AN INVESTIGATION INTO THE SOUTH AFRICAN HEALTH PROMOTION LEVY

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ABSTRACT

South Africa is facing a major health crisis with the increasing prevalence of non-communicable diseases such as cardiovascular diseases, diabetes and obesity, for which high sugar consumption is a risk factor. The World Health Organisation called on countries to develop policies and procedures to tax sugar-sweetened beverages to curb sugar consumption and promote healthy lifestyles. South Africa implemented the Health Promotion Levy on 1 April 2018 as part of government's intervention to combat obesity and other related non-communicable diseases. Although some evidence-based studies indicate a decline in the consumption of sugar-sweetened beverages in South Africa, the concern was identified that the current rate is too low to make a significant impact on consumer behaviour. The sugar industry, however, opposed the Levy, arguing that the implementation would lead to substantial job losses.

The goal of this study was to investigate the fairness and effectiveness of the Levy, in the context of its likely success in reducing the intake of sugar, specifically by children. The background to and implementation of the Health Promotion Levy and its impact on the consumption of sugar-sweetened beverages, and on the sugar industry, was discussed, and literature on taxes on sugary-sweetened beverages was reviewed.

The principles of a good tax system, and specifically as they are applicable to the Health Promotion Levy, were analysed and the design and application of the Levy were assessed against these principles. It was argued that the Levy is compliant with the equity and fairness principles of a good tax system, but only partly compliant with the certainty and simplicity principles. Although the Levy entails low administration costs, it is only partially compliant with the efficiency principle. From a transparency and accountability perspective, it was established that the Levy is also only partially compliant.

The diversity of the design of taxes on sugar-sweetened beverages and their effectiveness in various countries was investigated to identify similarities, differences and reasons for changes in legislation. The most effective tax rate or levy appears to be one that results in a 20% increase in the price of a sugary drink, and the most effective tax design is one where the tax is based on the beverage's sugar content. The investigation reflected the unequivocal agreement that a sugar tax is best supported by consumers if the revenue received from the tax is used for health promotion programmes or to subsidise healthy food alternatives.

A mixed method approach, building on the strengths of both quantitative and qualitative methods, was adopted in addressing the goal of the research. This involved a questionnaire that was administered to parents of learners in a sample of schools, and semi-structured interviews with those parents willing to be interviewed.

With the focus being on the consumer of sugar-sweetened beverages, it appears that South African consumers consider that the Levy is not a good tax policy as the revenue is not earmarked for health promotion purposes. It was concluded that the current rate of the Levy is too low to change consumer behaviour.

The *Health Belief Model of Behavior Change* was applied in the interpretation of the results of the study. The six constructs of the model – perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy and cues to action – constitute the framework on which the analysis was based. The analysis of the results of the study, based on these constructs, demonstrated that the responses of participants reflect the effect of these constructs on the decisions of parents and guardians regarding the consumption of sugary sweetened beverages.

The main recommendations were that the tax revenue generated from the Levy should be earmarked for health promotion, and that this would increase taxpayers' support for the Health Promotion Levy, that the rate of the Levy should be increased, and that education and communication campaigns should be used to raise awareness about the impact of sugar on non-communicable diseases and to encourage the reduction of the consumption of sugar-sweetened beverages.

Key words: consumer behaviour, Health Promotion Levy, non-communicable diseases, principles of a good tax, South Africa, sugar tax, tax policy, the *Health Belief Model of Behavior Change*

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ACCA	Association of Chartered Certified Accountants
AICPA	Association of International Certified Professional Accountants
BevSA	Beverage Association of South Africa
GDP	Gross domestic product
HMRC	Her Majesty's Revenue and Customs
Levy	Health Promotion Levy
NEDLAC	National Economic Development and Labour Council
OECD	Organisation for Economic Co-operation and Development
SARS	The South African Revenue Services
SETAs	Skills Education Training Authorities in South Africa
WHO	World Health Organisation

CHAPTER 1

INTRODUCTION OF THE HEALTH PROMOTION LEVY

1.1 CONTEXT

The World Health Organisation (WHO) (WHO, 2022b, p.1) considered that one of the most critical threats of our age is the untimely deaths caused by non-communicable diseases. The WHO explained that non-communicable diseases cause approximately 17 million annual fatalities of people below 70 years of age, whilst virtually 86% of these premature deaths occur in low- and middle-income countries. If no action is taken, it is expected that 30 million adults and 10 million children will be affected by obesity in South Africa by 2035 (Goldstein, 2025).

