to the marketing influence of e-cigarettes. Therefore, Factor 13 can be labelled accordingly.

Table 6.15 indicates that three items load significantly in Factor 14 and account for 2.04% of the total variance. Since these three items relate to the marketing influence of e-cigarettes, Factor 14 will be labelled the same.

From the results obtained in Table 6.15, nine factors (Factors 1, 3, 4, 5, 7, 8, 9, 13 and 14) were labelled as the marketing influence of e-cigarettes. In addition, two factors (Factor 2 and Factor 6) were labelled as the influence of packaging, and finally, three factors (Factor 10, Factor 11 and Factor 12) were labelled as the regulation in South Africa. All key dimensions of the study feature as factors.

6.4.2 Reliability of the questionnaire

The reliability of the questionnaire was statistically assessed using Cronbach's Coefficient Alpha (Table 6.16). For the scale to be considered reliable and internally consistent in its

measurement the Cronbach Alpha should be above 0.7; a Cronbach Alpha above 0.6 is acceptable (Pallant, 2013).

Table 6.16: Overall Reliability of the Questionnaire: Cronbach's Coefficient Alpha

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
0,900	0,893	53

The reliability of the questionnaire was assessed to measure the consistency of the results. The results reveal a Cronbach's Coefficient Alpha of 0.900 which demonstrates a strong level of inter-item consistency and reliability.

The reliability for individual dimensions was also computed (Table 6.17).

Table 6.17: Overall Reliability of the Questionnaire: Cronbach's Coefficient Alpha

Constructs	**Cronbach's Alpha**
Marketing influence of e-cigarettes	0,883
Influence of packaging	0,735
Regulation in SA	0,504

As indicated in Table 6.17, the regulation in South Africa is not internally consistent in its measurement as the Cronbach's Alpha values are less than 0.6, which is below the cut-off. In order to improve the Cronbach's Coefficient Alpha some items need to be deleted.

Cronbach's Coefficient Alpha (After deletion)

	Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
Regulation in SA	**0,571**	0,566	(QD2, QD3, QD6) 3

The Cronbach's Alpha of *Regulation in South Africa* after **deletion of items** could not be improved. Therefore, the reliability of key dimensions ranges from 0.571 to 0.893, thereby indicating that the reliability per dimension ranges from unsatisfactory (regulation in South Africa) to good (influence of packaging and marketing influence of e-cigarettes).

6.5 Conclusion

This chapter reported on the results of the descriptive and inferential statistics. Additionally, the reliability and validity were assessed to test the questionnaire. The SPSS results were presented in tabular and graphical form for more elaborative interpretation of the findings. The next chapter will be a discussion of the results of this study.

CHAPTER 7: Discussion of results

7.1 Introduction

Chapter seven discusses the findings generated from the study pertaining to students' perceptions of the key dimensions of e-cigarettes. Literature dictates that exposure to advertising and marketing has a major influence on the youth's smoking behaviour. Evidence of greater positive attitudes regarding intent to smoke, smoking initiation and smoking have been associated with the youth being exposed to e-cigarette promotion in movies, magazines and different types of media. Hence, the main purpose of this study is to assess the influence e-cigarette marketing has on shaping Generation Z UKZN students' perceptions of, attitudes toward, initiation and use of e-cigarettes.

The results obtained from the empirical analysis have been portrayed in tabular format and interpreted in the previous chapter. This chapter will continue to deliberate on how the results generated from this study impact on UKZN Generation Z students' perceptions of e-cigarettes. This will be in relation to the impact of the dimensions (influence of marketing on e-cigarette knowledge/attitude, packaging and regulation) and impact on the influence of tobacco substitute e-cigarette marketing. In addition, the impact of the biographical variables of the respondents in relation to the influence of tobacco substitute e-cigarette marketing will be reported on. The key sub-dimensions of the study will be deliberated upon further.

7.2 Discussion of the results

7.2.1 UKZN Generation Z students' perceptions and attitudes of the key dimensions of the study

This section will seek to explore the results generated from the study that pertain to the relevant key dimensions and sub-dimensions of the study.

- The first dimension investigated how marketing influences the perceptions of Generation Z UKZN students towards e-cigarettes in relation to smoking cessation and health risks/benefits.
- The second dimension focused on determining the influence packaging has on shaping Generation Z UKZN students' perceptions of e-cigarettes.

- Lastly, the third dimension aimed at uncovering students' perceptions of the regulation of e-cigarettes in South Africa.

7.2.1.1 The influence of e-cigarette marketing

- **E-cigarette knowledge**

In terms of respondents' perceptions of the sub-dimension of what students know about e-cigarettes, the empirical findings demonstrate that the majority of respondents (65.9%) reported awareness of e-cigarettes; 30% have used e-cigarettes with 16.4% reporting use in the past 30 days. In terms of respondents knowing how e-cigarettes work, there is a fairly even distribution of scoring opinions for this question. A total of 33.5% of respondents agreed with this statement and 38.3% disagreed, while 28.3% provided a neutral response.

In addition, a significant portion of respondents found that e-cigarettes are easily accessible; this may suggest that respondents have been exposed to e-cigarette shops which are in close proximity to the campus. This response is a favourable response for marketers, as they get to leverage the benefits of easy accessibility of their products. However, it is in the best interests of policymakers to ensure and prevent this from occurring.

This finding supports studies conducted by Agaku *et al.* (2021), Giovenco *et al.* (2016) and Wagoner *et al.* (2014), where the researchers identified e-cigarette shops were grouped around universities and most shops were established within the past five years. Agaku *et al.* (2021) showed strategic placement of e-cigarette shops was used as a form of promotion and advertisement. In contrast, some vape shops were further away from schools in school districts with higher proportions of the population living in poverty (Venugopal, Morse, Tworek and Chang, 2020).

- **E-cigarette initiation and use**

In terms of respondents' perceptions of the sub-dimension of e-cigarette initiation and use, the results indicate that a significant number of respondents disagreed (74.6%) with the statement that they use e-cigarettes because of their friends' influence. An insignificant number of respondents (9.3%) agreed that friends influence their decisions to start using e-cigarettes. This can suggest that respondents in this study are not influenced by friends, using e-cigarettes is their own choice. One possible explanation for the study's findings may be that peer e-cigarette use behaviour may have a stronger influence on adolescents and teenagers;

the older the respondents, the less likely they are to be influenced by friends as they mature. Liao, Huang, Huh, Pentz and Chou (2013) noted in their study that examined adolescents from grades 7 to 12 that the magnitude of friends' influence was in general higher during junior high school than high school. Peer influence was significant during junior high school and a decreasing trend was observed from grades 10 to 12. Thus, it can be assumed that the study followed the same trend as participants were university students and were less susceptible to peer influence.

