

Dissertation

How does the design of e-cigarettes affect the consumer?

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Disclaimer

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This submission is the result of my own work. All help and advice (other than that received from tutors) has been acknowledged, and primary and secondary sources of information have been properly attributed. Should this statement prove to be untrue, I recognise the right and duty of the Board of Examiners to recommend what action should be taken in line with the Academic Board's Policy and Procedures governing Student Assessment.

Signed Clara Nakisa

Date 03/04/2024

Ethics disclaimer

I confirm that this work has gained ethical approval and that I have faithfully observed the terms of the approval in the conduct of this project.

Signed (student) Chakisa

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Figure 9-13 - Nakisa, C. (2024) 'How does the design of e-cigarettes affect the consumer?' Online Survey, Available in Appendix

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Abstract

With so many unknown factors around the rising uptake of e-cigarettes, more research is needed from the users, manufacturing companies and the government. Adolescents and non-smokers have begun vaping, an issue that needs investigation, especially concerning their health. This research uncovers how the changes in vape design affect the consumer, specifically the user demographics, environmental waste and the government and vape companies' response by interviewing the people directly involved.

The use of convergent Mixed Methods Research (MMR) provided in-depth details that quantitative or qualitative data alone would miss while conducting an online survey and interviews. Additionally, using thematic analysis with a general inductive approach allows multi-level analysis leading to more valid and replicable results.

As determined from the mixed method research, bright colours, flavours, and prices attract a younger demographic, specifically students and adolescents. Ex-smokers noticed an improvement in health by switching whereas those who had never smoked found an increase in anxiety. Peers generally don't mind the fact that people vape but feel that they can be inconsiderate, especially regarding the environment. All participants unanimously agreed more could be done to tackle environmental waste such as implementing recycling bins, changing the materials to be easily recycled or banning single-use vapes entirely. To conclude, vape design greatly affects the consumer: demographically, economically, environmentally and health-wise.

1.0 Introduction

With an estimated 82 million people using e-cigarettes (also known as vapes) globally in 2021 (Jerzyński, T. and Stimson, G.V. 2023), understanding the consumer's attraction to take up vaping is highly important. On the one hand, switching to e-cigarettes has allowed smokers to reduce the serious health damage caused by cigarettes; However, an increasing number of non-smokers have now taken up vaping as well (shown as 4.9% in 2021 (YouGov 2021)). This dissertation investigates the impact of vape design on this increase in vape use.

While there is an acknowledgement of underage vape use by The American Association (2018), a greater understanding of why it's happening is needed to prevent it. The environment is also at risk due to the improper disposal of single-use vapes causing bin fires from the batteries (Local Government Association, 2023) and wasting finite materials. A solution is needed urgently. The majority of previous studies are on the smoking background of people who now vape rather than how the marketing and design have had knock-on effects on a social, economic and environmental level. Do the companies realise how their designs may have influenced the next generation? Does the government recognise its responsibility in ensuring adolescents and the environment are protected from disposable vapes? Will the impending disposable vape ban be enough?

Research Aim

Identify the specific aspects of vape design that influence the type of consumer and the impacts on the user and their surroundings.

Objectives

- Why are certain user demographics attracted to specific types of vape?
- How has vape design and marketing changed over time and how has this affected the type of consumer?
- Who is designing the vapes and who is the intended user?
- Does vape design affect health and the environment?
- What has changed to make non-smokers or young people want to vape?
- What is the government doing in response to the rise of vaping?

Conducting an online survey and a series of semi-structured interviews will provide qualitative and quantitative data to be analysed and provide necessary answers to the objectives. Some expectations include: young people being against the disposable vape ban, vape companies only caring about profit and not adolescent vaping or the environment and the government implementing ways to combat disposable vape issues.

This dissertation aims to discover the effect of vape design on the user including how the marketing of vapes has changed over time, the vape company's intended user, the health and environmental impact of disposable vapes, the rising issues of vaping among young people and non-smokers and the government's response.

2.0 Literature Review

2.1 Introduction

While there are many contradicting studies about the use of e-cigarettes (vapes), there is a lack of research into how marketing and design influence the user demographic. The majority of researchers focus on figures regarding the uptake of vaping in ex-smokers and non-smokers as shown in the research by YouGov (2021) and Jerzyński, T. and Stimson, G.V. (2023) missing the wider impacts it may have. Additionally, the Local Government Association (2023) has noted concerns about adolescent vaping and environmental problems around the disposal of one-use vapes, issues which need to be investigated. This literature review will thematically analyse various sources exploring the power that design has over the consumers of e-cigarettes.

2.2 The History

How was vaping introduced?

Brueck, H. (2019) wrote that Joseph Robinson designed the first 'electric vaporiser' in 1927 so that people could prevent being burned when inhaling vapours or 'medicinal compounds'. Next came Herbert Gilbert in 1963 and Jed Rose in the 1980s who played around with smokeless cigarettes and distilled smoke however a lack of interest from manufacturers meant these creations didn't take on. Eventually, in 2003 Hon Lik designed the current e-cigarette after his father died from lung cancer due to being a heavy smoker. 3 years later Europe and the US were introduced to vaping which encouraged the start of the first big vape brand N'joy. While this source has well-presented and easy-to-read information, it is an article on the website for 'Business Insider' meaning it has low internal validity compared to a research journal.

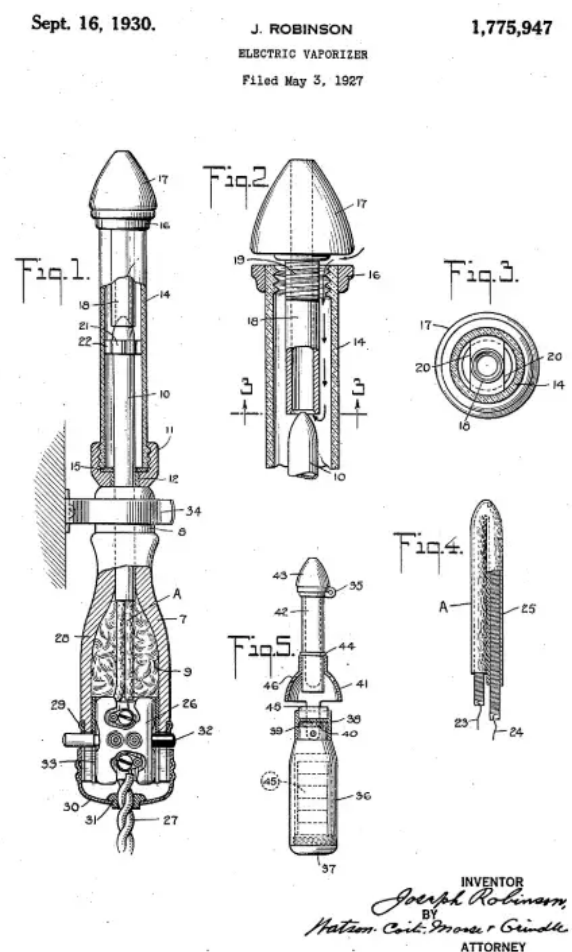


Figure 1 - patent for the first 'electric vaporiser' 3rd May 1927 cited by Brueck, H. (2019)

Over time, a variety of different vaping devices have been manufactured as shown by the Centers for Disease Control and Prevention (U.S.) (2019) which created a visual dictionary for educational and healthcare providers.

1st gen - disposable vapes, one use

2nd gen - prefilled and refillable cartridges, multiple use, separate purchase

3rd gen - sub-ohm tanks and mods, large clouds, stronger delivery

4th gen - pod mods, more shapes, colours, sizes, nic salts less irritation to throat with high nicotine

People have begun modifying their vapes, also known as hacking, so they can fill closed system devices with different substances such as CBD, synthetic cannabinoids and THC. Dripping is another method to increase the “hit” amount but may increase the user’s risk of inhaling dangerous toxins and carcinogens. While this is a highly valid and useful source, as the research was conducted in 2019 there may be newer devices, modifying methods and different substances used in the current day meaning there is a low temporal validity.

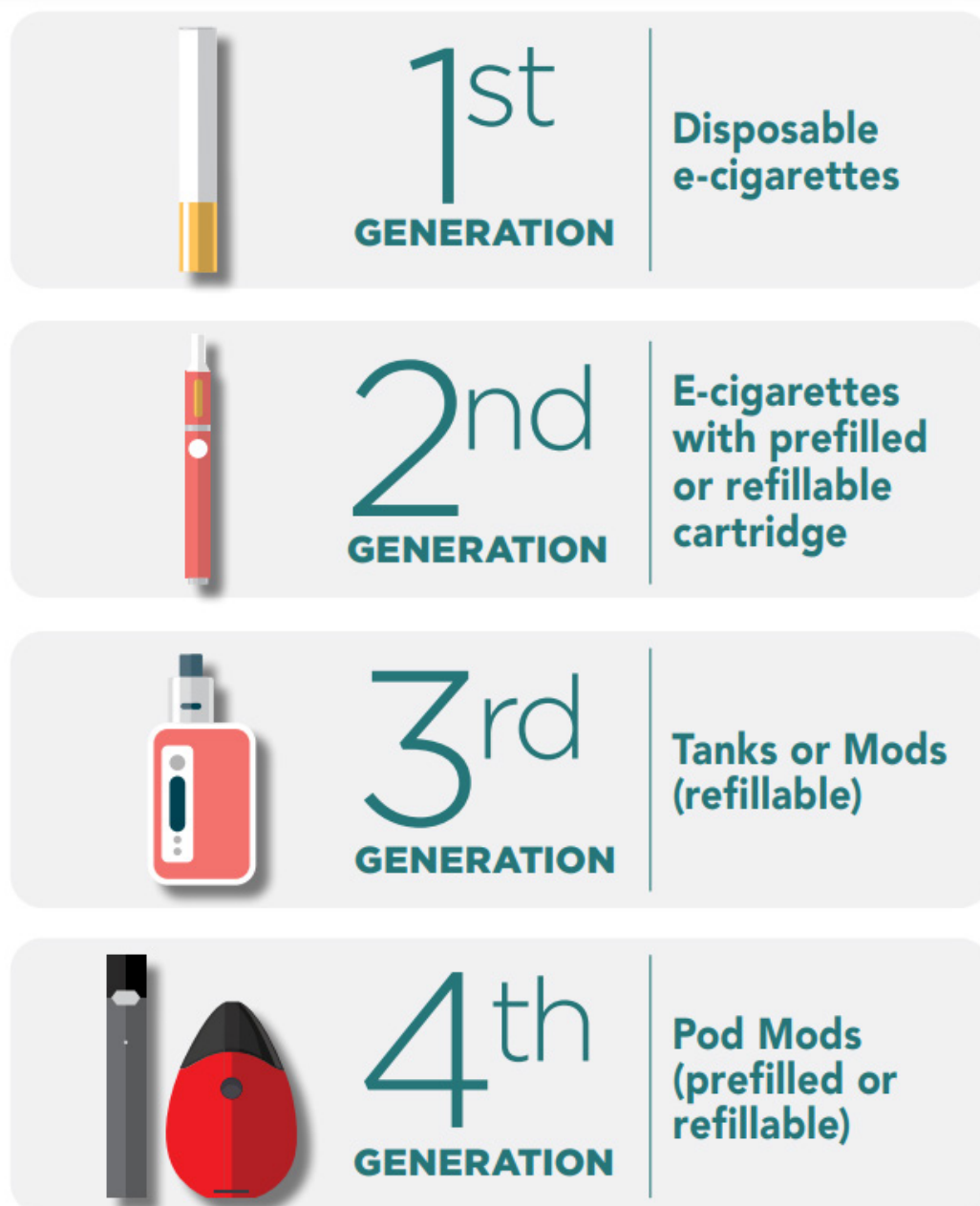


Figure 2 - visual guide to different vape generations from the Centers for Disease Control and Prevention (U.S.) (2019)

2.3 The User

What are the current consumer demographics?

Jerzyński, T. and Stimson, G.V. (2023) estimate there were 82 million e-cigarette users globally in 2021 from analysing population prevalence data in 48 countries. The top areas for vape usage are Europe (20.1 million), America (16.8 million), the Western Pacific (16 million) and Southeast Asia (14.3 million) which coincides with the countries being more economically developed. Using multitudes of data from a variety of countries gives this source high population validity and generalisability. However, the temporal validity depends on the reliability of the graph projection.