The National Planning Commission of South Africa acknowledged the increasing burden of non-communicable diseases in South Africa and set a goal in the National Development Plan (2012, p.333) to significantly reduce the prevalence of non-communicable diseases. Ministers of various government departments have also pledged their support for the reduction of obesity in South Africa (National Department of Health, 2015, p.10). In further support for the fight against the growing epidemic of non-communicable diseases, the Minister of Finance announced the introduction of a tax on sugar-sweetened beverages in 2016 (National Treasury, 2016a, p.16). The name of the tax was later changed to the Health Promotion Levy (referred to as "the Levy") (National Treasury, 2018b, p.47). The initial date of implementation of the Levy was planned for 1 April 2017 but was delayed until 1 April 2018 (Government Gazette, 2017, p.12). The stated intention of National Treasury in introducing the Levy was to assist in reducing the intake of excessive sugar, especially among children (National Treasury, 2016b, p.2). In the public hearings on the Levy in 2017, a commentator recommended that some or all the Levy should be earmarked and used for health promotion initiatives, but National Treasury rejected this recommendation, stating (National Treasury, 2017a, p.11):

> All tax revenues accrue to the National Revenue Fund for general government expenditure, as per determined priorities, however there is a commitment for budgetary support for health promotion programmes identified by the National Department of Health. The legislative earmarking of revenue is not supported as it will introduce rigidities in the budgeting process. The South African government has committed to increasing investments in health promotion targeting non-communicable diseases and has published this commitment in Treasury documents and international WHO publications.

National Treasury budgeted for revenue of R1 930 million from the Levy for the 2018/2019 fiscal year (National Treasury, 2018b, p.42). The medium-term expenditure estimates for the 2018/2019 fiscal year indicated that R74.2 million was allocated to Non-Communicable Diseases and R24.7 million to Health Promotion and Nutrition (National Treasury, 2018a, p.324). Thus, in total, only R98.9 million (5.12%) of the total budgeted revenue of R1 930 million from the levy was allocated to the purpose for which the Health Promotion Levy was introduced. The allocation of only 5,12% of the budgeted revenue raised from the Levy poses the questions: What is the real purpose for the introduction of the Levy? And does the Levy have an impact on the behaviour of the public regarding the intake of excessive sugar?

The WHO (2016, p.239) reported on a study in Mexico (where tax on sugar-sweetened beverages has been levied) that indicates that in 2014, sales of taxed beverages declined by an average of 6%. According to the WHO, Dr Dommarco, co-author of the study, asserted that the study indicates that excise tax on sugar-sweetened beverages is not the only solution but plays an essential role in the prevention of obesity. The WHO explained that, although the Soft Drinks Manufacturers Association of Mexico argued that the implementation of the excise tax on sugar-sweetened beverages is regressive, the study found that the decline in purchases of soda drinks was higher among the poor and, with that, they expect improved health amongst lower-income people.

According to Chriqui *et al*. (2013) excise taxes on sugar-sweetened beverages in the United States of America are too low to have a significant impact on overall weight loss and a decrease in obesity. Research undertaken by Krukowski (2015) to investigate the perceptions of adolescents, found that several factors, including their environment and their habits, make it difficult for adolescents to reduce their consumption of sugar-sweetened beverages, but a suitably high excise tax may persuade them to decrease their consumption.

Economists have focused on taxing goods that generate negative externalities (Cawley, *et al.*, 2020a, p.1). Sugary-sweetened beverages generate the negative externalities of non-communicable diseases.

1.2 REACTIONS TO THE PROPOSED HEALTH PROMOTION LEVY

This section presents the reactions of industry and health professionals to the introduction of the Levy. Differing views were expressed regarding the implementation of a tax on sugary beverages. The main concerns of stakeholders advocating against the implementation of the tax included job losses, the impact on the livelihood of upcoming sugarcane farmers, and how

the income generated from the tax on sugary beverages would be applied. Other opinions expressed were in favour of the tax due to the severe impact excess sugar intake has on a person's health.

The Beverage Association of South Africa (BevSA) (2017, p.3 – 4) is an industry organisation that, at the time, represented 92% of the non-alcoholic beverage industry (excluding dairy products and fruit juice). The Association indicated that the industry includes bottlers, producers, merchants, distributors, importers, and resellers, makes a meaningful contribution towards South Africa's economy, and assists with the country's job creation efforts. Although the Association found the obesity dilemma in South Africa troublesome and pledged to be a part of the solution, it believed that the fight against excessive calorie intake would only be won if calorie intake across a person's entire diet is considered and not only the calories in sugary drinks. Furthermore, the Association believed that the tax on sugar-sweetened beverages is not a viable solution in the long run because of the adverse effects it will have on job creation and the South African economy (Beverage Association of South Africa, 2017, p.3). The Association stated that, apart from job losses, the gross domestic product (GDP) will decrease by R1.85bn if the revenue generated from the tax is used to decrease the fiscal deficit, and that the biggest impact of introducing the tax on sugary beverages would be experienced by the informal sector, with expected total job losses to reach around 24 000 (Beverage Association of South Africa, 2017, p.6). Informal traders such as "spaza" shop owners and street vendors often depend on selling affordable sugar-sweetened beverages. When prices increase due to taxation, consumer demand may reduce, which could potentially force some traders out of business.