In contrast, Wang *et al.* (2019) reported that one of the most common reasons why participants use e-cigarettes was because friends and family used them. Connolly (2016) noted that for the youth, vaping is a trendy social habit and the desire to emulate their peers is encouraging Millennials to use e-cigarettes and other vaping devices.

In this study, the majority of respondents (30.2%) found that e-cigarette use is not affordable; it can be assumed that the reason why the majority of respondents are not frequent e-cigarette users can be due to affordability. According to Simon, Camenga, Morean, Kong, Bold, Cavallo and Krishnan-Sarin (2018), past research has shown that e-cigarettes are more likely to be sold in higher income communities. Individuals with higher socio-economic status may be more desirable targets for e-cigarette advertisements because they are more likely to adopt new technologies like e-cigarettes and they have more disposable income to spend on e-cigarettes (Kennedy and Funk, 2016; U.S. Bureau of Labor Statistics, 2017). Liber, Drope and Stoklosa (2017) found that combustible cigarettes cost less than disposable e-cigarettes and e-liquids that are used with rechargeable e-cigarettes are cheaper per unit than combustible cigarettes, however the start-up cost is high. Emery, Vera, Huang and Szczypk (2014) found that e-cigarette use was higher among respondents with higher income levels. Surprisingly, Green, Gray, Sweeting and Benzeval (2020) cited in their study that socio-economic disadvantage was associated with vaping among youth, explaining that vaping was more likely for youth in disadvantaged than more advantaged groups.

According to a 2016 US Surgeon General report, the use of social media sites to market e-cigarettes is increasingly prevalent, due to their ability to reach teenagers and young adults most susceptible to peer and media influence. Pepper *et al.* (2019) cited that online sales make up a large portion of the entire market for both adolescents and adults; over one-third of teens who vape are estimated to purchase either online or in-store.

With regards to respondents checking for e-cigarette information on the internet and social media, the majority (67.7%) of respondents in this study stated they do not check for information on the internet about e-cigarettes, while 15.7% of respondents did check for information. This generation of the population is curious by nature about e-cigarettes and is likely to conduct research online about current e-cigarette users or to gather more information about e-cigarette flavours and sales. Similarly, in their study, Emery, Vera, Huang and Szczypk (2014) found that a relatively small proportion of their respondents reported having searched for (5%) or shared (2%) e-cigarette-related information across various communication channels. Emery *et al.* (2014) further noted that there was a negative age gradient in searching for information about e-cigarettes, with younger adults most likely to have searched; as age increases, the odds of searching for e-cigarette information significantly decreases.

Interestingly, in terms of respondents being exposed to e-cigarette advertising while using the internet, there is a fairly even distribution of scoring opinions for this question. A total of 39.5% of respondents agreed with this statement and 39.5% disagreed, while 20.9% provided a neutral response. This indicated that almost half of the respondents have come across e-cigarette advertisements while using the internet to search for other products and services. To add perspective to these findings, Emery *et al.* (2014) and Rom *et al.* (2015) found that e-cigarettes have been largely subjected to aggressive promotion over the internet. Emery *et al.* (2014) found that results of their research indicated high levels of awareness with 86% of their sample being aware of e-cigarettes and nearly half (47%) having heard about e-cigarettes via social media.

- **Perception and attitudes of health risks and benefits of e-cigarettes**

There have been numerous authors who have found that participants have different responses to the perception of e-cigarette risks. Some people claim that the use of e-cigarettes is safer compared to tobacco, while other studies believe that e-cigarettes are more harmful than their tobacco alternative as the effects of e-liquid chemicals are unknown (Glantz and Bareham, 2018, Hajek *et al.,* 2014; Sutfin *et al*., 2013). In terms of respondents' perceptions of health risks relating to the use of e-cigarettes, the majority of respondents (54.7%) are aware that there are differences between e-cigarettes and traditional cigarettes. In this study respondents

felt that e-cigarettes are not completely harmless (57.5%); the majority of respondents believe e-cigarettes are unsafe for both the user and bystanders (47%). Similarly, Etter (2010) found that respondents were concerned about the safety and toxicity of e-cigarettes.

In contrast to this study, the results contradict studies by Griesbach and Platts (2016), Mhazo, (2019), Wagoner *et al.,* (2016) and Zhu *et al.,* (2014); they found that e-cigarette users and young people who are familiar with e-cigarettes believe that they are the safer option, less addictive than the traditional tobacco cigarette and can help smokers quit smoking.

With regards to health risks associated with e-cigarette use, 34.4% of respondents were not aware of the health risks associated with e-cigarette use. In this study, respondents were aware that e-cigarettes are not completely safe, but most respondents were not aware of the specific risks associated with e-cigarette use. Similarly, Pokhrel, Herzog, Muranaka and Fagan (2015b) found that negative perceptions of e-cigarettes included fear of the unknown health risks linked with e-cigarette use, while Wackowski, Bover Manderski and Delnevo (2015) found that respondents in their study rated e-cigarettes as less harmful because they do not have real tobacco, do not burn or produce real smoke.

- **E-cigarettes as a cessation tool**

While e-cigarettes have been marketed as an aid to smoking cessation (Muposh and Dhurup, 2021) most of the participants in this study did not use e-cigarettes for cessation purposes. With regard to smoking cessation, the empirical findings indicate that a significant percentage of the respondents do not find that e-cigarettes help them to cope with nicotine addiction and a moderate proportion of respondents use e-cigarettes to help quit smoking. The results depict that e-cigarettes do not help respondents quit tobacco cigarette smoking and the majority of respondents (54%) do not prefer smoking e-cigarettes because they are less addictive than regular cigarettes, while 23.1% of participants use e-cigarettes because they are less addictive than traditional cigarettes. In addition, a considerable percentage of respondents (48%) would not recommend other young adults use e-cigarettes instead of traditional cigarettes. It can be deduced that the majority of the respondents do not feel e-cigarettes are an effective smoking cessation tool.

The findings are supported by the observation of Mhazo (2019), where he indicated that the majority of the students in the study did not make use of e-cigarettes as a means to quit

tobacco smoking. This notion is further supported by Amato *et al.* (2017), Weaver *et al.* (2018) and Wu *et al.* (2018) whose studies found that smoking cessation was not associated with e-cigarette use.