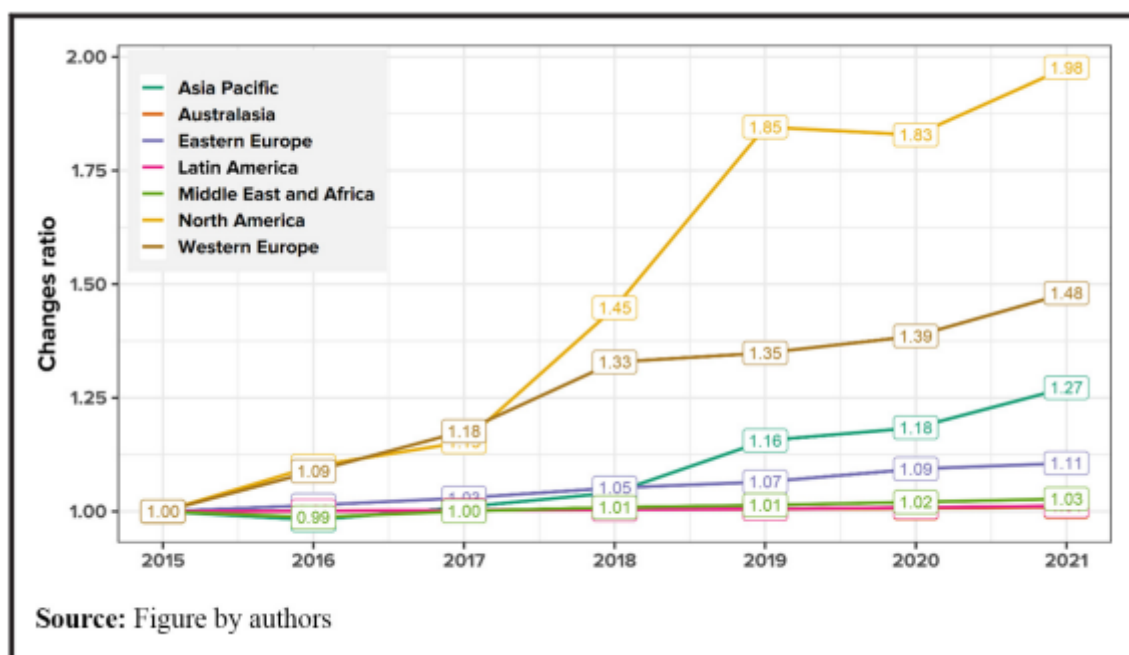


Figure 3 - line graph of the increase of vaping over time by area from Jerzyński, T. and Stimson, G.V. (2023)

In adults, the attitudes and behaviour towards e-cigarettes in Great Britain have changed as shown by YouGov (2021). With 9.1% of the population (4.7 million people) using vapes and 92% having heard of vapes, there has been a massive increase since the introduction in 2006. 18-54 year-olds have the highest vape use due to a variety of reasons: to quit smoking, to prevent a relapse in smoking, to save money or for an enjoyable experience. 50% of these people use a refillable tank, 17% use replaceable cartridges and 31% prefer disposables which are most popular with 18-24 year olds. As this source is government-founded with a wide range of data sources it is generalisable and internally valid. By using mainly quantitative data, however, some aspects of vaping uptake reasons may have been missed by not giving a free-ended option.

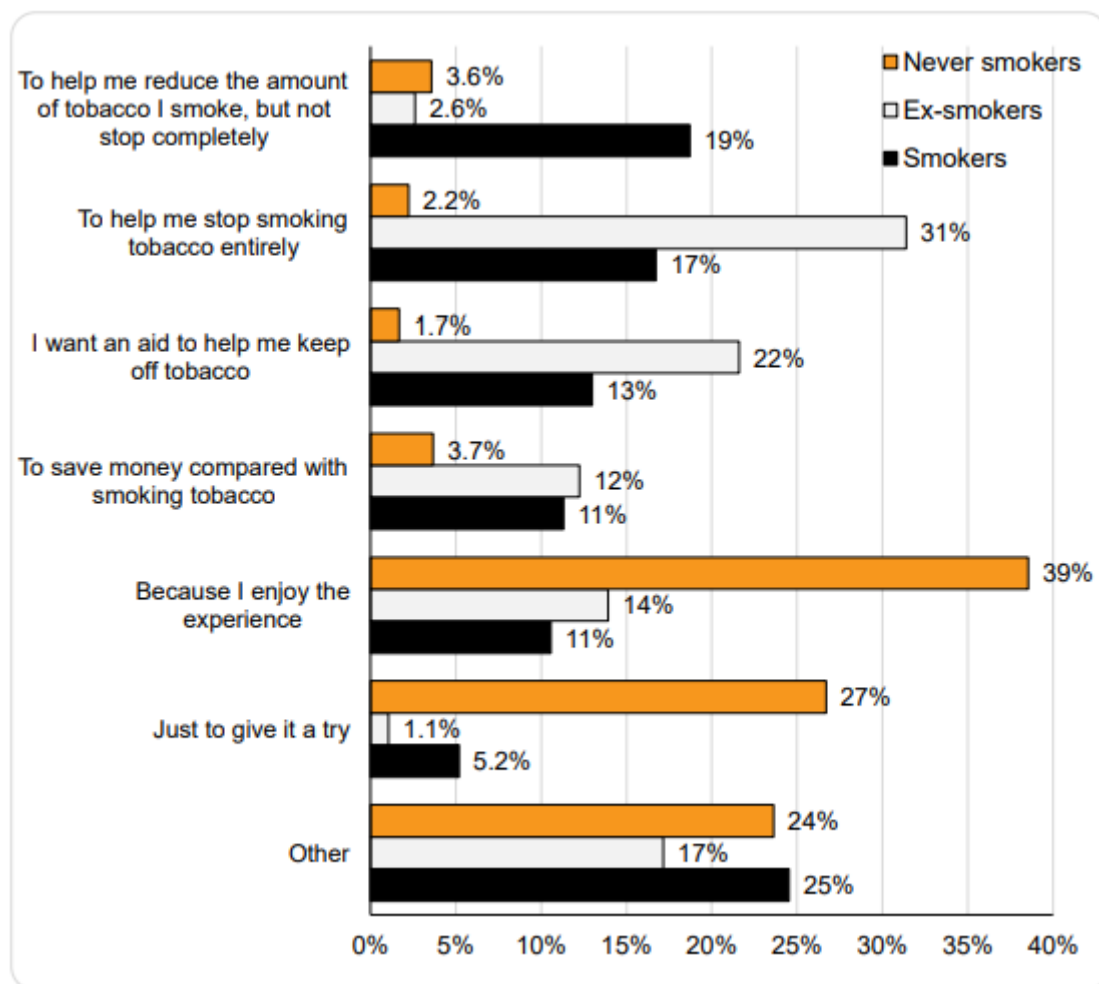


Figure 4 - bar chart of never smokers, ex-smokers and smokers reasons to vape by YouGov (2021)

A study was conducted by Mayer, M. et al. (2020) to understand how smokers, ex-smokers and non-smokers use vapes to improve tobacco regulations and public health actions. The most common habit was the dual use of vaping and smoking, with unknown long-term health effects and also shows that ex-smokers who vape are more likely to relapse. People who had never smoked before vaping were younger than 35 which backs up the YouGov study as someone new to vaping or smoking would be more likely to use a disposable as there is less commitment involved. Due to a large sample group and reliable findings among other studies, this source has a high population validity and generalisability.

2.4 The Issues

What are the issues surrounding the use of e-cigarettes?

Due to the rapid increase in e-cigarette usage in recent years, the long-term health effects are relatively unknown. The American Association (2018) found vaping to be addictive but less harmful than cigarettes and recognised specific areas for future research:

- adolescent use - vaping adolescents are more likely to try cigarettes
- long-term health effects - mice exposed to vape smoke had higher levels of lung, bladder and heart damages
- using vapes to quit smoking - a non-FDA approved quitting method

While this source highlights some of the gaps in e-cigarette research, there could be more specific details and research papers used for these topics meaning there is a low external validity. On the other hand, as this study was conducted in 2018 there may not have been as much data available.

Arguably one of the biggest issues with the rise of vaping has been the uptake in adolescents. Tatum, Z., Leventhal, A. and Wipfli, H.L. (2023) revealed that companies were designing vapes to resemble toys such as portable cups, ice cream and cartoon animals which may appeal to children and adolescents. With the rise of TikTok increasing the popularity of miniature toys, manufacturers have jumped onto this trend and advertised using social media which is popular among younger demographics. Children could mistake the vape as a toy or keyring and be accidentally exposed to the true purpose of the device. With this in mind, more research is needed on the design's impact on the perceptions of youths. This is a highly significant research paper however, with only 3 sources used it further emphasises how little research there is on this area and could impact the validity.



Figure 5 - vape designed like a children's collectible toy, advertised and shown on TikTok from Tatum, Z., Leventhal, A. and Wipfli, H.L. (2023)



Figure 6 - a 2015 Juul advertisement campaigns were aimed at teens which supports the responsibility manufacturers have regarding design and advertising from Brueck, H. (2019)

An article by Chang, H. (2014) discovered the lack of studies on the environmental issues surrounding the manufacturing and disposal of e-cigarettes which may be affected by the method of nicotine extraction and factory size. When evaluating 6 different vape models in 2010, there was a lack of instructions on disposing of finished nicotine cartridges. Additionally, many e-cigarette companies claim to produce 'eco-friendly' products and with no evidence to back this up, it appears to be a tactic to boost sales. To support this, 4 studies found that secondhand vapour can impact indoor air quality which is a giant gap in research as only recently have businesses recognised to ban vaping in indoor spaces, 10 years later. This shows a high temporal validity and generalisability as the data is still relevant today, especially as the manufacturing scale will have greatly increased since 2014.

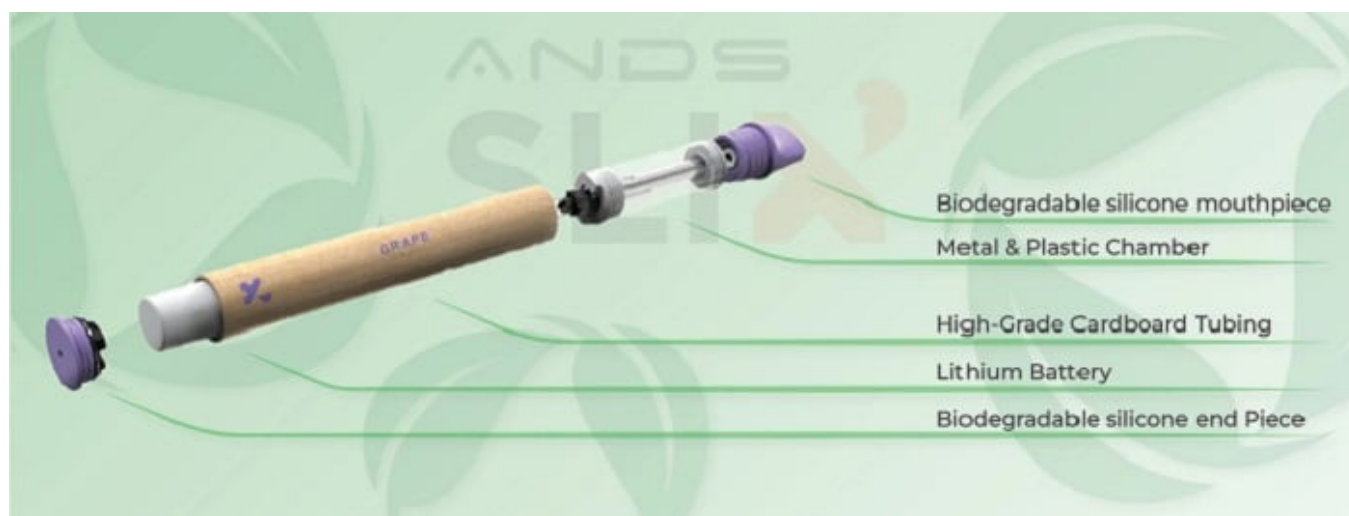


Figure 7 - SLIX disposable vape claiming to be a more sustainable product by using biodegradable materials from Cozens, N. (2023)

2.5 The Government

How is the government responding to these issues?