First, the Beverage Association of South Africa (2017, p.9) suggested that calorie intake should rather be reduced by reformulation and that products that have lower sugar content or sugar free products should be introduced. In their view this would lead to a reduction in calorie intake four times that of the reduction envisioned by the Levy. Secondly, the Association expressed the opinion that partnership programmes should be introduced to encourage a change in social behaviour regarding consumption of sugary beverages.

Coca-Cola Beverages South Africa (Pty) Ltd operates throughout the country and manufactures, bottles, and distributes non-alcoholic beverages to suppliers, who range from retailers to "spaza" shops (Coca-Cola Beverages South Africa, 2017, p.2). Coca-Cola Beverages South Africa (Pty) Ltd (2017, p.3) acknowledged their part in adding to consumers'

calorie intake but stated that they are devoted to support programmes and stakeholders to fight obesity. The company stated that it was of the opinion that a tax on sugary beverages would not, as a starting point or on its own, combat obesity or non-communicable diseases, and suggested that any approach or mechanisms to be employed in the fight to curb the occurrence of obesity and non-communicable diseases should be supported by thorough research specifically related to the causes of obesity and these diseases in South Africa.

Coca-Cola Beverages South Africa (Pty) Ltd (2017, p.4) stated in their submission to the Parliamentary Standing Committee on Finance and the Portfolio Committee on Health that the tax on sugary beverages is discriminatory in nature as it only applies to sugary beverages, whereas foods rich in calories, for example cereals and vegetable oils, are substantial contributors to increased calorie intake. The company expressed its concern about the negative impact the tax would have on employment and the economy. Coca-Cola Beverages South Africa (Pty) Ltd (2017, p.6) at the time provided employment to about 7 500 people and expected about 2 000 job losses in the company alone, should the tax on sugary beverages be implemented. Lower demand due to increased prices of sugar-sweetened beverages could lead to decreased production volumes, which may require fewer employees across different stages of the supply chain. The company indicated that a further closing down of approximately 10 000 "spaza" shops was anticipated due to a decrease in demand resulting from the introduction of the tax. Lastly, Coca-Cola Beverages South Africa (Pty) Ltd stated its commitment to the Department of Health to introduce an action plan to support the fight against obesity and non-communicable diseases, pledged to lower its products' sugar content and requested more time to do so before the tax on sugary beverages was introduced.

According to Tongaat Hulett's website (Tongaat Hulett, 2018), the company has the ability to deliver more than 1 million tons of sugar per year from its four sugar mills in South Africa. The refinery, situated in Durban, produces 600 000 tons of refined sugar per annum. In its submission to Parliament, Tongaat Hulett Sugar South Africa (2017, p.1) stated that, although the company backs the government's goal to reduce the prevalence of obesity and non-communicable diseases, the company objected to the proposed tax on sugary beverages as it would be unsuccessful in producing the desired effect and would, in fact, be to the detriment of the economy in certain rural areas. The company indicated that, amongst others, that over-consumption of food calories and not sugary beverages are the main contributor to obesity, and that the proposed sugar tax would only contribute to an insignificant 0.24% to 0.32% in decreasing total food energy intake.

Tongaat Hulett Sugar South Africa (2017, p.1) was also concerned about the impact of the proposed tax on millers and sugarcane farmers, as the sugar prices were already the lowest in the Southern Africa region, with very small profit margins. With anticipated lower demand from beverage manufacturers, the demand for raw sugar would reduce, potentially leading to an oversupply in the market with a consequent reduction in the price. The company stated that it also provides employment to residents in some rural areas of Mpumalanga and KwaZulu-Natal who are without many alternative job opportunities. Furthermore, Tongaat Hulett Sugar South Africa (2017, p.2) raised the concern that the adverse effect of the tax on sugary beverages would be intensified should manufacturers of sugary beverages opt to replace sugar with other substitute ingredients to reduce the Levy's impact. The company raised the other concern that National Treasury would increase the tax rate should the occurrence of obesity not decrease satisfactorily. Lastly, considering that the company claimed that sugar is not the main culprit for excess calorie intake, in its view, the constant increase in the tax rate would lead to the unavoidable closure of many farming operations and sugar mills and intensify poverty in rural areas of Mpumalanga and KwaZulu-Natal.

Cosatu (2017, p.2), a federation of trade unions, acknowledged the fact that the nation is facing a dilemma due to the impact that obesity and diabetes have on the country, and stated that a unified approach to tackling this problem should be adopted. The federation raised its concern about possible job losses amongst sugar mills, sugarcane farmers, transporters, and manufacturers, given the overall 35% unemployment rate at the time. Cosatu, like many other stakeholders, found it concerning that the tax only concentrates on one area, namely sugary drinks, and not on over-consumption of foods like sweets, salt, "pap" (maize porridge), etc. Cosatu argued that the absence of a blanket approach by government to promote a healthy lifestyle and healthy dietary decisions amongst the population would create the impression that the main aim of the tax is to decrease the fiscal deficit instead of addressing the health crisis in South Africa.