In contrast, some studies observed positive associations between e-cigarette smoking cessation and reduced cigarette use (Mantey *et al.,* 2017; Barbeau *et al.,* 2013; Berry *et al*., 2018). They found that participants who cited using e-cigarettes to quit smoking had better odds of smoking cessation.

7.2.1.2 Packaging

In the context of respondents' perceptions of packaging, the majority of participants (61.1%) found e-cigarette packaging appealing and attention grabbing. Kotler and Keller (2012) noted that packaging is the consumer's first encounter with the product and good packaging attracts the buyer and motivates product choice. According to Hamdar, Al Dana and Al Chawa (2018), packaging updates and redesigns can have an instant impact on sales; it has been demonstrated that packaging influences consumers' perceptions of products and their buying decision. This study found that colourful, youth-orientated packaging entices participants to try e-cigarettes. Cohn, Johnson, Abudayyeh, King and Wilhelm (2021) suggested that colours and descriptors on e-cigarette packaging influence perceptions of appeal, harm and addictiveness. In contrast, a 2015 Eurobarometer report found that participants were not influenced by design features such as the colourful packaging or the design packaging or shape of e-cigarette products, with only 4% of participants citing packaging as a factor in buying behaviour (TNS Opinion & Social, 2015).

However, the majority of participants (38.9%) felt that e-cigarette packaging was not informative and did not provide reliable content information. According to Kotler (2022), label information aids as a verbal communication element that assists to communicate information about a product to customers. Similarly, Kong, Derrick, Abrantes and Williams (2018) found that product content was seldom stated outside the e-cigarette packaging, only 44.6% of orders included health warnings, 60% of products provided product information and some products had unsupported claims. Another study found that some e-cigarette users expressed concerns about the inadequate labeling and product information on e-cigarette packaging (Etter, 2010; McQueen, Tower and Sumner, 2011).

- **Health warnings on packaging**

A warning can influence consumers' views concerning harm perceptions with product use, but warnings do not necessarily impact all user groups consistently (Berry, Burton and Howlett, 2017). According to the majority of the respondents in this study, health warnings on e-cigarette packaging do not discourage use and do not have significant impact on respondents' consumption of e-cigarettes. Similarly, the results of a study done by Wackowski, Hammond, O'Connor, Strasser and Delnevo (2016) found that several current e-cigarette smokers recognised that several warning messages may be significant, but notably for some participants, warning messages would not personally make them quit e-cigarette use.

In contrast, Katz, Shi, Erkkinen and Hatsukami (2020) demonstrated that adding health and risk warnings will result in a lower willingness to use the product through enhanced counter-arguing and risk perception. Similarly, Sanders-Jackson *et al*. (2015) reinforce the above findings as they suggest that exposure to health warnings was linked to reduced cravings for e-cigarettes amongst e-cigarette users who have experienced cravings before and reduced intention to purchase amongst all participants. Participants who had witnessed industry-themed warnings had reported increased harm perceptions.

- **Purchasing behavior**

In the context of understanding the perceptions of UKZN students regarding the effectiveness of the influence of e-cigarette packaging on purchasing behaviour, the results of the study reveal that the majority of the respondents in this study believe that e-cigarette packaging is eye-catching and piques their curiosity. The findings of Venter, van der Merwe, de Beer, Kempen and Bosman (2011) show that packaging provides virtual stimuli to potential consumers, which is essential to attract their attention and shape perceptions of product quality. Respondents found e-cigarette packaging appealing and it enticed them to try the product. Participants reported low e-cigarette harm perceptions relating to e-cigarette packaging that they found "attention-grabbing" and "appetising and fun to use". This finding supports the findings of Cohn *et al.* (2021) that individuals exposed to packages in bright colours in contrast to those in black and white reported lower perceptions of harm and addictiveness and reported greater product appeal. Similarly, a study by Abdelaziz *et al.* (2021) further notes that the marketing of youth-directed packaging products gives a no or

low harm effect perception to their users. On the contrary, a 2012 Populus survey reported that respondents cited that plain packaging would not have stopped them from smoking (Yonder Consulting, 2021).

7.2.1.3 Regulations

In terms of respondents' perceptions of e-cigarette regulation, participants feel that there is a lack of current regulation in South Africa. Overall, the respondents advocated for better regulation of e-cigarettes, specifically concerning the sale of e-cigarettes. This finding is consistent with the studies conducted by Griesbach and Platts (2016) and Wipfli *et al*. (2020), where they reported that participants in their study suggested a general level of support for the regulation of e-cigarettes, either in product regulation or regulation of sale and use. In contrast, Majmundar, Chou, Cruz and Unger (2019) reported that respondents did not support the regulation of e-cigarettes.

In terms of respondents' perception of the impact of the Covid-19 pandemic on e-cigarette use, there is a fairly even distribution of scoring opinions for this question. A total of 25% of respondents agreed with this statement and 31% disagreed, while 44,4% provided a neutral response that there is no relationship between vaping and the progression of Covid-19. Although there has been little research on e-cigarettes and the impact of their use during Covid-19, studies that have been conducted suggest that vaping is a hazardous component for the advancement of the virus (Gaiha, Cheng and Halpern-Felsher, 2020; Kale, Herbec, Perski, Jackson, Brown and Shahab, 2021; Patanavanich and Glantz, 2020; Truth Initiative, 2021). It can be assumed that these results illustrate that companies have utilised the pandemic to promote their products, a few retailers have even marketed e-cigarettes as 'the safer alternative'. In the study a significant portion of respondents did not discontinue the use of e-cigarettes after the e-cigarette ban was lifted despite the government warning about risk factors for Covid-19, as nicotine damages the lungs and makes users more susceptible to illness. Consistent with these views, Rotermann (2020) found that there was unchanged weekly consumption of e-cigarettes and other substances like alcohol and cannabis during the pandemic.

In contrast with the study's findings, Hopkins and Al-Hamdani (2021) found reduced vaping behaviour after learning about the pandemic. This is in line with the findings of another study that suggests that young (<21 years old) e-cigarette users in the US who changed their vaping

behaviours after the pandemic onset were more likely to report decreased use than increased use (Gaiha, Lempert and Halpern-Felsher, 2020).

7.2.1.4 Biographical variables

The impact of the biographical variables (gender, age, race, study programme and level of study) on the key sub-dimensions relating to the influence of e-cigarette marketing on Generation Z Consumers was assessed using nonparametric tests namely the Mann-Whitney U test and the Kruskal-Wallis ANOVA test.