With an impending ban on disposable vapes in the UK, the Local Government Association (2023) created a web page of frequently asked questions to discuss the reasons why. Most importantly, the ban aims to tackle youth vaping by ensuring people born after 1st January 2009 can't be sold tobacco products, restricting descriptions and flavours, vapes will be kept out of sight and away from sweets in shops, regulating presentation and packaging, increasing the prices of vapes and introducing on-the-spot fines for underage users. The government held a public consultation to come up with these proposals showing their commitment to supporting adults quitting smoking and preventing the promotion of vapes to children. Another issue raised in the article is the difficulty of the disposal of single-use vapes. The lithium-ion batteries can be theoretically recharged over 450 times instead of once meaning that there is an immense waste of resources in these products.

Furthermore, when these batteries are damaged they are prone to catching fire which has been common in kerbside collection services and landfills which damages equipment and costs the council taxpayer. The liquid nicotine left in the discarded vapes is also harmful to pets and wild animals if ingested. This led to the Greater Manchester Combined Authority, among other waste disposal units, supporting the ban on single-use vapes. The source provides large amounts of reliable information that is highly generalisable, meaning there is high external and population validity. However, data is missing on the figures of how many vapes are recycled or disposed of, limiting the development of solutions that could be made.

An alternative source was experimenting with using social media to educate youths about vaping. Lazard, A.J. (2021) compared different social media methods including text, a quiz and virtual-based information and discovered all the methods increased the chances of adolescents sharing information in person and online about the harms of vaping. This is a highly significant article as the information can be passed around with low costs quickly and provides another solution to stopping youths from vaping. By testing 928 adolescents, the source has a high internal validity although the results could differ in low-income areas where social media may not be accessible causing low population validity.

2.6 The Data

How is the data being collected and analysed?

An online survey can save time and money compared to other data collection methods. However, Regmi, P.R. et al. (2017) found that surveys need a user-friendly layout and design, a relevant participant selection, multiple response prevention, a pilot study, consent, confidentiality and a right to withdraw to produce valid and reliable data. A wide range of sources were used meaning there is high generalisability and external validity although the journal was created in 2017 so technology may have advanced making parts irrelevant now.

Another aspect of surveys is multiple choice questions which can be analysed in 5 different ways as shown by Ding, L. and Beichner, R. (2009): classical test theory, factor analysis, cluster analysis, item response theory and model analysis. While this is a well-researched and evaluated source, it is heavily focused on each approach's mathematical algorithms, making it less significant for this study.

For more in-depth data, semi-structured interviews will be conducted. Adeoye-Olatunde, O.A. and Olenik, N.L. (2021) created a 7-step guide to allow 'novice' researchers to ensure their results are valid with minimal bias and understand the methodology behind conducting interviews: 1) find a suitable method for the research objectives, 2) use sampling approaches to recruit participants, 3) find out the participants' demographic background then design data collection through developing the interview, 4) prepare for the interview after choosing a recording method by checking the transcription, transmitting and whether the data is stored securely, 5) analyse the data by identifying themes and codes maintaining rigour, 6) realise conclusions and 7) report the guidelines and results so they're ready to evaluate then present the research. The article has a high generalisability due to a wide range of sources being used although it primarily focuses on pharmacy services research.

Using both surveys and interviews allows for mixed methods research (MMR). Vedel, I. et al. (2019) described how to integrate qualitative and quantitative data alongside, explained different designs of MMR - convergent, sequential exploratory and sequential explanatory and how to choose one. As healthcare is involved there is a mandated high internal validity with replicable results, however, the methods could be compared against each other for clearer decision-making.

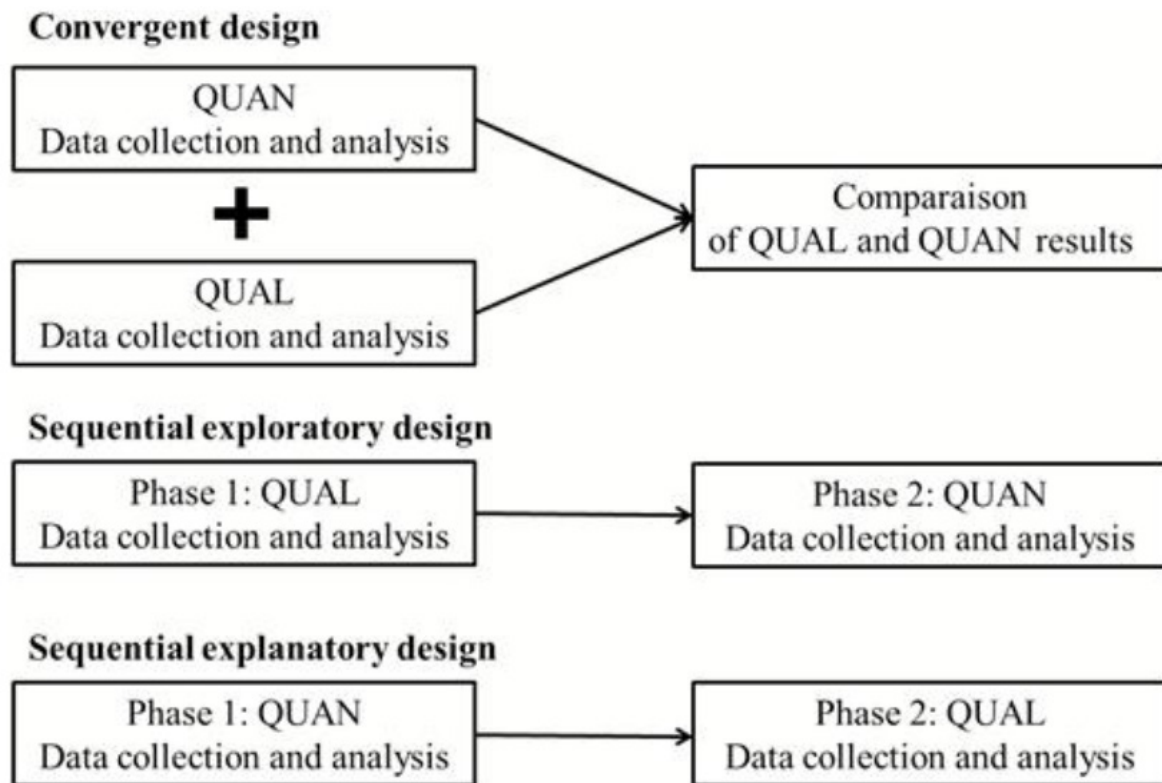


Figure 8 - the different types of MMR designs by Vedel, I. et al. (2019)

Once all data is collected into a qualitative form, a general inductive approach will be used and guided by Thomas, D.R. (2003). 1) condense raw data into brief summary format, 2) establish clear links between the research objectives or evaluation, 3) develop a framework of underlying structure, 4) use a systematic set of procedures to analyse data. While this is a generalisable article, other methods could be explained as to why this approach works best.

2.7 Conclusion

Vaping is a growing issue which has many unclear factors involved such as the reason behind the uptake of vaping in adolescents, how the design of the vape affects the user demographic, who vape companies are trying to market their products towards and the government's long-term plans around vaping, particularly around waste disposal and vape regulations. These topics will be investigated and covered in this dissertation through an online survey and a series of semi-structured interviews to fill these knowledge gaps directly from the people involved.

3.0 Methodology

3.1 Focus and Overview

To fill the research gaps highlighted in the literature review, an online survey and three series of interviews were implemented. This in turn would discover the specific aspects of vape design that influence the type of consumer and the knock-on effects it has on the user and their surroundings, the research aim. Norris, J.M. et al. (2015) created a set of guidelines on results and methods of quantitative data gathered from primary research such as using contrast, comparison and generalisation similar to meta-analysis, which will be incorporated. Below is a table outlining how each type of data collection method covers a research gap and the participants used.

Participant(s)	Objectives/Gaps Covered	Data Collection Method
Ex/Never/Current E-cigarette Users	<ul style="list-style-type: none"> • Why are certain demographics attracted to specific types of vape? • Does vape design affect health and the environment? • What has changed to make non-smokers or young people want to vape? 	Online Survey
Ex/Never/Current Smoker E-cigarette Users	<ul style="list-style-type: none"> • Why are certain demographics attracted to specific types of vape? • Does vape design affect health and the environment? • What has changed to make non-smokers or young people want to vape? 	Semi-Structured Interview
Vape Companies	<ul style="list-style-type: none"> • Why are certain demographics attracted to specific types of vape? • How has vape design and marketing changed over time and how has this affected the type of consumer? • Who is designing the vapes and who is the intended user? • Does vape design affect health and the environment? 	Semi-Structured Interview
Government	<ul style="list-style-type: none"> • Does vape design affect health and the environment? • What has changed to make non-smokers or young people want to vape? • What is the government doing in response to the rise of vaping? 	Semi-Structured Interview

Table 1 - the objectives covered with each participant type and data collection method by the author

3.2 Online Survey

Microsoft Forms was used to create an online survey to discover user demographics, waste disposal, general e-cigarette opinions and reasons behind usage (Appendix -). The link was sent to known e-cigarette users and posted on social media platforms such as Instagram and Facebook for maximum exposure, thereby improving the number of responses and generalisability of the results. Both qualitative and quantitative data will be collected also known as Mixed Method Research (MMR) which Fàbregues, S., Molina-Azorin, J.F. and Feters, M.D. (2021) addressed the lack of guidelines for when evaluating the data. Due to online surveys being flexible, efficient and allowing for data collection without wasting limited time (Lefever et al., 2007), this collection strategy was the most appropriate choice. Regmi, P.R. et al. (2017) concurred how online surveys, if made well, are time-saving and cost-effective, however, a combined collection strategy achieves better data hence the use of semi-structured interviews in tandem. Norris, J.M. et al. (2015) created a set of guidelines on results and methods of quantitative data gathered from primary research such as using contrast, comparison and generalisation similar to meta-analysis, which will be incorporated

3.3 Semi-Structured Interviews

Three stages of semi-structured interviews were split into vape users, vape companies and the government. This would mean that the consumers, manufacturers and knock-on effects noticed by the government could all produce information relating to vape design and the research aim and objectives. The four vape users were further split into one ex-smoker, one dual user, and two never-smokers (one still at school at 18 years old). Having a participant at school meant data on adolescent vape use could be observed ethically. Allowing participants to read questions in their own time and type out their responses meant time was saved by not having to transcribe and less pressure was put on them so their information could be well thought-out. It may also minimise fatigue for the respondent and interviewer (Adams, W. C. 2015) allowing data to be as internally valid as possible with plenty of detail. The seven-step guide created by Adeoye-Olatunde, O.A. and Olenik, N.L. (2021) was used to ensure the data was valid with minimal bias and identify themes and codes from the qualitative data to reach conclusions.

3.4 Ethical Consideration

All participants were 18 and over and gave informed consent either through tick boxes on the survey or a consent form for the interviews which can be found in the Appendix. The questions asked were not harmful, unethical or traumatic meaning participants wouldn't have their mental or physical well-being threatened which would compromise the validity of the data (Orb, A., Eisenhauer, L. & Wynaden, D 2001). Additionally, identities will be kept anonymous by using numbers so data protection was ensured by storing all information on a password-protected file using a university account OneDrive. An ethics training quiz was completed by the researcher who also received approval of the questions from the university website ethics questionnaire (see ethics disclaimer pg 4).

4.0 Results

4.1 Hypotheses

E-cigarette design has changed drastically over the past 20 years meaning the consumer will naturally change too. Multiple factors affected this change such as the changing views on smoking, the government's push for smokers to switch to vaping and the rise of social media platforms where products are frequently advertised unknowingly. This research aimed to discover which aspects of vape design have directly affected the consumer using interviews to fill research gaps. Initial expectations were split into four groups: younger generations, older generations, vape companies and the government.