Cosatu (2017, p.2 - 3) pointed out that although government estimates that 5 000 jobs will be lost, and 3 000 emerging sugarcane farming operations will be at risk of closing down due to the tax on sugary beverages, the South African Canegrowers Association, however, estimated that in the sugar industry alone about 5 817 jobs would be at risk, with another 72 000 jobs in other industries. According to Cosatu, the South African Canegrowers Association also estimated that not only 3 000 farms, but 20 000 farming enterprises will be at risk of collapsing. Cosatu was deeply concerned about government's ability to create, save, and protect jobs.

Cosatu's (2017, p.4) submission praised the government for excluding 100% pure fruit juice from the initial submission on the proposed tax and opposed the call by some stakeholders to include 100% pure fruit juice and milk, due to fruit and natural fruit juices being significant export commodities and increasing the prices of these export products with no available substitutes would have a serious effect on jobs in the rural areas of the Limpopo Province and the Western Cape. Cosatu was of the view that it is counter-productive of government to encourage people on the one hand to drink more water, but then on the other hand municipalities are telling people to use less water and increase the tariff on water by double digits. The burden on the poor just increases. Lastly, Cosatu (2017, p.5) agreed that government should address the health crisis and proposed that, should the Levy be rolled out, the revenue should be ring-fenced and not applied by Treasury to "balance the budget".

The Healthy Living Alliance is an alliance of non-governmental organisations with the goal to build a healthy food environment for South Africa by empowering South Africans to make healthier food and lifestyle choices in the fight against non-communicable diseases (Healthy Living Alliance, 2019). The Healthy Living Alliance (2017, p.1) commended government for taking steps to address the health concerns in South Africa and emphasised the importance of the tax by stating that sugary drinks are the main culprits in the contribution to tooth decay, some cancers, cardiac diseases, obesity and diabetes.

The South African Paediatric Association (2017, p.1), a speciality group of the South African Medical Association, praised Treasury for the proposed tax on sugary beverages and stated that the tax would support the government in its responsibility to assist in the achievement of children's optimal health. The Association confirmed that the occurrence of tooth decay, obesity and diabetes is increasing amongst the country's children, and paediatricians are battling to cope with the increased load. The Association stated that the consumption of sugar by children (especially sugar-sweetened beverages) contributes to the growing prevalence of these diseases and the introduction of a tax on sugary beverages would therefore have the greatest impact on children.

The Association for Dietetics in South Africa is a professional non-profit organisation of registered dietitians with the goal to enhance the health of South Africans in terms of their diet. The Association for Dietetics in South Africa (2017, p.1) applauded government for taking the country's health crisis to heart by introducing the tax on sugary beverages. The Association submitted that the over-consumption of added sugars increases the risk of tooth decay as well

as obesity, and obesity in turn increases the risk of contracting non-communicable diseases. The Association confirmed that an alarming 22.9% of children in South Africa between the ages of 2 and 14 are overweight or obese.

The Healthy Living Alliance (2017, p.2), the South African Paediatric Association (2017, p.2), and the Association for Dietetics in South Africa (2017, pp.1-3) made the following four suggestions to reinforce the effectiveness of the tax:

1. All sugar must be taxed in all sugary drinks. All three institutions opposed the threshold of four grams per 100ml, believing that it would reduce the effect of the tax on health.
2. The tax rate on concentrates should be increased. Instead of turning to sugary concentrates that are cheaper, South Africans should rather be motivated to drink low-sugar beverages.
3. Beverages with added sugar should all be taxed. The Healthy Living Alliance, as well as the South African Paediatric Association proposed that all beverages should be included in the tax where caloric sweeteners are added, for example fruit juices and dairy-based beverages.
4. Revenue raised from the tax should be applied to the benefit of health in South Africa.

Both the Healthy Living Alliance and the Association for Dietetics in South Africa stated that it is crucial for government to utilise the revenue for the intended goal and emphasised that the health of the country should benefit from the revenue. Apart from these suggestions, the South African Paediatric Association (2017, p.2) and the Association for Dietetics in South Africa (2017, p.1) also proposed that a higher tax rate of 20% should be introduced to have the desired effect on the consumption of sugary beverages.

From the submissions discussed above, it is clear that South Africa is facing a burden of non-communicable diseases on the one hand and experiencing employment challenges on the other. Whilst it is believed by some stakeholders that the Levy may have a positive impact on consumers' health choices, other stakeholders are concerned with the job losses that will be suffered with the introduction of the Levy.