- **Gender**

As evident from the results of the research instrument, females dominated this study with a total of 177, whereas the male population constituted 134 respondents. It can be assumed that females make up the majority of the university population in many countries as indicated by Conger and Long (2013). Furthermore, the empirical results indicate that there is a significant difference in the perceptions of male and female students regarding the marketing influence of e-cigarettes and the influence of packaging. The results indicate that male students are influenced more by marketing of e-cigarettes and the influence of packaging than their female counterparts. A study by Littlefield, Gottlieb, Cohen and Trotter (2015) also found that e-cigarette use was higher among male students as compared to female students. According to Hitchman and Fong (2011), these gender differences in e-cigarette use mirror those of tobacco smoking where smoking prevalence rates are higher in males as compared to females. Similarly, USDHHS (2016) found that male students had a higher rate of e-cigarette use compared to female students. However, no other significant differences exist.

- **Age**

The research findings indicate that the majority of the respondents were from the 18-24 year category. Based on the results, it can be assumed that the greater part of the university population comprises of students from this age category. Mhazo (2019) noted that perceptions of e-cigarettes can differ according to age as some studies have indicated that young adults are more likely than older adults to use e-cigarettes because they are considered as “cool” or “trendy” whereas older adults primarily see such devices as mechanisms that help to reduce or quit smoking.

Moreover, the results dictate that perceptions of each age group differ from each other regarding the influence of packaging. For instance, 25-34 year old students have high perceptions of the influence of packaging compared to the 18-24 year age group.

- **Race**

The majority of respondents were within the African race group. From this finding, it can be inferred that the university population is dominated by respondents from the African race group. According to the 2021 mid-year population estimates conducted by Statistics South Africa, the African racial group dominates South Africa with an estimate of 80.9% (Statistics South Africa, 2021); the research finding reflects this estimate. The majority (89.1%) of the respondents from the study comprised of the African race group.

In addition, the empirical findings indicate that there is no significant difference in the perceptions of students varying in race regarding the marketing influence of e-cigarettes, influence of packaging and the regulation of e-cigarettes in South Africa. Similarly, Littlefield, Gottlieb, Cohen and Trotter (2015) found no difference in e-cigarette perceptions and use with regards to race/ethnicity.

In contrast, Emery *et al.* (2014) found that non-white respondents were less likely to have been exposed to e-cigarette information. Few studies have found that non-white respondents were less likely to have ever tried an e-cigarette compared to whites (Harlow, Stokes and Brooks, 2019; Webb Hooper and Kolar 2016).

- **Study programme**

The research has revealed that most of the respondents' were studying towards a degree. The research findings indicate that the majority (90.4%) of the respondents were from the 18-24 year category. Based on the results it can be assumed that the majority of students that are completing their degree are between the ages of 18 and 24. Moreover, the results also demonstrate that there is a significant difference in the perceptions of students varying in study programme regarding the marketing influence of e-cigarettes. The findings depict that students enrolled for a postgraduate diploma place greater focus on marketing influence of e-cigarettes as compared to the other students enrolled in different study programmes. It can be assumed that postgraduate diploma students are more mature and some are working; this can suggest they have higher spending power, are individuals that have more disposable income to spend on e-cigarettes and may be more desirable targets for e-cigarette advertisements

because they are more likely to adopt new technologies like e-cigarettes (Kennedy and Funk, 2016; U.S. Bureau of Labor Statistics, 2017). Similarly, Harlow, Stokes and Brooks (2019) found that e-cigarette use was higher among participants with higher income levels.

- **Level of study**

The research has revealed that most of the respondents are in their third-year of study. Based on these findings, it can be assumed that respondents within the third level of education have more educational experience and interest in answering the questions pertaining to the study dimensions. In addition, the results indicate that there is no significant difference in the perceptions of students varying in level of study. This means that there is no significant difference in the marketing influence of e-cigarettes, influence of packaging and regulation in South Africa in relation to students' level of study.

7.3 Conclusion

Chapter seven provided a comprehensive discussion on the key dimensions of the influence of marketing. According to the empirical findings of this study, it can be inferred that the majority of respondents know what e-cigarettes are and that they are easily accessible to them. The majority of respondents agreed that seeking information about e- cigarette products from relatives prior to making a final choice is always advisable. This suggests that peers do influence respondents' decisions. Chapter eight will discuss recommendations and conclusions based on the results generated from the study.

In this study the majority of respondents find that e-cigarettes are not affordable; it can be assumed that the reason why the majority of respondents are not frequent e-cigarette users is due to affordability.

The results depict that the majority (67.7%) of respondents in this study do not check for information on the internet about e-cigarettes, while 15.7% of respondents check for information. This population could be curious about e-cigarettes and want to know more, or that current e-cigarette users want more information about e-cigarette flavours and sales. Interestingly, in terms of respondents being exposed to e-cigarette advertising while using the internet, there is a fairly even distribution of scoring opinions for this question. A total of 39.5% of respondents agreed with this statement and 39.5% disagreed, while 20.9% provided

a neutral response. This indicated that almost half of the respondents have come across e-cigarette advertisements while using the internet for something else.

In terms of respondents' perceptions of health risks relating to the use e-cigarettes, the majority of respondents are aware that there are differences between e-cigarettes and traditional cigarettes. In this study respondents felt that e-cigarettes are not completely harmless; the majority of respondents believe e-cigarettes are unsafe for both the user and bystanders. Moreover, the results indicate that 34.4% of respondents were not aware of the health risks associated with e-cigarette use. The results indicate that respondents were aware that e-cigarettes are not completely safe, but most respondents were not aware of the specific risks associated with e-cigarette use.

The empirical findings of the study indicate that a significant percentage of the respondents do not find that e-cigarettes help them to cope with nicotine addiction and a moderate proportion of respondents use e-cigarettes to help quit smoking. The results depict that e-cigarettes do not help respondents quit tobacco cigarette smoking and the majority of respondents do not prefer smoking e-cigarettes because they are less addictive than regular cigarettes. In addition, a considerable percentage of respondents would not recommend other young adults use e-cigarettes instead of traditional cigarettes. It can be deduced that the majority of the respondents do not feel e-cigarettes are an effective smoking cessation tool.

The majority of participants found e-cigarette packaging appealing and attention grabbing. This study found that colourful, youth-orientated packaging entices participants to try e-cigarettes. The results of the study reveal that the majority of the respondents believe that e-cigarette packaging is eye-catching and piques their curiosity. Respondents found e-cigarette packaging appealing and that it enticed them to try the product. Participants reported low e-cigarette harm perceptions relating to e-cigarette packaging they found "attention-grabbing" and "appetising and fun to use".