<i>Younger Generations</i>	<i>Older Generations</i>
<ul style="list-style-type: none"> • More positive opinions towards vaping due to it being 'trendy' • More attracted to the aesthetics of the vape • Less concerned about the government's or vape companies' response • More likely to use disposable vapes, dual cigarette and vape usage and be non-smokers to vape users 	<ul style="list-style-type: none"> • Have a more negative opinion towards vaping, especially disposables and the rise in younger generations using vapes • More inclined to use plain mods, be ex-smokers or stick to cigarettes • Disposable vape waste concerns regarding the environment • Need for the government to put regulations in place
<i>Vape Companies</i>	<i>The Government</i>
<ul style="list-style-type: none"> • Focused on profit instead of knock-on effects such as adolescent vape use and environmental waste • Marketing on social media platforms accessible to young people 	<ul style="list-style-type: none"> • Vaping seen as preferable to cigarettes health-wise • A need to tackle the adolescent vaping issue • Strategising how to combat disposable vape waste

Table 2 - initial expectations for each group by the author

<i>Name</i>	<i>Age (years)</i>	<i>Smoking History</i>	<i>Preferred Device</i>	
Interviewee 1	18	never smoked	disposable	student
Interviewee 2	23	never smoked	disposable	unemployed
Interviewee 3	27	ex-smoker	disposable	full-time employment
Interviewee 4	58	ex-smoker	mod	full-time employment

Table 3 - the anonymised identity demographics by the author

4.2 Findings

Full copies of the online survey and interview responses can be found in the Appendix.

Why are certain demographics attracted to specific types of vape?

51% of the online survey participants were students with 48% of these people using vapes, a lower number than expected. 40% of the student vapers are dual cigarette and vape users and only 30% had never smoked showing more students have smoked cigarettes than expected. Disposable vapes were the main vape device of choice however 70% of the vape-using students use disposable with the other 30% using hybrid refillable devices with the deciding factors for these devices being the flavour strength/variety and cost, only one participant overall was concerned about aesthetics.

Full-time employment	9
Part-time employment	4
Student	20
Unemployed	3
Other	3



Figure 9 - survey pie chart of employment situation by the author

Disposable vapes	11
Refillable device (pods/vape fluid)	1
Hybrid refillable device (dispose...	3
Other	3



Figure 10 - survey pie chart of preferred vape device by the author

All four interviewees concurred that teens and underage people along with those trying to give up smoking were attracted to vaping. They associated the majority of people using brightly coloured disposable vapes as a trend and older people with plain refillable mod kits to quit smoking. Interviewee 4, an ex-smoker who has successfully quit smoking, uses a mod for a customisable experience that is sustainable, doesn't stand out or leak and is functional and cheaper in the long run.

How has vape design and marketing changed over time and how has this affected the type of consumer?

Due to vaping being marketed as a safer alternative to smoking, non-vaping survey participants saw those who vape as believing there to be no health risks and were generally inconsiderate when vaping around others. Many only use their vapes as a social recreational habit when drinking or going out, however, some people then begin relying on their vapes daily which becomes expensive. Some of their reasons for not using e-cigarettes include health, being unappealing and cost. On the other hand, people who vape recognised how vaping was generally seen negatively and that more research needs to be done on the long-term health effects. It allows them to de-stress and have an alternative to smoking although it's an expensive 'trendy' habit and needs to become a more sustainable industry.

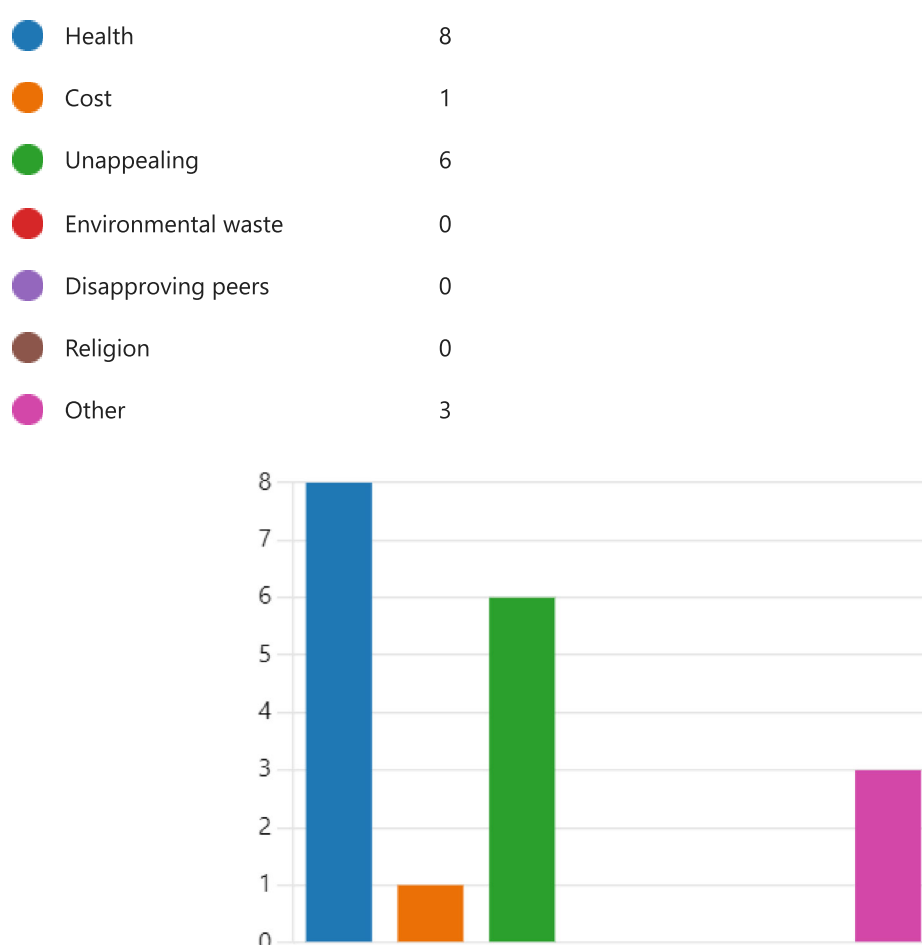


Figure 11 - survey bar chart of why participants don't use vapes by the author

None of the interviewees had seen e-cigarette adverts. Social media platforms like TikTok showing influencers and peers using vapes along with brightly coloured packaging in shops were the only means of e-cigarette marketing viewed. This in turn validates how adolescents are being exposed to vapes unknowingly as they aren't being shown as harmful or even talked about. In school and on packaging, cigarettes are taught to be damaging to your health and addictive whereas vapes were publicly shown to be a better alternative.

Who is designing the vapes and who is the intended user?

No matter their age, all survey participants and half of the interviewees agreed that only ex-smokers over the age of 18 should be vaping. The other interviewees agreed on users having to be over 18 but anyone who wishes to vape can make their own decision whether they are trying to quit smoking or not. The majority of opinions on vape companies were negative due to the bright, colourful packaging and fruity flavours that appeal to minors and a lack of consideration for the environment.

There was no response from the three vape companies.

Does vape design affect health and the environment?

Compared to smoking, Interviewees 3 and 4 found that vaping created fewer health issues. Switching to e-cigarettes meant they were coughing less, could breathe easier, felt cleaner, and prevented chest infections. On the contrary, interviewee 1 found that vaping increased their anxiety which may be due to the adjustment process to nicotine. Interviewee 2 found no differences other than assistance with stress.

Environmentally, all interviewees and some survey participants recognised how disposable vapes create waste and that a recycling scheme needs to be implemented. 1 and 4 were in support of the disposable vape ban with 1 believing it will teach adolescents that vaping can be negative but it won't stop their access to vapes due to older siblings, parents and shops that don't check IDs. 2 and 3 were strongly against the ban saying more people will return to smoking and that over 18s shouldn't have to suffer because of underage people abusing vapes.

What has changed to make non-smokers or young people want to vape?

Figure 12 shows how peer vaping caused non-smokers to start vaping. Some other reasons from the survey were for controlling anxiety, stress, boredom and food intake. Around 55% of the survey participant's peers use vapes whether they also vape or not proving that it's hard to escape and not be around.

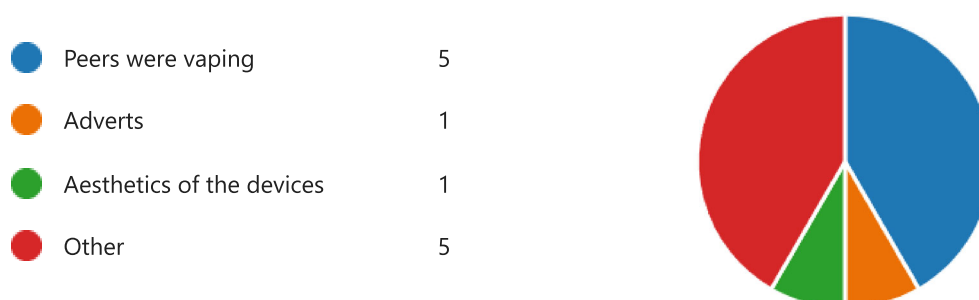


Figure 12 - survey pie chart of how non-smokers started vaping by the author

Interviewee 1 provided invaluable knowledge as to how adolescents start vaping. Initially, their friends tried it to see what it was like until one was bought to share with the group for special occasions and social events. This then led to each of them using a disposable daily at home. Generation Z compared to other generations is more concerned with the aesthetics and fruity flavours of vape devices such as Elf Bar, Lost Mary and Elux which are seen in TikTok or Instagram pictures or videos. Due to how widespread these social media posts can be it gives the impression everyone is doing it so it's fine to do as well or it's weird if you aren't. Generally, adolescents keep their vaping secret from everyone other than their friends or peers who don't mind if they vape or not unless the person vaping is younger.

Much like 1, Interviewee 2 also prefers bright colours so the vape is easy to find and flavour is highly important especially the strength which is why they stick to disposables. The only downside is the 600 puff limit causing them to use the banned 4000 puff vapes which have a growing popularity among disposable vape users due to them lasting longer and being cheaper in the long run. Work stress and mental health led them to start vaping rather than peers which may be due to the rise of vaping taking place after Interviewee 2 left school so they aren't as influenced by people or TikTok as much.

What is the government doing in response to the rise of vaping?

By having disposable vapes available in supermarkets and corner shops, they may be too accessible especially as ID checks aren't thoroughly carried out so adolescents can buy them. Many survey participants felt stricter regulations needed to be implemented with regulations on how vapes are marketed, specifically their packaging, or ban disposables altogether. Additionally, vape recycling bins placed around shops and parks or recyclable materials should be used in the vape product itself.



Figure 13 - survey word cloud of how the government should be responding to the rise in vaping by the author

Three of the four interviewees stated that the government need to do more to prevent and educate adolescents about the dangers of using vapes. Interviewee 1 also brought up how it is the government's responsibility to provide and raise awareness of a recycling scheme for disposable vapes. 2 requested a lift on the over 600 puff vapes as they last longer and therefore reduce waste. 4 suggested a ban that increases its age limit every year until vape sales are phased out and only available via prescription to ensure only smokers have access to them.

The government weren't interviewed due to all information being publically available.

4.3 Analysis

Hypotheses

Key

- √ expectation met
- × expectation proven false
- expectation not found in primary research

Younger Generations	Older Generations
<ul style="list-style-type: none"> × More positive opinion towards vaping due to it being 'trendy' √ More attracted to aesthetics of the vape × Less concerned about the government's or vape companies's response √ More likely to use disposable vapes, dual cigarette and vape usage and be non-smokers to vape users 	<ul style="list-style-type: none"> √ Have a more negative opinion towards vaping especially disposables and the rise in younger generations using vapes √ More inclined to use plain mods, be ex-smokers or stick to cigarettes √ Disposable vape waste concerns regarding the environment √ Need for the government to put regulations in place
Vape Companies	The Government
<ul style="list-style-type: none"> • Focused on profit instead of knock-on effects such as adolescent vape use and environmental waste × Marketing on social media platforms accessible to young people 	<ul style="list-style-type: none"> • Vaping seen as preferable to cigarettes health-wise • A need to tackle the adolescent vaping issue • Strategising how to combat disposable vape waste

Table 4- if initial expectations for each group were met, false or unknown by the author

Objectives

All primary research objectives were met in detail providing enough information to answer the main aim. This in turn also filled the research gaps highlighted in the literature review of the reason behind the uptake of vaping in adolescents, how the design of the vape affects the user demographic, and the government's long-term plans around vaping, particularly around waste disposal and vape regulations. Despite this, the gaps of who vape companies are trying to market their products towards could have been discovered in depth without assumptions if a response had been achieved.