1.3 THE IMPLEMENTATION OF THE LEVY

According to National Treasury (2016b), a 20% price increase on sugar-sweetened beverages was suggested to have the desired effect on the public's health. At that stage (July 2016) it was proposed that a tax rate of 2.29 cents per gram of sugar should be levied. The initial date of implementation of the tax on sugar-sweetened beverages was planned for 1 April 2017 but due

to comprehensive discussions on the impact of the sugar tax on the sugar industry and employment, as well as ways to reduce these risks, the implementation was delayed until 1 April 2018 (Government Gazette, 2017, p.12). The rate was set at 2.1 cents per gram, with a threshold of four grams per 100 ml, which meant that a sugar content below this threshold would not be taxed (National Treasury, 2017b, p.1). The name of the sugar tax on sugar-sweetened beverages was changed to the Health Promotion Levy (National Treasury, 2018b, p.47). National Treasury (2019, p.44) introduced an increase to 2.21 cents per gram in excess of the threshold as from 1 April 2019.

During the 2020/2021 fiscal year, no increase was made to the Health Promotion Levy (the "Levy"). In the 2022 Budget, the Minister of Finance announced an increase in the Levy to 2.31 cents per gram of sugar for sugar-sweetened beverages exceeding four grams of sugar per 100 ml. The increase was to be effective from 1 April 2022 but was postponed. The Minister of Finance also announced that consultations would be initiated to consider lowering the threshold of four grams as well as broadening the tax base of the Levy to include fruit juices (National Treasury, 2022b, p.1). In the 2023 Budget, however, the Minister of Finance announced that the Levy would remain unchanged for the following two fiscal years (National Treasury, 2023, p.15).

The Health Promotion Levy on sugary beverages is legislated in Chapter VB of the Customs and Excise Act, No. 91 of 1964 and the accompanying Rules, with effect from 1 April 2018 (SARS, 2018b). It is levied in support of the Department of Health's goal to decrease non-communicable diseases in South Africa. The rate is presently fixed at 2.1 cents per gram of sugar content exceeding four grams per 100 ml. Sugar content means both the intrinsic and added sugar and other sweetening matter and will be calculated on the sugar content as certified in a recognized test report or, in the absence of a report, a deemed sugar content of 20 grams per 100 ml will be assumed. The tax base does not include beverages only containing intrinsic sugars, such as 100% fruit juices and unsweetened milk products (SARS, 2021).

All goods manufactured or imported as specified in Schedule No.1 Part 7, Section A of the Customs and Excise Act, No. 91 of 1964, are subject to the payment of the Levy and manufacturers and importers will be liable to pay the Levy (SARS, 2021). Non-commercial manufacturers are exempted from paying the Levy. Commercial manufacturers are persons manufacturing sugary beverages with a sugar content exceeding 500 kilograms per calendar year (SARS, 2018b, p.12).

The tax liability for the Levy is self-assessed by licensed manufacturers and payable monthly via E-filing on an excise return (SARS, 2021).

A study conducted by Hattersley and Mandeville (2023) identified 104 excise taxes on sugar sweetened beverages worldwide, highlighting the effectiveness of excise tax as an instrument to selectively increase the cost of unhealthy products.

Table 1.1 summarises the budgeted, revised, and actual income of the Levy since its introduction.

Table 1.1 Budgets, revised estimates, and actual income from the Levy

	2018/2019		
	Budget	**Revised estimate**	**Actual income**
	R thousands	R thousands	R thousands
Domestic taxes	1 684 758	2 395 758	3 195 110
International transactions	245 242	78 242	53 052
Total	1 930 000	2 474 000	3 248 162
Source	(National Treasury, 2018a, p.197)	(National Treasury, 2019, p.195)	(National Treasury, 2020, p.190)
	2019/2020		
Domestic taxes	1 986 067	2 590 033	2 446 184
International transactions	245 242	54 308	66 606
Total	2 231 309	2 644 341	2 512 790
Source	(National Treasury, 2019, p.195)	(National Treasury, 2020, p.191)	(National Treasury, 2021, p.210)
	2020/2021		
Domestic taxes	2 860 369	1 951 790	2 046 177
International transactions	74 619	56 114	67 429
Total	2 934 988	2 007 904	2 113 606
Source	(National Treasury, 2020, p.191)	(National Treasury, 2021, p.211)	(National Treasury, 2022, p.202)
	2021/2022		
Domestic taxes	2 149 910	2 210 621	2 182 323
International transactions	65 053	78 229	77 510

Total	2 214 963	2 288 850	2 259 833
Source	(National Treasury, 2021, p.211)	(National Treasury, 2022, p.203)	(National Treasury, 2023, p.206)
	2022/2023		
Domestic taxes	2 355 163	2 319 698	2 194 700
International transactions	85 620	113 502	110 194
Total	2 440 783	2 433 200	2 304 894
Source	(National Treasury, 2022, p.203)	(National Treasury, 2023, p.207)	(National Treasury, 2024, p.202)
	2023/2024		
Domestic taxes	2 476 274	2 253 946	
International transactions	113 571	107 179	
Total	2 589 845	2 361 125	
Source	(National Treasury, 2023, p.207)	(National Treasury, 2024, p.203)	Not available at the time of writing.