However, the majority of participants felt that e-cigarette packaging was not informative and did not provide reliable content information. According to the majority of the respondents, health warnings on e-cigarette packaging do not discourage use and do not have significant impact on respondents' consumption of e-cigarettes.

In addition, the results portray that the participants feel that there is a lack of current regulation in South Africa. Overall, the respondents advocated for better regulation of e-

cigarettes, specifically concerning the sale of e-cigarettes. The majority of respondents believed that there is no relationship between vaping and the progression of Covid-19. In the study a significant portion of respondents did not discontinue use of e-cigarettes after the e-cigarette ban was lifted despite the government warning about risk factors for Covid-19, as nicotine damages the lungs and makes users more susceptible to illness.

Furthermore, the impact of the respondents' biographical variables (gender, age, race, study programme and level of study) on the key dimensions in relation to the influence of e-cigarette marketing was deliberated.

The subsequent chapter will explicate the recommendations and conclusions based on the results generated from the study.

CHAPTER 8: Recommendations and conclusion

8.1 Introduction

In chapter eight, a precise summary of the empirical findings is given. In addition, the recommendations for policymakers and health workers will be discussed. Moreover, the recommendations for further research will be deliberated upon and finally, the conclusions based on the results of this study will be explained.

The findings from this study provide insight into young adults' perceptions, attitudes and behaviour in relation to e-cigarettes, and how such perceptions are shaped. Therefore, having insight into the perceptions that the youth have and determining resources that provide them with data in relation to e-cigarettes contribute in-depth knowledge as to how various effective public interventions could be planned and help policymakers to set appropriate regulations. The recommendations presented in this chapter will assist public health workers develop direct campaigns or interventions to help inform the youth, specifically university students, about scientific knowledge with regards to health risks, unproven marketing claims, efficacy and addiction related to e-cigarette use.

8.2 Empirical findings based on the research objectives

Firstly, the empirical findings depict that there is a positive relationship between e-cigarette marketing and e-cigarette awareness. This study sought to determine the influence e-cigarette marketing has towards e-cigarette knowledge. Students at UKZN Westville campus know what e-cigarettes are, how they work and from where to access them. The majority of respondents noted that e-cigarettes are positively presented on social media. The empirical findings thus declare that respondents are exposed to e-cigarette advertising while using the internet and e-cigarette marketing does influence students' perceptions.

E-cigarette marketers and commercials present e-cigarettes as a safer alternative to tobacco. This study has strived to concentrate on students' awareness of the safety and health risks related to e-cigarette use. The findings illustrate that students are aware that e-cigarettes are not completely harmless, but it was found that while students at UKZN Westville Campus are aware that e-cigarettes are not completely safe, the majority of respondents are not aware of the health risks associated with e-cigarette use. Respondents found that e-cigarette packaging did not have enough information with regards to e-cigarette content.

While e-cigarettes have been marketed as an aid to smoking cessation, according to the findings of the study, most respondents did not use e-cigarettes for smoking cessation. The findings illustrate that e-cigarettes do not help respondents to cope with nicotine addiction.

This study has strived to concentrate on how packaging influences Generation Z perceptions of e-cigarettes. According to the findings of the study it can be implied that there is a significant positive relationship between e-cigarette packaging and young adults' positive perceptions. When e-cigarette producers use colourful, youth-orientated packaging, it is likely to influence consumers in a positive manner and increase consumers' purchase intentions. Furthermore, colourful, youth-orientated packaging creates perceptions of lower risk. In this study it was found health warnings on e-cigarette packaging do not discourage use and do not have a significant impact on respondents' consumption of e-cigarettes. According to students, health warnings on branded packs did not discourage e-cigarette use. This may suggest that colourful and bright packaging designs with positive imagery, which were viewed as fun and appealing by participants, might reduce the seriousness or impact of health warnings.

The use of e-cigarettes by not only young adults but also adolescents reflects the ease with which they are accessed, especially in a country with no legislation that regulates the distribution, sale and use of e-cigarettes. Respondents found that there is a lack of current regulation in South Africa and e-cigarettes are easily accessible. Overall, UKZN Westville campus students advocated for better regulation of e-cigarettes, specifically concerning the sale of e-cigarettes.

8.3 Recommendations based on the findings of the study

- **Influence of e-cigarette marketing**

E-cigarettes have been aggressively advertised through TV, radio, magazines, newspapers and social media. Findings indicated e-cigarette users and non-users reported seeing e-cigarette advertising and receiving information about e-cigarettes through social media. The implication of the findings showed that there has been exposure to e-cigarette advertising among UKZN students. Taking the respondents' perceptions of how e-cigarettes are presented on social media, it was found that e-cigarettes are positively presented on social media. It is therefore recommended that policymakers and public health organisations increase e-cigarette awareness especially through utilising platforms such as social media

networks where young people access information. This can be done by blogging more information on social media platforms in ways that are easy to understand. Policymakers can also subject e-cigarettes to the same marketing restrictions that apply to conventional cigarettes which include TV, social media, newspapers and outdoor marketing.

- **Risk perception**

Taking the respondents' perceptions of e-cigarette risks and safety into consideration, it was found that respondents were not aware of the risks of e-cigarette use. It is recommended that since social media platforms have the ability to reach and influence a huge audience, public health organisations should appropriately inform students of the potential danger associated with e-cigarette use. Simultaneously, tobacco control advocates may likewise consider developing health messages to counter "pro" e-cigarette content on the internet and develop health campaigns. Moreover, public health messaging should be accurate and evidence-based if it is to gain credibility with students, particularly regarding the different consumption patterns relating to puff, inhalation and toxins in relation to e-cigarettes. Furthermore, in order to maximise the influence of health messages on students in the future, it is worth studying which kind of message framing and advertising appeal is the most attractive to people and whether there are any opinion leaders among people. Opinion leaders, celebrity endorsers and electronic word-of-mouth are very effective channels for marketing and influence trends and purchase behaviour especially among younger consumers.

- **Smoking cessation**

In terms of the respondents' perceptions of smoking cessation, is important to note that students do not consider e-cigarettes as an effective smoking cessation tool. It is recommended that policymakers and tobacco control advocates prohibit claims that e-cigarettes are effective smoking cessation aids until e-cigarette companies provide sufficient evidence that, as actually used in the real world, e-cigarettes are effective for smoking cessation. This needs to be validated with scientific facts and publicised on social media and on packaging and labels in order to fully inform users and potential users.