Strengths

- Qualitative data analysis - the general inductive method saved time with its simplicity compared with a thematic, coding approach
- Objectives all met - questions asked were relevant and ensured participants stayed on topic
- Gaps filled - necessary information uncovered validating the importance of research in this field to prevent further harm coming to adolescents, vape users or the environment in the future
- Good variety of survey participant demographics - only half of the participants were students which is difficult to achieve with a student study
- Wide range of sources and journal articles - generally highly significant and reliable sources used in the secondary research

Limitations

- Lack of survey responses - this limited the population validity altering how generalisable the results could be
- No vape company responses - less detail was able to be provided in the objective relating to who is designing the vapes and who is the intended user
- Could be more relevant design-specific questions - participants could have been asked their likes and dislikes of the aesthetics of vape devices instead of just functional and sustainable design questions
- 18-25 year-olds main participants of the survey - low population validity as many ex-smokers and vape consumers are over 25

5.0 Discussion

Between the literature review and objectives, this dissertation found valuable insights as to how the design of e-cigarettes affects the consumer. Students and Generation Z generally gravitate towards disposable vapes because of the brightly coloured packaging, cost, flavour strength and variety. In the past, e-cigarettes were marketed as a means to quit smoking instead of an enjoyable experience that is shown on social media platforms that adolescents frequently use. For people to stop using disposables, refillable vapes need to be improved or promoted better to encourage the switch and in turn, reduce environmental waste. Disposables, if they were to stay, need to use recyclable materials or have obvious recycling bins in public spaces to reduce not only bin fires but also how many lithium-ion batteries and plastics are wasted. While switching to vaping for ex-smokers improves their health, it could harm those who haven't smoked, particularly underage users. Packaging needs to be redesigned, accessibility to vapes must be altered and schools need to educate their students on the harms of using vapes to prevent adolescent usage which could also reduce the number of non-smokers starting too. Lastly, the government is implementing a nicotine product ban for those born after 1st January 2009 and working with charities in an attempt to reduce underage use of e-cigarettes although many of the survey participants believe a total disposable vape ban is needed.

Overall, the results met expectations with only a few exceptions and some unknowns due to not being able to interview the companies and government, so relying on publicly available information was implemented. The negative opinion of vaping across all ages from vape users themselves was unexpected, even adolescents recognise how vapes can negatively impact health and the environment despite seeing the habit as 'trendy'. Additionally, all generations had strong feelings towards the vape companies and the government's responsibilities towards combating underage vape usage. As the internet and social media are a part of our daily lives, these results may be due to information being easily accessible and previous knowledge from the rise of smoking which publically proved the negative impacts on people's health despite the trend and how the government's intervention helped reduce the number of smoking-related deaths. After the lack of response from the vape companies, most of their websites contain a disclaimer of how they aren't in support of adolescent vape use (ElfBar 2024) and their introduction to becoming more carbon neutral (Vapresso 2024) showing how they are trying to adapt due to the new bans being put in place. This means part of the government's plans (Local Government Association 2023) are working but still have far to go.

Highly significant data on how adolescents are introduced to vaping was gathered filling one of the most unknown areas of vaping. With this knowledge, more plans can be put into place to prevent underage vape consumption such as banning vape images or videos on social media platforms designed for adolescents or educating them against the health risks and addiction. Lazard, A.J. (2021) found social media to be a great tool for spreading such information. Another gap was around the user demographic which was discovered to be that bright, colourful packaging and fruity flavours combined with easy accessibility (supermarkets instead of purely vape shops) meant younger people and non-smokers found the product more enticing. These results are consistent with YouGov (2021), who also

found disposable vapes were most popular among 18-24 year-olds with the top reasons for vaping being an enjoyable experience, quitting smoking, saving money or just giving it a try. Other research papers discovering similar outcomes increase the external validity and generalisability of this paper despite the limitations stated in the analysis.

For future research, observation could be a useful methodology to find the types of devices used by different demographics which may assist if people are reluctant to disclose their information in a survey. Alternatively, an incentive for partaking in the survey could also increase the number of responses which is needed to be able to generalise to the whole population. Including people from all backgrounds and all ages would also assist with population validity. Instead of contacting the vape companies, finding a specific employee could increase the chances of a response.

Below are some topics that need further investigation:

- Understanding the hesitancy behind switching from disposable vapes to refillable ones
- Alternative materials to increase the sustainability of vapes
- More in-depth research into the long-term effects of using vapes
- The most efficient method to educate adolescents on the risks of vaping

6.0 Conclusion

The research aimed to identify the specific aspects of vape design that influence different types of consumers and the impacts on the user and their surroundings. As determined from the mixed method research, bright colours, flavours, and prices attract a younger demographic, specifically students and adolescents. Ex-smokers noticed an improvement in health by switching whereas those who had never smoked found an increase in anxiety. Peers generally don't mind the fact that people vape but feel that they can be inconsiderate, especially regarding the environment. All participants unanimously agreed more could be done to tackle environmental waste such as implementing recycling bins, changing the materials to be easily recycled or banning single-use vapes entirely. To conclude, vape design greatly affects the consumer: demographically, economically, environmentally and health-wise.

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Appendix

33.....	online survey results
44.....	interview consent forms
48.....	consumer interviews
58.....	company interviews

How does the design of e-cigarettes affect the consumer?

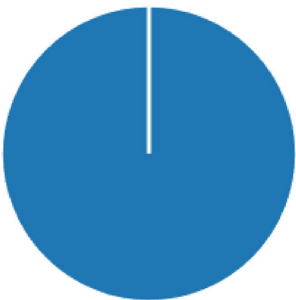
33 Responses

05:04 Average time to complete

Closed Status

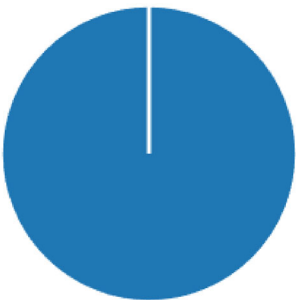
1. I confirm that the purpose of the project has been explained to me and I have been given information about it in writing. I have had the opportunity to ask questions about the project and these have been answered satisfactorily.

Yes	33
No	0



2. I understand that my participation is voluntary, and that I am free to withdraw at any time until **Sunday 14th January** without giving any reason and without any negative implications.

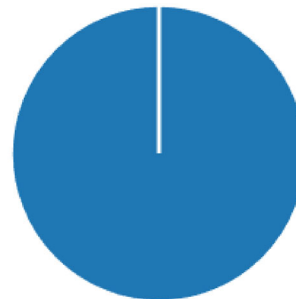
Yes	33
No	0



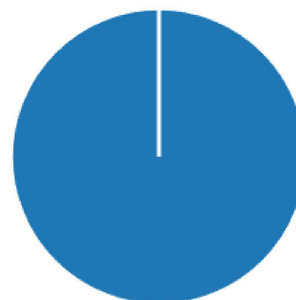
3. I wish my data to be anonymised. I understand that quotations from my survey answers may be used in the student's professional portfolio / website, but that I will not be identified.



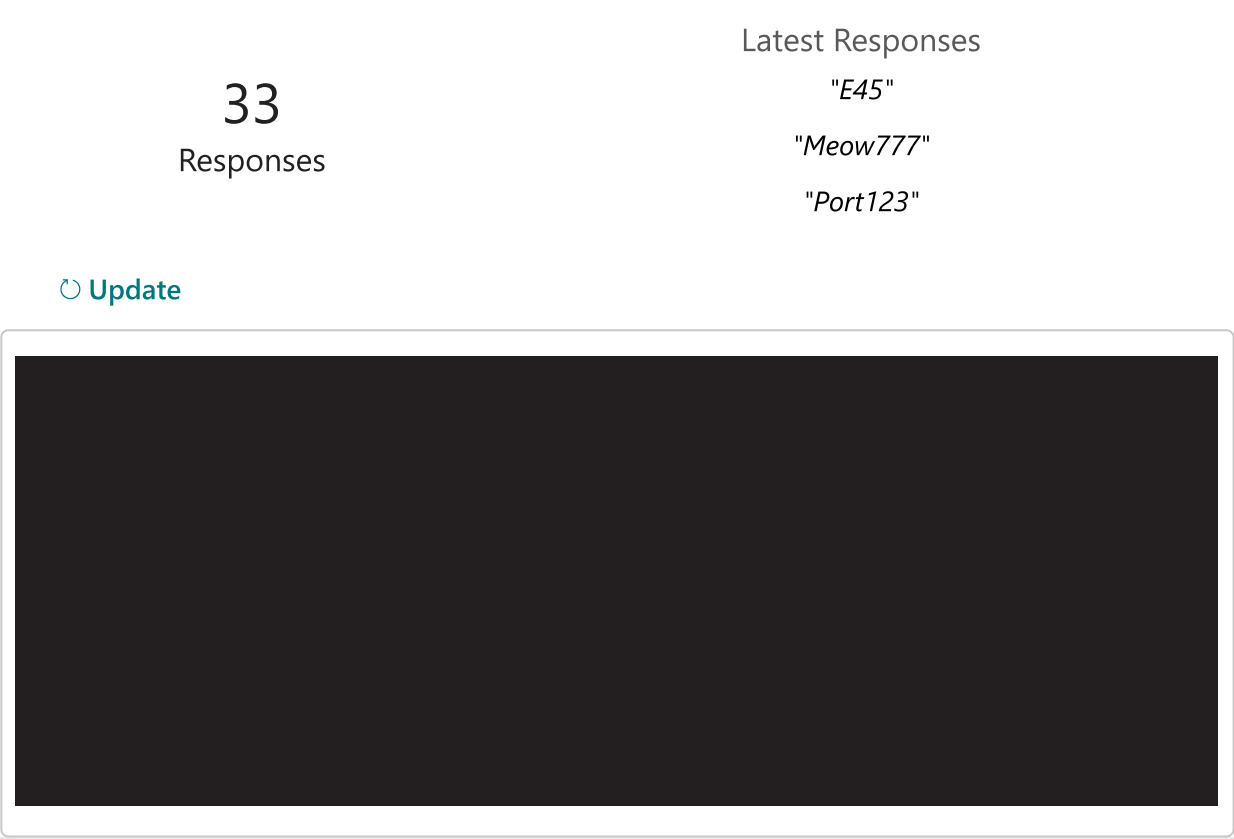
4. I am over the age of 18.