Source: Own formulation

From the table above it can be seen that SARS collected 90% more from the Levy in the 2018/2019 fiscal year than was originally budgeted (R3.195 billion collected versus R1.684 billion budgeted). The decrease in the actual revenue income collected from the Levy from R3.195 billion in the 2018/2019 tax year to R2.194 billion in the 2022/2023 tax year, suggests that the decline may be partly due to the success of the Levy in changing behaviour towards a healthier lifestyle, and the reduction in the sugar content by manufacturers of sugary beverages.

The Healthy Living Alliance (2021) reported that according to Michael Sachs, former head of the National Treasury's Budget Office, the fundamental goal of the Levy is not to increase tax income, but to change consumers' behaviour. He substantiated this by stating that, when the main purpose of a tax on consumption is to raise revenue, the tax should firstly be widespread to cover as many bases as possible and, secondly the consumption demand should be highly inelastic so that consumers' behaviour will not change with an increase in price. Regarding the tax base of the Levy, the tax is not widespread but focused narrowly on the amount of sugar included in a specific group of products. Hofman, *et al*. (2021, p.5) concluded that the demand for sugar-sweetened beverages is elastic, because the intake of sugar contained in sugar-sweetened beverages decreased substantially after the implementation of the Levy.

According to Campbell (2018, p.369-372), another important factor to consider is the design of the Levy, as design considerations are exceptionally sensitive where tax policy is concerned. The public's perception about the advantages of, and their eagerness to pay different taxes, can be determined by its design. The Healthy Living Alliance (2021) stated that South Africa broke new ground by applying a marginal increase in tax per gram of sugar, and that this design might possibly be the key to the success of the Levy as it encourages reformulation and resizing of sugary beverages by manufacturers.

Concerns were raised regarding the true motivation for the Levy as the revenue it raises is not ring-fenced or specifically earmarked to combat the prevalence of non-communicable diseases. How governments allocate the tax revenue they collect can influence how noticeable and appealing the benefits are (Campbell, 2018, p.372). In 2019, National Treasury spokesperson, Jabulane Mulambo, reacted to the request of experts in public health to ring-fence the revenue from the Levy, stating that ring-fencing a tax is not in accordance with the policies of Treasury and the taxes collected from the Levy will be utilised to cover general expenses of the fiscus (Green & Pilane, 2019). The Skills Development Levy, Act 9 of 1999, is one example where the ring-fencing of funds can be viewed as disadvantageous to the fiscus. The Skills Development Levy was introduced to promote development and improve the skills of employees in South Africa and is distributed by Skills Education Training Authorities in South Africa (SETAs). The Healthy Living Alliance (2021) explained that, although South Africa is experiencing a fiscal crisis, the resources from the Skills Development Levy cannot be reallocated for other purposes by government. Treasury, however, plans to apply the tax revenue from the Levy to address broader budgetary demands.

1.3.1 The response of industry after the introduction of the Levy

The design of the Levy focuses on the source of the harm caused by sugar-sweetened beverages by taxing the sugar content and not the volume of the sugary beverages, and as a result has incentivised reformulation by manufacturers. According to Professor Karen Hofman (Nortier, 2021), the director of Priceless SA, a research team based at the Wits School of Public Health, the introduction of the Levy resulted in an increased price of sugar-sweetened beverages as well as a reduction in both the size of the container and the sugar content of these drinks.

A study carried out in South Africa by Stacey *et al*. (2019) presented evidence of the response by industry to a linear tax with an initial tax-free threshold (the Levy introduced in South Africa). The study found compelling confirmation of product reformulation. Interestingly,

increases in prices of carbonated beverages containing low sugar levels (effectively subject to the Levy at R0 per litre) were similar to increases in prices of carbonated beverages containing high levels of sugar. Evidence from the study implied that the Levy was unsuccessful in differentiating the price between carbonated beverages with high sugar content and carbonated beverages with low sugar content. Stacey, *et al*. (2019, p.6) concluded that the Levy did not produce an incentive for consumers to replace carbonated beverages containing high levels of sugar with lower sugar or diet options.