- **Packaging**

Taking the respondents' perceptions of e-cigarette packaging into consideration, it is recommended that policymakers should mandate that all e-cigarette products should list exact ingredients and components that the product contains with visible age restrictions and health

warnings like tobacco products. From this study, it is evident that students overlook health warnings on e-cigarette packaging. The bright, colourful, youth-oriented packaging may reduce the seriousness or impact of health warnings and could deflect attention from the health warning contained on the label. Hence, it is recommended that policymakers should issue product packaging standards similar to tobacco products where the primary warning has to be placed at the top and must occupy 15% of the front of the package while packaging cannot be bright, colourful and youth-orientated.

- **Regulation**

With reference to the respondents' perceptions of regulations, it is recommended that the South African government speedily pass the control of Tobacco Products and Electronic Delivery Systems Draft Bill that is currently under consideration. Classifying e-cigarettes as tobacco-related products will not only help to reduce the use of e-cigarettes in areas where smoking is prohibited and reduce e-cigarette use by minors but may also alter the perception that these products are safe.

The findings indicate that most UKZN students feel that e-cigarettes are easily accessible. Hence, it is recommended that e-cigarette vendors should need to be licensed and registered with the local government. In general, in the case of tobacco-related licensing, a business is approved to produce, distribute or sell tobacco products as long as it conforms to every significant regulation.

Licensing isn't just a significant method for monitoring who is selling tobacco items, it can also be a tool to restrict the density and location, for example proximity of e-cigarette sellers to schools. Additionally, it is recommended that displayed self-service access to e-cigarette products should be prohibited, and products should only be kept behind the counter and only be handled by retailers.

Table 8.1 Recommendations to Marketers Prompting Tobacco Substitute E-cigarette Marketing on Generation Z Consumers

Dimensions	*Recommendations*
Influence of e-cigarette marketing	• Policy makers and public health organizations increase e-cigarette awareness through social media networks. • This can be done by blogging more information on social media platforms in ways that are easy to understand. • Subject e-cigarettes to the same marketing restrictions that apply to conventional cigarettes . • Subject e-cigarettes to marketing restrictions that include a ban on social media, TV, radio and oudoor marketing.
Risk perception	• Inform students of potential harms associated with e-cigarette use. • Public health messaging should be accurate and evidence-based if it is to gain credibility with students, particularly in relation to the different consumption patterns relating to puff, inhalation and toxins for e-cigarette • Developing health messages to counter "pro" e-cigarette content on the internet and communication networks • Developing health campaigns.
Smoking cessation	• Prohibit claims that e-cigarettes are effective smoking cessation aids until e-cigarette companies provide sufficient evidence of effectiveness. • Providingsufficient evidence that, as actually used in the real world, e-cigarettes are effective for smoking cessation. • Ensuring information is validated with scientific facts and publicized on social media and on packaging and labels in order to fully inform users and potential users
Packaging	• E-cigarette products should list exact ingredients and components the product contains with visible age restrictions and health warnings like tobacco products. • Mandate product packaging standards. • Policy makers should issue product packaging standards similar to tobacco products where the primary warning must be placed at the top and must occupy 15% of the front of the package. • Regulating bright, colourful and youth-orientated packaging.
Regulation	• South African government should speedily pass the control of Tobacco Products and Electronic Delivery Systems Draft Bill that is currently under consideration. • E-cigarette vendors should be required to be licensed and registered with the local government. • Displayed self-service access to e-cigarettes products should be prohibited. • E-cigarette products should only be handled by retailers instore.

8.4 Recommendations for future research

There are some limitations to the current study, offering implications for future research. First, this study has been limited to University of KwaZulu-Natal Westville campus students. Additional research on this topic should be extended to various other tertiary institutions nationally as well as globally. Additionally, future studies should examine whether e-cigarette usage rates are similar between young people who are university students and those who do not attend school.

The study was cross sectional, it is possible that the amount of time exposed to different e-cigarette marketing can have a significant effect on students' perceptions. Future studies should examine longitudinal effects of exposure to e-cigarette marketing. A study following students over time could be used to test these findings. Such a design could evaluate responses to packaging at baseline along with individuals' smoking status or susceptibility, and then follow-up measures of smoking behaviour at a later date. This would distinguish any change in the smoking status of respondents and connect this with marketing.

The study was designed to primarily examine the influence of packaging design and health warnings on students' perceptions. The majority of students noted that health warnings would not discourage e-cigarette use. This has raised a potential gap in the research. The health warnings on branded packs didn't appear to discourage students from using e-cigarettes. This can suggest that distinctive and bright package designs with positive imagery, which were viewed as appealing and fun by students, may lower the seriousness or impact of health warnings. There is therefore a need to investigate the impact of packaging design on health warning salience.

8.5 Conclusion

This chapter highlighted some of the recommendations that policymakers and tobacco control advocates need to be aware of when setting regulations for e-cigarette products. The recommendations generated from the results of the study will assist public health workers to develop direct campaigns or interventions to help inform the youth about scientific knowledge with regards to health risks, unproven marketing claims, efficacy and addiction. In addition, the recommendations for future research were deliberated upon in tandem with a synopsis of the empirical findings.

As stated earlier in the introductory chapter, the aim of this study was to examine how marketing influences young adults' perceptions and attitudes around the initiation and use of e-cigarettes, the benefits/risk perceptions associated with e-cigarette use, the role e-cigarette packaging plays in consumer behaviour and attitudes, e-cigarette effectiveness as a cessation tool and finally the influence of the regulatory environment on young adults' perceptions and attitudes about e-cigarettes. In addition, the study sought to establish young adults' perceptions about e-cigarette use during the Covid-19 pandemic.

The empirical findings thus indicate that marketing efforts by e-cigarette marketers do influence students' perceptions. Furthermore, the study also specifies that there is a significant relationship between the dimensions that were explored in this study. Moreover, according to the empirical findings, it can be inferred that packaging has a significant influence on students' positive perceptions about e-cigarettes. After reflecting upon the above-mentioned, the purpose of this study has been fulfilled.

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Appendices

Appendix A: Letter of Informed Consent

UKZN HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE (HSSREC)

APPLICATION FOR ETHICS APPROVAL

For research with human participants

Information Sheet and Consent to Participate in Research

Date:

Good day

My name is Lindeliwe Zungu and I am a MCom (Marketing) student in the School of Management, Information Technology and Governance at the University of KwaZulu-Natal Westville Campus. I can be contacted on 0622087146; email: 219058032@stu.ukzn.ac.za. My supervisor is Dr D Oodith (031 2607850; email: oodithd@ukzn.ac.za).