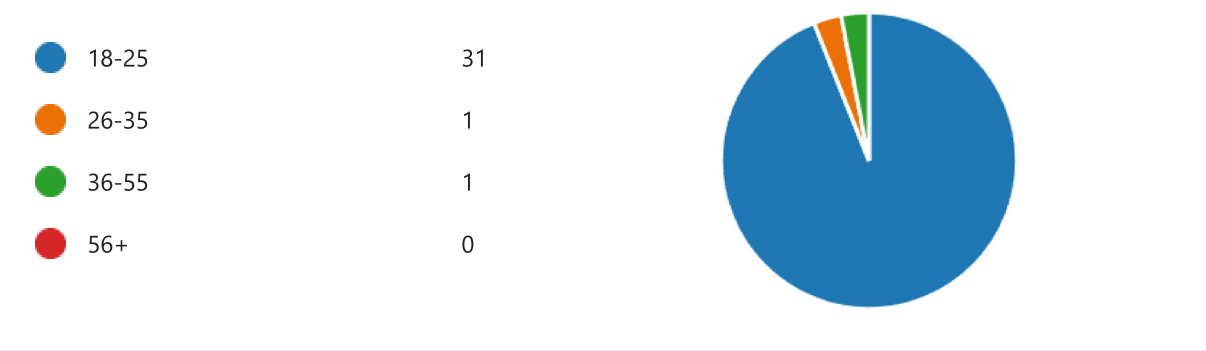
5. I agree to take part in this project



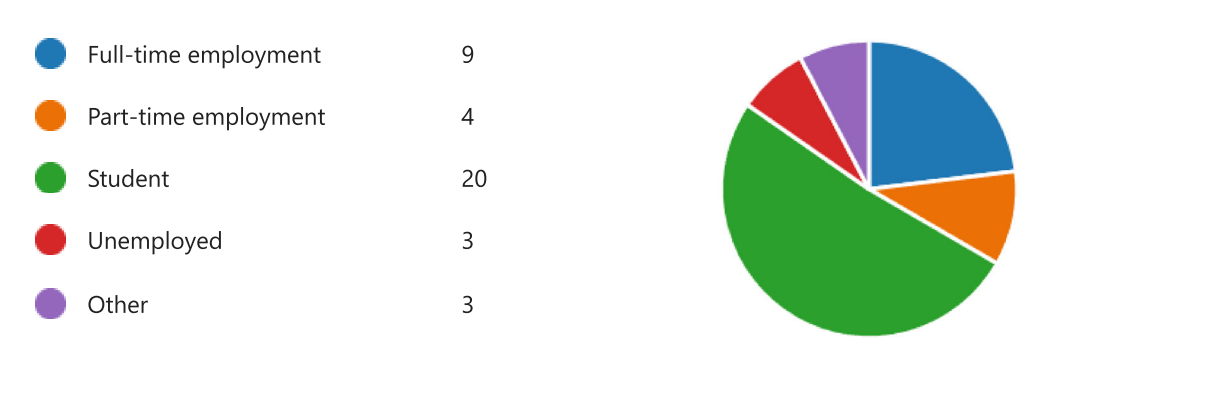
6. Anonymous identification in case of withdrawal: memorable word and number
e.g. duck42



7. Pick your age group below



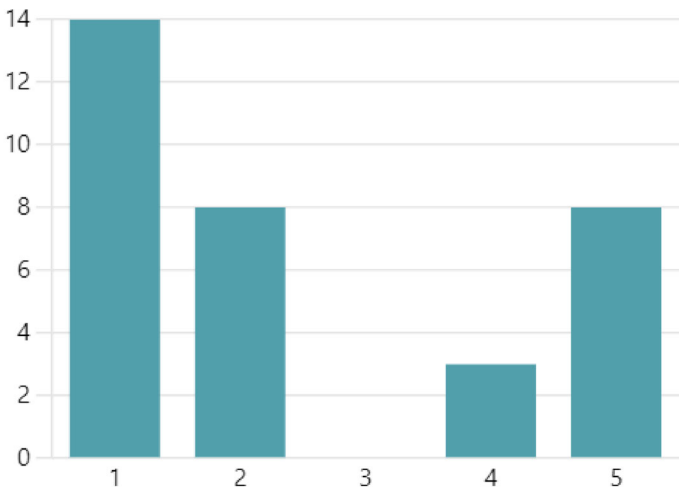
8. Which role best describes your situation?



9. How frequently do you use e-cigarettes (vapes)?
1 being never to 5 being daily

2.48

Average Rating



10. Who do you think should be the correct target market for vaping devices?

33

Responses

Latest Responses

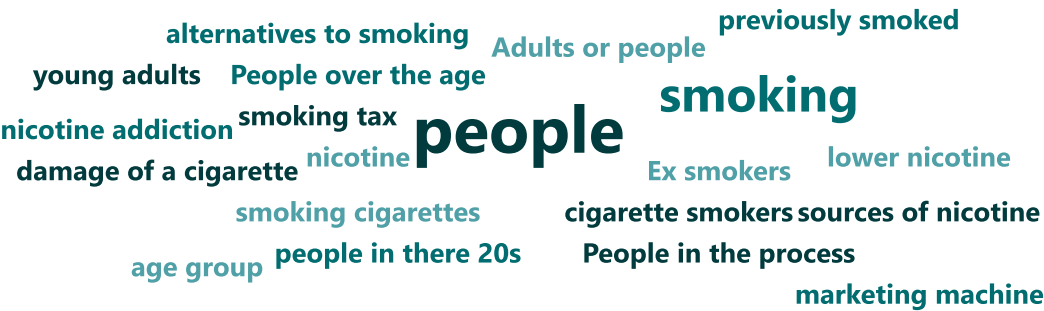
"Ex-smokers "

"People who are trying to quit smoking"

"Adults "

Update

16 respondents (47%) answered **people** for this question.



11. What do you think the government should be doing in response to the rise of vaping? (some topics to consider: environmental waste, youths vaping, regulations etc)

33

Responses

Latest Responses

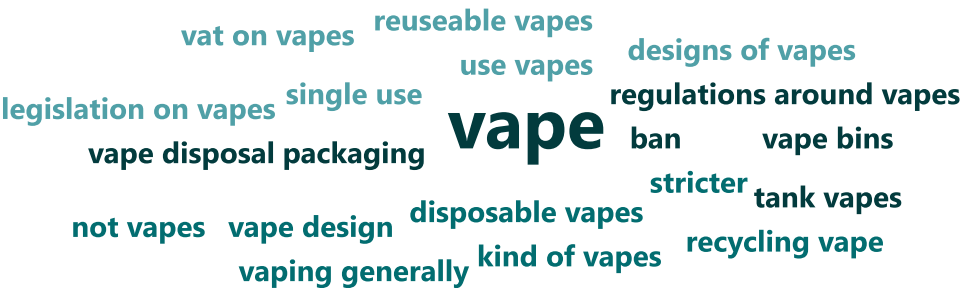
"Stricter laws around"

"Stronger regulations on the type and kind of vapes that c..."

"Phasing them out as we don't know the risk of them. Prev..."

🔄 Update

16 respondents (47%) answered **vape** for this question.



12. What do you think of the vape companies and their influence on vape consumers?

33

Responses

Latest Responses

"They don't really care who is vaping ie minors they just th..."

"I think they're evil. Just giving a new generation a new vic..."

"They attract kids with the flavours. Don't have any preven..."

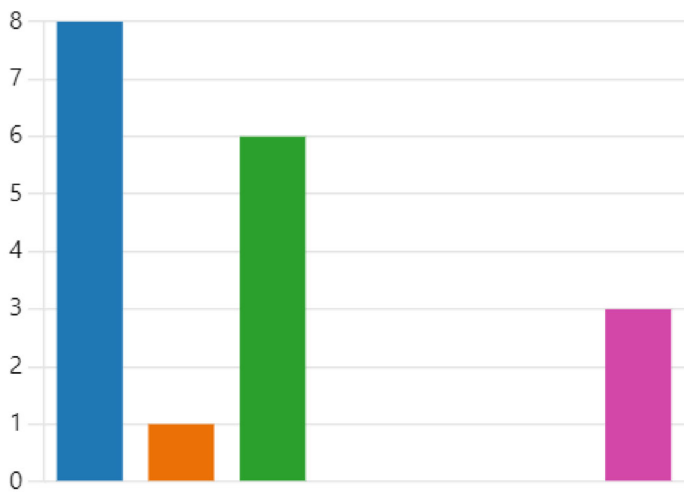
🔄 Update

6 respondents (18%) answered **flavour** for this question.



13. What are your reasons for not vaping?

Health	8
Cost	1
Unappealing	6
Environmental waste	0
Disapproving peers	0
Religion	0
Other	3

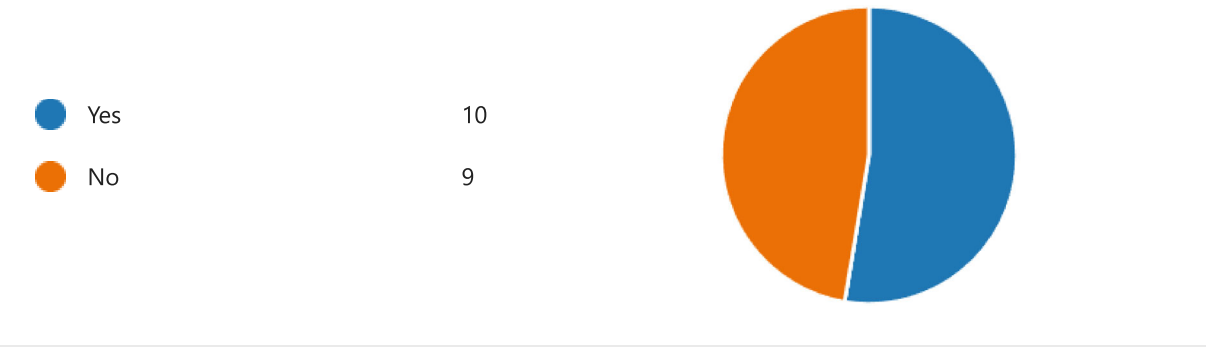


14. Have you ever smoked in the past?

Yes	8
No	11



15. Have you ever vaped in the past?



16. What are your opinions on vaping?

18
Responses

Latest Responses

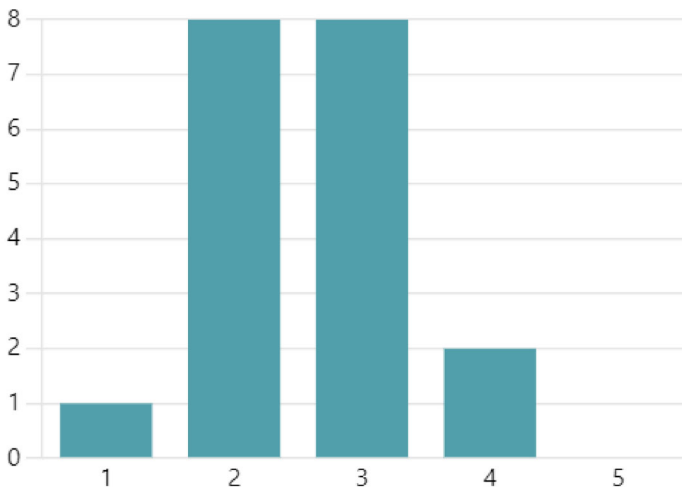
"I personally have no interest in it. It's like any drug, you ca...

5 respondents (28%) answered **health** for this question.



17. Out of the people you know, roughly what percentage of them vape?
1 being 0% to 5 being 100%

2.58
Average Rating



18. Pick which applies best to you

- Dual vape and cigarette user 5
- Only smoke 0
- Never smoked vape user 6
- Switched from smoking to vaping 6
- Other 3



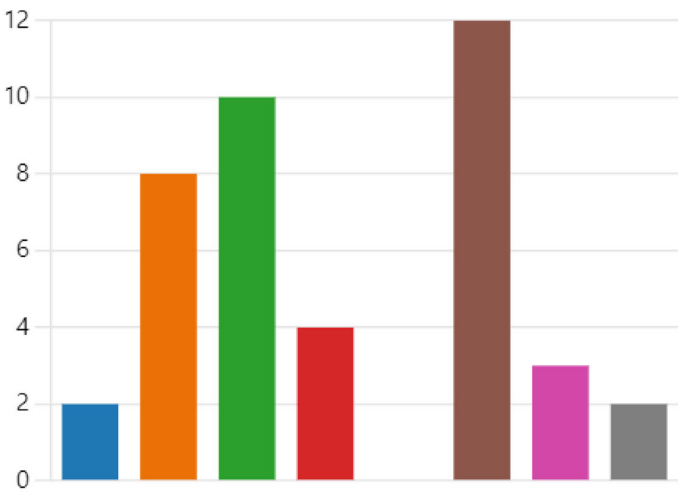
19. Which vaping device do you mainly use?