The Coca-Cola Company (2022) reported that, in 2020, almost 125 000 tons of added sugar were cut from recipes by the company due to product reformulation. According to the company, beverages with low and no sugar content make up about 36% of the company's beverage portfolio, while the Coca-Cola Company also offers beverages with hydration as well as nutrition advantages like teas, juices and waters, and is continually developing and broadening across their portfolio to provide healthier options. Further, according to the Coca-Cola Company (2022), a reduction in sugar of at least 30% was introduced worldwide in some of the company's leading brands, including Coca-Cola, Sprite, Fanta and Fuze Tea. The company stated further that container sizes of 250ml or less make up about 42% of the company's sparkling brands and the company is expanding the availability of these sizes on a continuous basis. The Coca-Cola Company indicated its commitment to presenting nutritional information on the back and the front of all their products for consumers to be able to make informed choices. According to Independent Online (2017), the Coca-Cola Company discontinued the production of the 2.5-litre sized beverages, decreased the 2.25 litre to 2 litre bottles, the 500 ml to 440 ml bottles, and the 330 ml to 300 ml cans. In a 2023 Portfolio Update, the Coca-Cola Company (2024) stated that 68% of the products in their beverage portfolio have less than 100 calories per 12 ounce (355 ml) serving.

The Beverage Company (2019, p.7), formed in 2018 out of an acquisition between SoftBev and Little Green Beverages, is the second largest soft drink manufacturer in South Africa and supplies brands such as Coo-ee, Jive, Reboost, 7UP, Capri-Sun, Mirinda, Mountain Dew, Pepsi and Pepsi Max. The company stated that six months before the implementation of the Levy, reformulated beverages were placed on the market, and the company is constantly looking for ways to improve the product ranges to satisfy consumers in terms of health, taste and value. The company's biggest energy brand, Reboost, was successfully reformulated to contain only four grams of sugar, where it previously contained 12 grams of sugar. PepsiCo (2024) declared

that, as part of their *pep+* ambitions, they aimed for 67% of the products in their beverage portfolio to contain 100 calories or less per 12 ounce (355 ml) serving by 2025.

The Beverage Association of South Africa (2018), however, was of the view that while health considerations are imperative for society, the effects of the Levy on the economy are unsettling given the fact that the beverage industry makes a considerable contribution to South Africa's economic output, and generated R17.5 billion in tax revenue, as well as providing between 260 000 and 306 000 jobs.

A report was requested by the National Economic Development and Labour Council (NEDLAC) to investigate the social and economic consequences of the Levy in South Africa and specifically on the sugar and beverage industries. This Impact Assessment Report (Wesbound (Pty) Ltd, 2020) made use of a Computable General Equilibrium (CGE) model to determine the effect of the Levy on the economic output and employment of the sugar and beverage industries. From the data generated, it was concluded that the introduction of the Levy led to increased consumer prices, which reduced demand and subsequently affected production levels, resulting in a reduction of R1.58 billion in the contribution to GDP, and 1 104 jobs that were lost by 2019 in the beverage industry. The report stated that the sugar industry, consisting of milling and sugarcane farming, also experienced a reduction of R1.19 billion in the contribution to GDP, and 9 711 jobs by 2019 due to the introduction of the Levy.

1.3.2 Reactions to a planned increase in the Levy

Wesbound (Pty) Ltd (2020, p.2) concluded that, although reformulation of sugary beverages mitigated the negative impact of the Levy on the beverage industry, and the sugar industry experienced an increase in production after the severe drought cycle, costs to reformulate beverages and the reduction in sugar prices around the world are some factors to consider when considering an increase in the Levy. These factors, together with possible increases in the rate of the Levy, would have further adverse effects on employment and economic output in the future.

Nzama Mbalati, head of the Healthy Living Alliance, argued that R2 billion could be collected by the fiscus should the Levy be doubled, which could lead to the employment of thousands healthcare employees (Nortier, 2021). Mbalati (2021) criticised the NEDLAC report (Wesbound (Pty) Ltd, 2020) stating that the report overlooked, amongst others, the impact of the drought on the sugar industry, as well as escalating input costs. He further stated that the

report's methodology "doesn't pass the laugh test". Although Mbalati sympathised with the concerns of the sugar industry about employment losses, he stated that the Healthy Living Alliance does not agree with the industry using the global economic crisis and other factors "to support a self-serving and false narrative on the health promotion levy and job losses" and urged an increase of the Levy to 20% for it to remain effective.

Andrew Russel (2021), at the time chair of the South African Canegrowers Association, responded in an article to the remarks made by Mbalati (2021), describing Mbalati's sympathy as "cold comfort", as the main thrust of the article was dedicated to discounting the overwhelming negative impact of the Levy on the sugar industry and the one million people depending on it to make a living. Russel stated that the Healthy Living Alliance claimed that the NEDLAC report (Wesbound (Pty) Ltd, 2020) did not take other factors into consideration that could lead to job losses in the sugar industry, but pointed out that by merely reading the section in the report containing the methodology, it could be concluded that the model that was used isolated the effect of the Levy on the sugar industry from other factors. Russel continued, emphasising the fact that the NEDLAC report (Wesbound (Pty) Ltd, 2020) did in fact mention that the sector was recovering from the drought crisis when it was hit with the implementation of the Levy.