You are being invited to consider participating in a study entitled: *The influence of tobacco substitute e-cigarette marketing on Generation Z consumers: A UKZN perspective.* The aim of this study is to determine the influence e-cigarette marketing has towards shaping Gen Z University of KwaZulu-Natal (UKZN) students' perceptions, attitudes, initiation and use of e-cigarettes. This study also aims to examine the influence the Covid-19 pandemic has had on young adults' perceptions of and attitudes toward e-cigarettes.

If you choose to participate and remain in the study, you will be asked to complete an online questionnaire, which should take you about 15 minutes to complete. Through your participation, I hope to uncover how marketing influences young adults' perceptions of and attitudes around: the initiation and use of e-cigarettes, the benefits/risks perceptions associated with e-cigarette use, the role e-cigarette packaging plays on consumer behaviour and attitudes, effectiveness of e-cigarettes as a cessation tool and the influence of the regulation environment on young adults' perceptions of and attitudes toward e-cigarette use. In addition, I hope to establish young adults' perceptions about e-cigarettes during the Covid-19 pandemic.

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (approval number HSSREC/00003180/2021).

In the event of any problems or concerns/questions you may contact the researcher at 219058032@stu.ukzn.ac.za or 0622087146 or the UKZN Humanities and Social Sciences Research Ethics Committee, contact details as follows:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001

Durban 4000

KwaZulu-Natal, SOUTH AFRICA

Tel: +27 31 2604557; Fax: +27 31 2604609

Email: HSSREC@ukzn.ac.za

Your participation in the study is voluntary and by participating, you are granting the researcher permission to use your responses. You may refuse to participate or withdraw from the study at any time with no negative consequence. There will be no monetary gain from participating in the study. Your anonymity will be maintained by the researcher and the School of Management, I.T. & Governance and your responses will not be used for any purposes outside of this study.

All data, both electronic and hard copy, will be securely stored during the study and archived for five years. After this time, all data will be destroyed.

If you have any questions or concerns about participating in the study, please contact me or my research supervisor at the numbers listed above.

Sincerely

Lindeliwe Zungu

-

CONSENT TO PARTICIPATE

I _____have been informed about the study entitled**:** ***The influence of tobacco substitute e-cigarette marketing on Generation Z consumers: A UKZN perspective,*** by Lindeliwe Zungu **(**0622087146; email: 219058032@stu.ukzn.ac.za).

I understand the purpose and procedures of the study.

I have been given an opportunity to ask questions about the study and have had answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any of the benefits that I usually am entitled to.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at 0622087146; email: 219058032@stu.ukzn.ac.za.

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001

Durban

4000

KwaZulu-Natal, SOUTH AFRICA

Tel: +27 31 2604557; Fax: +27 31 2604609

Email: HSSREC@ukzn.ac.za

_____ _____

Signature of Participant **Date**

_____ _____

Signature of Witness **Date**

(Where applicable)

_____ _____

Signature of Translator **Date**

(Where applicable)

Appendix B: Questionnaire

Questionnaire

.....

SECTION A: Demographics

Please answer all of the following questions below by ticking the most appropriate box.

1. Gender:

Male	Female
1	2

2. Age (years):

18-24 years	25-34 years	35 years and over
1	2	3

3. Race:

African	Coloured	Indian	White
1	2	3	4

4. Indicate programme of study registered for:

Degree	Honours	Postgraduate Diploma	Masters	PHD
1	2	3	4	5

5. Indicate the level of study:

First year	Second year	Third Year	Fourth Year	Other
1	2	3	4	5

.....

SECTION B: Knowledge and perceptions toward e-cigarettes

Please indicate the most suitable responses to the questions set below:

1.1 Have you used e-cigarettes?

Yes	**No**
1	2

1.2 If so, how recently?

I have not used e-cigarettes	Within the last 7 days	Within the last 30 days	Within the last 6 months	Within the last year
1	2	3	4	5

1.3 How frequently do you use one e-cigarette?

I have not used e-cigarettes	Within the last 7 days	Within the last 30 days	Within the last 6 months
1	2	3	4

1.4 Please indicate how strongly you disagree or agree with each statement below by ticking the appropriate column.

1= Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree

	Likert Scale	**1**	**2**	**3**	**4**	**5**
NO	**STATEMENT**	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
1.	I have clear knowledge about e-cigarettes.					
2.	I know what e-cigarettes are.					
3.	E-cigarettes are safe.					

4.	Smoking e-cigarettes is completely harmless.					
5.	I prefer smoking e-cigarettes as they are less addictive than regular cigarettes.					
6.	E-cigarettes are easily accessible.					
7.	The use of e-cigarettes is less harmful for both users and bystanders.					
8.	It is my opinion that no differences exist between e-cigarettes and traditional cigarettes.					
9.	E-cigarette marketing and use in South Africa is a concern.					
10.	E-cigarettes are positively presented on social media.					
11.	E-cigarette marketing on social media does not highlight health concerns regarding consumption and risks.					
12.	E-cigarettes are positively presented on social media as compared to traditional cigarettes.					
13.	The use of e-cigarettes helps with quitting tobacco cigarette smoking.					
14.	I would recommend other young adults to use e-cigarettes instead of traditional cigarettes.					
15.	I support my family and friend's decision to use e-cigarettes.					
16.	I find the information advertised on social media about e-cigarettes to be highly informative, entertaining and influencing.					
17.	The sources that provide information about e-cigarettes are trustworthy.					
18.	E-cigarettes help me to cope with nicotine addiction.					
19.	I know how e-cigarettes work.					
20.	E-cigarettes have health benefits.					

21.	E-cigarettes are affordable.					
22.	I check for e-cigarette products on websites and social media.					
23.	I have come across e-cigarette advertising while using the internet.					
24.	E-cigarette websites can be a very reliable source of information.					
25.	I check for e-cigarette updates for new products on websites and social media handles.					
26.	I am well aware of the health risks associated with e-cigarettes.					
27.	I smoke e-cigarettes because my friends do it.					
28.	I find e-cigarettes appealing.					
29.	Seeking information about e-cigarette products from relatives prior to making a final choice is always advisable.					
30.	Few young adults read consumer articles relating to e-cigarette health risks and benefits in newspapers or magazines, and find online sources to be more knowledgeable about e-cigarettes and protect against misleading advertising.					
31.	It is important to share product information with friends and relatives about e-cigarette risks and benefits.					
32.	I usually consider advertisements for obtaining product information about the benefits and risks of e-cigarettes prior to purchase.					