- Disposable vapes 11
- Refillable device (pods/vape fluid) 1
- Hybrid refillable device (dispose... 3
- Other 3



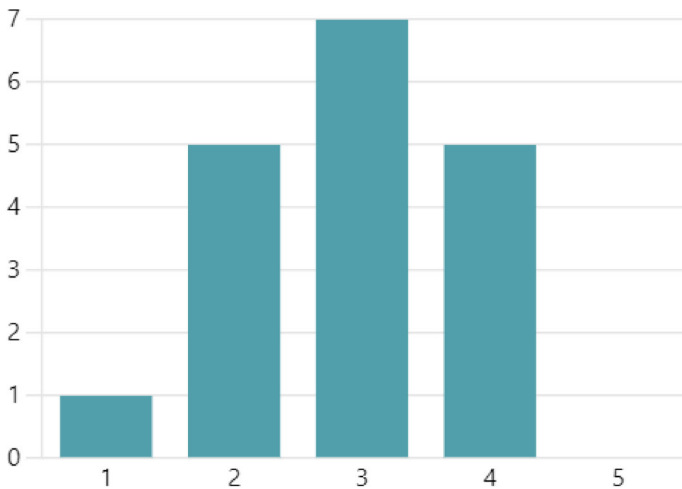
20. What are your deciding factors for your vaping device?

Size	2
Flavour stength	8
Flavour variety	10
Reduced waste	4
Aesthetics	0
Cost	12
Nicotine strength	3
Other	2



21. Out of the people you know, roughly what percentage of them vape?
1 being 0% to 5 being 100%

2.89
Average Rating



22. If you have **never smoked before vaping**, what influenced you to start?

- Peers were vaping 5
- Adverts 1
- Aesthetics of the devices 1
- Other 5



23. What are your opinions on vaping?

13
Responses

Latest Responses

"It's calming and de stressing but I wish I never tried one. P...

🔄 Update

4 respondents (29%) answered **Bad** for this question.



Consent Form

How does the design of e-cigarettes affect the consumer?

This dissertation will discover the effect of vape design on the user including how the marketing of vapes has changed over time, the environmental impact of disposable vapes and the rising issues of vaping among young people and non-smokers. The majority of studies are on the smoking background of people who now vape rather than how the marketing and design have had knock-on effects on a global social, economic and environmental scale. You will be asked a variety of questions relating to these topics, feel free to take your time with responses and you don't have to answer anything you don't want to. If at a later date you wish to withdraw your data, contact me with the details below.

Please read and confirm your consent to being interviewed for this project by highlighting the appropriate sections and signing and dating this form.

1. I confirm that the purpose of the project has been explained to me and I have been given information about it in writing. I have had the opportunity to ask questions about the project, which have been answered satisfactorily.
2. I understand that my participation is voluntary and that I am free to withdraw at any time until [specify date] without giving any reason and without any negative implications.
3. I give permission for the interview to be audio recorded, and I understand that the recording will be destroyed at the end of the project.
4. I wish my data to be anonymised. I understand that quotations from my interview may be used in the student's dissertation/public degree exhibition/professional portfolio/website and social media posts / other publications, but that I will not be identified.

Or (highlight which)

I waive my right to anonymity and wish for my name to be included in this study. I understand that quotations from my interview may be used in the student's dissertation/public degree exhibition/professional portfolio/website and social media posts/other publications, and that I will be identified by name.

5. I am over the age of 18.
6. I agree to take part in this project.

Participant's name: [redacted]

Date: 13/3/24 Signature: [redacted]

Student's name: Clara Nakisa

Date: 13/03/24 Signature: 

If you have any questions don't hesitate to contact me (clara.nakisa21@ntu.ac.uk) or my tutor (george.milev@ntu.ac.uk). Thank you for your participation and time.

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1. I confirm that the purpose of the project has been explained to me and I have been given information about it in writing. I have had the opportunity to ask questions about the project, which have been answered satisfactorily.
Yes I can confirm this.
2. I understand that my participation is voluntary and that I am free to withdraw at any time until [specify date] without giving any reason and without any negative implications.
yes I understand this.
3. I give permission for the interview to be audio recorded, and I understand that the recording will be destroyed at the end of the project.
4. I wish my data to be anonymised. I understand that quotations from my interview may be used in the student's dissertation/public degree exhibition/professional portfolio/website and social media posts / other publications, but that I will not be identified.
Or (highlight which)
I waive my right to anonymity and wish for my name to be included in this study. I understand that quotations from my interview may be used in the student's dissertation/public degree exhibition/professional portfolio/website and social media posts/other publications, and that I will be identified by name.
5. I am over the age of 18.
6. I agree to take part in this project.

Participant's name: [REDACTED]

Date: 27/03/24 Signature: [REDACTED]

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Consent Form

How does the design of e-cigarettes affect the consumer?

This dissertation will discover the effect of vape design on the user including how the marketing of vapes has changed over time, the environmental impact of disposable vapes and the rising issues of vaping among young people and non-smokers. The majority of studies are on the smoking background of people who now vape rather than how the marketing and design have had knock-on effects on a global social, economic and environmental scale. You will be asked a variety of questions relating to these topics, feel free to take your time with responses and you don't have to answer anything you don't want to. If at a later date you wish to withdraw your data, contact me with the details below.

Please read and confirm your consent to being interviewed for this project by highlighting the appropriate sections and signing and dating this form.

1. I confirm that the purpose of the project has been explained to me and I have been given information about it in writing. I have had the opportunity to ask questions about the project, which have been answered satisfactorily.
2. I understand that my participation is voluntary and that I am free to withdraw at any time until [specify date] without giving any reason and without any negative implications.
3. I give permission for the interview to be audio recorded, and I understand that the recording will be destroyed at the end of the project.
4. I wish my data to be anonymised. I understand that quotations from my interview may be used in the student's dissertation/public degree exhibition/professional portfolio/website and social media posts / other publications, but that I will not be identified.
Or (highlight which)
I waive my right to anonymity and wish for my name to be included in this study. I understand that quotations from my interview may be used in the student's dissertation/public degree exhibition/professional portfolio/website and social media posts/other publications, and that I will be identified by name.
5. I am over the age of 18.
6. I agree to take part in this project.

Participant's name: [REDACTED]

Date: 27/03/24 Signature: [REDACTED]

Student's name: Clara Nakisa

Date: 27/03/24 Signature: 

If you have any questions don't hesitate to contact me (clara.nakisa21@ntu.ac.uk) or my tutor (george.milev@ntu.ac.uk). Thank you for your participation and time.

Consent Form

How does the design of e-cigarettes affect the consumer?

This dissertation will discover the effect of vape design on the user including how the marketing of vapes has changed over time, the environmental impact of disposable vapes and the rising issues of vaping among young people and non-smokers. The majority of studies are on the smoking background of people who now vape rather than how the marketing and design have had knock-on effects on a global social, economic and environmental scale. You will be asked a variety of questions relating to these topics, feel free to take your time with responses and you don't have to answer anything you don't want to. If at a later date you wish to withdraw your data, contact me with the details below.

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5. I am over the age of 18.
6. I agree to take part in this project.

Participant's name: [redacted] Date: 29/2/24 Signature: [redacted]

Student's name: Clara Nakisa Date: 29/02/24 Signature: *Clara Nakisa*

If you have any questions don't hesitate to contact me (clara.nakisa21@ntu.ac.uk) or my tutor (george.milev@ntu.ac.uk). Thank you for your participation and time.

Dissertation Interview

The User

The objectives to discover the aims using primary research are:

- Why are certain demographics attracted to specific types of vape?
- How has vape design and marketing changed over time and how has this affected the type of consumer?
- Who is designing the vapes and who is the intended user?
- Does vape design affect health and the environment?
- What has changed to make non-smokers or young people want to vape?
- What is the government doing in response to the rise of vaping?

1. Background info:

- a. Profession? student, full-time, part-time, unemployed
- b. Age

Full-time student

2. Ex-smokers

- a. What made you switch to vaping?

Non-smokers

- b. What made you start vaping?

Tried it once just to see what it was like and say I had done it, then a friend got one for my friend group to share for a special occasion and we continued to share that between our group when we met up. When it ran out, we bought a few between us for special occasions e.g. parties, then eventually got one each to use daily without having to be in the presence of each other such as at home or whenever want to use it.

Dual smokers

- c. What influenced your decision to smoke and vape?

3. Which type of vaping device is your go-to and why? Disposable, pod, hybrid, mod

Disposable elf bars and elux's

4. Which designs of vape catch your eye the most and why?

I normally look for ones that are blue or green or sometimes pink. But mostly blues and greens tend to have the best flavours so those are what I would lean towards buying. Therefore the vapes that catch my eye the most are the ones that have certain colours.

5. Which designs of vape do you see certain demographics gravitate towards?

From my experience I would see teenagers and young adults usually lean towards the brightly coloured disposable elf bars, elux's and lost marys which all have flavours, whereas you would see older generation vapers using the more plain refillable vapes which don't have flavours (I don't think?).

6. What are your thoughts on vaping adverts and marketing?

I haven't ever seen vape adverts or vapes being marketed formally from the actual owners and companies. In my opinion vapes are advertised informally through social media, for example in Tik Tok videos or photos on Instagram. From these, people see other people vaping, or simply just holding vapes, and here they create the perception that vaping is okay and more common than originally thought, and maybe think about trying it themselves or thinking that they are the abnormal one for not doing it themselves.

7. What factors influence how enjoyable a vaping device is? Flavour, battery, look, cloud, intake choice, ease of access, cost

Personally, the most important thing when buying a vape is the flavour. If it is not an appealing flavour I will not buy it, or if I have already bought it, I will give it to someone else. The second most important factor for me is the cost. If the cost is too high I will not buy it because I know there are other places which do it for cheaper, however if I was really desperate for one and there was no other place to get one, I would put up with a higher cost- so ease of access is also important

8. How have the people around you responded to you vaping?

Only my friends, who also vape, know about me so there hasn't really been anyone to respond to it. Some other friends who do not vape do know about me but they don't seem to care about me because I think they think it does not affect them, which it doesn't because no one is forcing them to try it.

9. What are the attitudes of the public towards vaping in your opinion?

General negative attitude to vaping from most people in the public- but not as negative of that of smoking cigarettes.

10. What are your opinions on the topic of adolescents vaping?

Think it is very negative, especially since we do not yet know the long-term consequences of it and the long-term effect it will have on health.

11. What are your opinions on vape waste disposal?

It is not something I think about that much since my main concern is to get rid of my vape without my parents finding out. Therefore I just use the nearest/ most convenient public bin. I do feel guilty sometimes about damaging the environment since I am aware of the damage caused by lithium batteries, however I am not aware of place where I can dispose of them where they do not get mixed with general rubbish.

12. What do you think has changed to cause the rise in vape usage?

(kind of answer in question 14) I think one of the reasons for the rise on vape usage is due to the fact that vaping is not seen as the healthy alternative to smoking. People do not feel as at risk when using vapes in the same way they would when smoking cigarettes.

Another main reason for the rise in vape usage is how easy they are to use and carry. Unlike smoking – which you have to light and then can only use it for the time its lit – vapes can just be carried and used whenever and for how long you want to. This ease of use makes vaping appealing to those who want to get some nicotine but may not have as much time/ room to carry (cigarette box and a lighter vs one small vape).

13. Has anything changed in regards to your health since beginning vaping?

Increase in anxiety- quit vaping because of this.

14. Do you think the government should be taking action on any aspects of vaping regulations?

Yes- I think children should be warned against the dangers of vaping the same way they are taught about the dangers of smoking. Smoking is warned against in many places, e.g. lessons in schools, posters, on buses etc. Vaping therefore seen as the “healthier” alternative meaning children do not have that same sense of danger when considering using a vape. Therefore I think the government should stress more the dangers and I think it is their responsibility to do this.

Concerning the environment I think the government are also the ones who are responsible for providing bins to dispose of vapes in a way that they will not get mixed in with general rubbish and harm the environment. Also need to advertise these places if they eventually provide them.

15. What are your thoughts on the disposable vape ban?

It does not affect me because I am above the age so I haven't thought too deeply about it. However, I do think there are pros and cons to the ban; pros is that it is starting to teach to children from a younger age that vaping is not good for you or your health and I think it is good they are emphasising this more as children are young in order to socialise them from early on. But I think the cons are that it will not prevent people getting a hold of them e.g. use older siblings or even parents, or dodgy corner shops who are only interested in getting a profit. Also if people want

something that badly they can still get them, for example drugs are illegal but people can still quite easily get them.