.....

Section C: Packaging of e-cigarette

Looking at the above image of e-cigarettes, please indicate how strongly you disagree or agree with each statement below by ticking the appropriate column.

1= Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree

	Likert Scale	**1**	**2**	**3**	**4**	**5**
NO	**STATEMENT**	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
1.	The packaging gripped my attention.					
2.	The packaging was appealing.					
3.	The packaging suggested this product would be fun to vape and use.					
4.	The packaging immediately created a perception of danger to avoid this product.					
5.	I was intrigued by the packaging which led me to try out the product.					
6.	Attractive, bright packaging piques my curiosity leading me to experiment more with new products.					
7.	I feel that e-cigarette packaging provides reliable content					

	information.					
8.	Health warnings on e-cigarette packaging discourage use.					
9.	E-cigarette packaging is very informative.					
10.	E-cigarette packaging comes with easy instructions					
11.	E-cigarette warnings have no impact on my consumption.					

.....

Section D: Regulation of e-cigarette

Please indicate how strongly you disagree or agree with each statement below by ticking the appropriate column.

1= Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree

	Likert Scale	**1**	**2**	**3**	**4**	**5**
NO	**STATEMENT**	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
1.	I feel that e-cigarette sale, marketing and use should be regulated in South Africa.					
2.	E-cigarettes can be used indoors or in public spaces.					
3.	I feel that the banning of the sale of e-cigarette products during level 1 lockdown by the government was unnecessary as it is safer than tobacco products.					
4.	After the ban of e-cigarette					

	products was lifted, I have discontinued vaping.					
5.	The use of e-cigarettes increases my likelihood of contracting Covid-19 compared to a non-user.					
6.	I feel that the sale of e-cigarettes in South Africa is properly regulated.					
7.	I am aware that e-cigarettes should be sold only under prescription in South Africa.					

……..

END OF QUESTIONNAIRE!

Thank you for your co-operation and time in completing this document.

Appendix C: Change Of Title Letter

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

13 December 2022

Lindeliwe Zungu (219058032)
School of Management, IT & Governance
Westville Campus

Dear L Zungu,

Protocol reference number: HSSREC/00003180/2021
Original project title: The influence of tobacco substitute e-cigarette marketing on Generation Z consumers: A UKZN Perspective
Amended project title: The perception and attitude of Generation Z consumers on e-cigarette marketing: A University of KwaZulu-Natal perspective
Degree: Masters

Approval Notification – Amendment Application

This letter serves to notify you that your application and request for an amendment received on 08 December 2022 has now been approved as follows:

- Change in title

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form; Title of the Project, Location of the Study must be reviewed and approved through an amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

Best wishes for the successful completion of your research protocol.

Yours faithfully

[redacted]

Professor Dipane Hlalele (Chair)

/ms

Humanities and Social Sciences Research Ethics Committee
Postal Address: Private Bag X54001, Durban, 4000, South Africa
Telephone: +27 (0)31 260 8350/4557/3587 **Email:** hssrec@ukzn.ac.za **Website:** http://research.ukzn.ac.za/Research-Ethics
Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

Appendix D: Gatekeeper's Permission Letter

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

24 June 2021

Lindeliwe Zungu (SN 219058032)
School of Management, IT & Governance
College of Law and Management Studies
Westville Campus UKZN
Email: oodithd@ukzn.ac.za

Dear Lindeliwe

RE: PERMISSION TO CONDUCT RESEARCH

Gatekeeper's permission is hereby granted for you to conduct research at the University of KwaZulu-Natal (UKZN), towards your postgraduate studies, provided Ethical clearance has been obtained. We note the title of your research project is:

"The Influence of Tobacco Substitute E-cigarette Marketing on Generation Z Consumers: A UKZN Perspective".

It is noted that you will be constituting your sample as follows:

- With a request for responses on the website. The questionnaire must be placed on the notice system http://notices.ukzn.ac.za. A copy of this letter (Gatekeeper's approval) must be simultaneously sent to (govenderlog@ukzn.ac.za) or (ramkissoonb@ukzn.ac.za).

Please ensure that the following appears on your questionnaire/attached to your notice:

- Ethical clearance approval letter;
- Research title and details of the research, the researcher and the supervisor;
- Consent form is attached to the notice/questionnaire and to be signed by user before he/she fills in questionnaire;
- gatekeepers approval by the Registrar.

You are not authorized to contact staff and students using the 'Microsoft Outlook' address book. Identity numbers and email addresses of individuals are not a matter of public record and are protected according to Section 14 of the South African Constitution, as well as the PAIA and POPI Act. For the release of such information over to yourself for research purposes, the University of KwaZulu-Natal will need express consent from the relevant data subjects. Data collected must be treated with due confidentiality and anonymity.

Yours sincerely

[redacted]

DR KE CLELAND: REGISTRAR

Appendix E: Ethical Clearance Letter

08 September 2021

Miss Lindeliwe Zungu (219058032)
School Of Man Info Tech & Gov
Westville Campus

Dear Miss Zungu,

Protocol reference number: HSSREC/00003180/2021
Project title: The influence of tobacco substitute e-cigarette marketing on Generation Z consumers: A UKZN perspective
Degree: Masters

Approval Notification – Expedited Application

This letter serves to notify you that your application received on 10 August 2021 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

This approval is valid until 08 September 2022.
To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

All research conducted during the COVID-19 period must adhere to the national and UKZN guidelines.

HSSREC is registered with the South African National Research Ethics Council (REC-040414-040).

Yours sincerely,

[redacted]

Professor Dipane Hlalele (Chair)

/dd

Humanities and Social Sciences Research Ethics Committee
Postal Address: Private Bag X54001, Durban, 4000, South Africa
Telephone: +27 (0)31 260 8350/4557/3587 **Email:** hssrec@ukzn.ac.za **Website:** http://research.ukzn.ac.za/Research-Ethics
Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

Appendix F: Declaration of professional editing

LAUREN WALFORD PROOFREADING SERVICE

11/07/2022

To whom it may concern

This is to certify that I have proofread the dissertation by Lindeliwe Zungu (219058032) entitled: **"The Influence of Tobacco Substitute E-Cigarette Marketing on Generation Z Consumers: A UKZN Perspective."**

I have made any corrections to grammar, sentence structure and spelling which I felt necessary.

Regards,

Lauren Walford
+44 7434896010 (WhatsApp only)
lozboyle@gmail.com