16. Are there any specific demographics that you think are attracted to vaping?

Younger people (12-17) find vapes appealing- I think because they are attracted to the idea they are doing something illegal and like breaking the law but not in a way that seriously harms someone else -such as smashing the windows of someone's house- which is similar to the appeal of underage drinking. Teenagers like rebelling but not always in the major way of getting into huge trouble, and with vaping it is quite easy to conceal from parents, teachers etc.

17. What are your thoughts on the companies producing the vapes?

I think they are just trying to make as large a profit as possible, the same way all companies for all products do, so it is hard to blame them too much. Also if they stopped making vapes, then other people would start so it is hard to blame the companies directly for producing vapes since if there is a demand they will supply (same for all companies everywhere). Also if you asked the companies to just stop making vapes they are unlikely to do that therefore I think the government are the ones who need to take the greatest action to decrease the amount of people vaping.

18. Is there anything else you'd like to add?

Thank you for taking part!- no problem and good luck 😊

Dissertation Interview

The User

The objectives to discover the aims using primary research are:

- Why are certain demographics attracted to specific types of vape?
- How has vape design and marketing changed over time and how has this affected the type of consumer?
- Who is designing the vapes and who is the intended user?
- Does vape design affect health and the environment?
- What has changed to make non-smokers or young people want to vape?
- What is the government doing in response to the rise of vaping?

1. Background info:

- a. Profession? unemployed
- b. 23

2. Ex-smokers

- a. What made you switch to vaping? NA

Non-smokers

- b. What made you start vaping?
stress of working and mental health

Dual smokers

- c. What influenced your decision to smoke and vape? NA

3. Which type of vaping device is your go-to and why? Disposable, pod, hybrid, mod?
Disposable

4. Which designs of vape catch your eye the most and why? Ergonomically sound and bright so I can spot it once it's placed down.

5. Which designs of vape do you see certain demographics gravitate towards? Bright and longest use possible - predominantly disposables as they are easy to obtain and replace if lost.

6. What are your thoughts on vaping adverts and marketing? Considering how wide spread it is, there are next to no adverts for vaping and especially when you consider how pushed smoking was when it was believed to have been good for you. Now we have vaping, it's very much under the same tarnished umbrella as smoking.

7. What factors influence how enjoyable a vaping device is? Flavour, battery, look, cloud, intake choice, ease of access, cost. For me I think it's largely to do with flavour, I personally stick to one flavour as I am fussy and as its expensive, I want to

know I will enjoy what I purchase. In addition to this, I am very interested in longevity of the product, and an automatic pull system.

8. How have the people around you responded to you vaping? Mostly absolutely fine. Anyone who disagrees or doesn't like it, I respect their decision and do not vape in their presence. This said, a large majority of my surrounding people do also vape.
9. What are the attitudes of the public towards vaping in your opinion?
very Negative. Its seen as a cliché youth thing where as its actually just the same as smoking but less harmful!
10. What are your opinions on the topic of adolescents vaping?
I Think young people (under 18) are destroying the market for those of age to buy and use these products. I feel like they are ruining it for the rest of us!
11. What are your opinions on vape waste disposal? I think it should be a legal requirement to recycle them and specialised drop off points should be in all shops.
12. What do you think has changed to cause the rise in vape usage?
I Think the amount of young people chain smoking has drastically decreased as well as a lot of past smokers actually being able to give up smoking all together thanks to vaping.
13. Has anything changed in regards to your health since beginning vaping?
nothing Whatsoever.
14. Do you think the government should be taking action on any aspects of vaping regulations?
I Think larger disposable vapes should be allowed to minimise waste. 600 puffs won't even last me a day where as my 6k disposable will last me a week with maybe only twice the packaging.
15. What are your thoughts on the disposable vape ban?
I Strongly disagree with it. I think it's a step backwards in the long term health of nicotine consumers. Without disposable vapes I believe more people will turn to smoking cigarettes.
16. Are there any specific demographics that you think are attracted to vaping?
I Would say 16-25 and 40-50 years of age.
17. What are your thoughts on the companies producing the vapes?
provided They are regulated and safe, I have no negative opinions.
18. Is there anything else you'd like to add? NA

Thank you for taking part!

Dissertation Interview

The User

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- Does vape design affect health and the environment?
- What has changed to make non-smokers or young people want to vape?
- What is the government doing in response to the rise of vaping?

1. Background info:

- a. Profession? Full time pet shop assistant
- b. Age 27

2. Ex-smokers

- a. What made you switch to vaping? Cleaner. It makes my lungs and throat feel better (cleaner)

Non-smokers

- b. What made you start vaping?

Dual smokers

- c. What influenced your decision to smoke and vape?

3. Which type of vaping device is your go-to and why? Disposable, pod, hybrid, mod.
Disposable

4. Which designs of vape catch your eye the most and why? It doesn't matter to me as long as the flavour is good. The design doesn't really matter.

5. Which designs of vape do you see certain demographics gravitate towards? Smaller ones that fit in your hands better. Small and ergonomically designed.

6. What are your thoughts on vaping adverts and marketing? I don't see many adverts but I do think they down play the possible effects it could have on your health. Furthermore I think they could use less brightly coloured and less appealing designs.

7. What factors influence how enjoyable a vaping device is? Flavour, battery, look, cloud, intake choice, ease of access, cost. Flavour is the most important to me as well as battery life. If it has a small cloud but tastes good and lasts a long time, I am satisfied.

8. How have the people around you responded to you vaping? Pretty positively. They think it's better for me to vape as apposed to smoke. Most people I find think vaping is better but still not healthy.
9. What are the attitudes of the public towards vaping in your opinion? For the most part it's pretty good. Most people don't mind it. I think people look down on it due to the amount of underaged people using them.
10. What are your opinions on the topic of adolescents vaping? It is wrong firstly but I do not think it's the fault of the product rather, the fault of the sellers and parents of the adolescents.
11. What are your opinions on vape waste disposal? As long as they are recycled they are fine, I do think however they should be using LI-ON batteries.
12. What do you think has changed to cause the rise in vape usage? The flavour/quality of the disposables and the ease of access has caused an increase in usage.
13. Has anything changed in regards to your health since beginning vaping? I feel better and my lungs & throat feel clearer and healthier.
14. Do you think the government should be taking action on any aspects of vaping regulations? Towards under aged people - yes but to adults I think the government shouldn't have a say in what we put in our bodies.
15. What are your thoughts on the disposable vape ban? Ridiculous. I don't see why we should suffer because underage people can get hold of them. I think if I couldn't get hold of them, I may start smoking. Just because of the amount of people underage drinking, should we ban alcohol too? I think we should probably do something about the adults supplying them with these products.
16. Are there any specific demographics that you think are attracted to vaping? Teens and underage people because it's seen as cool and they aren't educated in the long term affects. They think it's fine because it tastes good
17. What are your thoughts on the companies producing the vapes?
I Am thankful because they have stopped me smoking. I do think they should make the packaging less enticing and there should also be more research into long term affects and health complications.
18. Is there anything else you'd like to add? I think more research needs to be done and I think the honest findings should be shared with underage people even in schools as a part of a healthy education.

Thank you for taking part!

Dissertation Interview

The User

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- Who is designing the vapes and who is the intended user?
- Does vape design affect health and the environment?
- What has changed to make non-smokers or young people want to vape?
- What is the government doing in response to the rise of vaping?

1. Background info:

- a. Profession? student, full-time, part-time, unemployed
- b. Age

58 years. Employed company director

2. Ex-smokers

- a. What made you switch to vaping?

Health, smell on clothes and because it was becoming increasingly unacceptable to be a smoker.

Non-smokers

- b. What made you start vaping?

Dual smokers

- c. What influenced your decision to smoke and vape?

3. Which type of vaping device is your go-to and why? Disposable, pod, hybrid, mod
I use a mod because it allows me to customise my vaping experience. I mix a couple of different juices to go in it and can change the settings to suit me. I also think they are more sustainable and cheaper in the long run.

4. Which designs of vape catch your eye the most and why?

I am more about how well it works than how it looks. I definitely wouldn't want anything that stood out too much. I just want a design that is as unobtrusive as possible, robust and doesn't leak if you put it in your handbag.

5. Which designs of vape do you see certain demographics gravitate towards?

I associate young adult females with highly coloured vape pens and men with mods.

6. What are your thoughts on vaping adverts and marketing?

I think they should only be marketed as a way of giving up smoking. They should have never been made readily available for non-smokers and they should have only been available on prescription.

7. What factors influence how enjoyable a vaping device is? Flavour, battery, look, cloud, intake choice, ease of access, cost.
The flavor, nicotine level and the draw.
8. How have the people around you responded to you vaping?
Positively to start with because I gave up smoking. They could see I felt much healthier and stopped coughing so much.
9. What are the attitudes of the public towards vaping in your opinion?
I think there has been a move towards lumping smokers and vapers together. As far as I know the smoking ban does not extend to vaping but most establishments have decided to ban both.
10. What are your opinions on the topic of adolescents vaping?
It seems a real shame that a new generation of young people have now become addicted to nicotine through vaping, particularly as they were non-smokers before they started.
11. What are your opinions on vape waste disposal?
They need to look at legislating away from disposable vapes if they are bad for the environment the same way they have plastic bags. If we do have to have them then recycling needs to be strongly encouraged and readily available.
12. What do you think has changed to cause the rise in vape usage?
People moving away from smoking was one reason but when the packaging/marketing started becoming more appealing to young women and other non-smokers I imagine this really accelerated the growth.
13. Has anything changed in regards to your health since beginning vaping?
I feel much healthier now that I vape as previously I smoked 20+ cigarettes a day. When I smoked I had a perpetual cough, got chest infections and got out of breath easily. I sometimes get a headache or sore throat if I vape too much but it passes very quickly.
14. Do you think the government should be taking action on any aspects of vaping regulations?
They could ban the sale of vapes and other nicotine products such as cigarettes to anyone who is 18 and then have that age limit rise by a year every year until no age could legally buy them.
15. What are your thoughts on the disposable vape ban?
I'm in support
16. Are there any specific demographics that you think are attracted to vaping?
Smokers and people trying to give up smoking (because you can get a nicotine fix without lighting a cigarette). Also because the way they are marketed they appeal to children and young people

17. What are your thoughts on the companies producing the vapes?

The primary goal of most profit making companies is to make money for their shareholders. Vape companies are no different so they will do what they can to generate more sales within the confines of legislation.

18. Is there anything else you'd like to add?

Thank you for taking part!

Clara Nakisa 2021 (N0850928)

To: media@vaporesso.com

😊 ↩️ ⏪ ⏩ 🗑️ ...

Thu 29/02/2024 11:07

To Vaporesso Media

I am a Product Design student at NTU researching 'how the design of vapes affects the consumer' for my dissertation. I have a few questions that would be incredibly helpful for my research and any level of answer will be greatly appreciated.

- Who is the intended user to buy your vape products?
- Does this vary depending on the type of vape?
- How has the company's vape design and marketing changed over time?
- What influenced these decisions?
- What differences have been noticed with these changes?
- How are you tackling the issues with vape disposal?

Clara Nakisa 2021 (N0850928)

To: media@skevape.com

😊 ↩️ ⏪ ⏩ 🗑️ ...

Thu 29/02/2024 11:03

To SKE Vape Media

I am a Product Design student at NTU researching 'how the design of vapes affects the consumer' for my dissertation. I have a few questions that would be incredibly helpful for my research and any level of answer will be greatly appreciated.

- Who is the intended user to buy your vape products?
- Does this vary depending on the type of vape?
- How has the company's vape design and marketing changed over time?
- What influenced these decisions?
- What differences have been noticed with these changes?
- How are you tackling the issues with vape disposal?

Clara Nakisa 2021 (N0850928)

To: pr@elfbar.com

😊 ↩️ ⏪ ⏩ 🗑️ ...

Thu 29/02/2024 10:50

To Elfbar PR

I am a Product Design student at NTU researching 'how the design of vapes affects the consumer' for my dissertation. I have a few questions that would be incredibly helpful for my research and any level of answer will be greatly appreciated.

- Who is the intended user to buy your vape products?
- Does this vary depending on the type of vape?
- How has the company's vape design and marketing changed over time?
- What influenced these decisions?
- What differences have been noticed with these changes?
- How are you tackling the issues with vape disposal?

Many thanks
Clara Nakisa

End