Russel (2021) also criticised the alliance's demand for an increase in the tax in the midst of the COVID-19 pandemic, without considering the impact of this increase on the country's sugarcane farmers and workers, given the history of unemployment in South Africa. He expressed the opinion that health and employment should not be at odds with each other, and that balance should be the priority in policymaking, a balance valued most by the workers and communities in rural areas where employment opportunities are limited, and food shortages result in a health threat. On behalf of the South African Canegrowers Association, he urged the government to repeal the Levy until the effectiveness of the Levy on the health concerns in South Africa has been established.

The South African Canegrowers Association (2021) argued that there is little or no confirmation that the implementation of the Levy resulted in a decline in the prevalence of obesity in South Africa, in spite of evidence obtained during two studies done in Langa and Soweto that the Levy has had a positive impact on the intake of sugar-sweetened beverages in young adults in those areas. According to the Association, the sugar industry requested the

government on multiple occasions to commit to a study to determine whether the implementation of the Levy accomplished its purpose of improving health.

In a media statement (South African Canegrowers, 2024a), Higgins Mdluli, current chairman of the South African Canegrowers Association, revealed that the Levy was scheduled for review during phase one of the Sugarcane Value Chain Master Plan, a contract between canegrowers, millers, retailers and the government to address threats and explore opportunities for growth and employment. However, according to Mdluli, this commitment has not been fulfilled and to date no significant engagement has occurred with the industry. In the statement, Mdluli expressed his concern that the Levy is holding back investment in the transformation of the industry. He believes that the Levy should be repealed to promote transformation and urged the government to fast-track the value chain diversification project through the second phase of the Master Plan, including support for diversification into strategic areas such as aviation fuels.

The South African Sugar Association (2024) appealed to the government to delay any increase in the Levy until 2030, aligning with the timeline of the Sugarcane Value Chain Master Plan, expressing the concern that, should the moratorium not be extended to 2030, farmers are likely to abandon sugarcane farming due to financial losses. According to the Association, the Levy had already led to the closure of two mills in KwaZulu-Natal, and the Association estimated that a further loss of R720 million per annum would occur if the moratorium falls away.

In support of this appeal, the South African Canegrowers Association and the South African Farmers Development Association urged the President and his administration to either abolish the Levy entirely, or at a minimum, extend the price increase moratorium until 2030 to allow sufficient time for the Master Plan processes to be completed and for targeted product diversification opportunities to be explored (South African Canegrowers, 2024c). In late October 2024, the South African Canegrowers Association (2024e) wrote an open letter to Finance Minister, Mr Enoch Godongwana, urging him to uphold the commitment made in the 2023 budget to initiate consultations with affected stakeholders regarding potential adjustments to the Levy. The letter emphasised that the government has committed to undertake two evidence-based studies: one to assess the population's total dietary intake to better understand all the factors contributing to obesity and lifestyle-related diseases in South Africa and another study to evaluate the socio-economic impact of the Levy. However, according to the South African Canegrowers Association (2024e), these studies are still incomplete. The Association

called on the Minister again to either scrap the Levy or extend the moratorium on its expansion or increase until the promised consultations have been held.

The Healthy Living Alliance (2024a) confronted the sugar industry, stating that it relies on its own studies to claim job losses due to the Levy. However, these studies often overlook broader factors like sugar dumping, droughts, the Durban riots, and Tongaat Hulett's corporate fraud (which caused 5 000 retrenchments). The Alliance believes that the extent of job losses directly linked to the Levy remains uncertain. The Alliance furthermore expressed frustration that industry has for too long obstructed worldwide health promotion efforts by making deceptive economic threats, supporting "junk" science minimising health risks, and other strategies, to undermine sugar tax advocacy by swaying governments, the media, and the public. The Alliance warns that South Africa is on the edge of a non-communicable disease cliff and should not be bullied by industry into making misinformed decisions for their benefit.

During 2024, the Healthy Living Alliance (2024b) launched a campaign, encouraging the public to sign a petition to call on Finance Minister Enoch Godongwana and his administration to increase the Levy to 20% and to expand its tax base. The Alliance highlighted that the Child Support Grant has not kept track with increased food prices, leaving many children hungry. The Alliance called on the Minister to increase the Levy to help fund an increase in the grant, aiming to combat child hunger and curb the consumption of sugar-sweetened beverages that are linked to non-communicable diseases.

The South African Canegrowers Association (2024d), which represents 24 000 small-scale canegrowers and 1 200 commercial farmers, fiercely opposed the Healthy Living Alliance campaign. The Association urged the Healthy Living Alliance to stop spreading what they consider to be misleading information. The Association argued that over two-thirds of the South African population fail to consume adequate calories for a healthy lifestyle and that increasing the Levy will not solve this problem. The Association claimed that it is misleading to encourage people to sign the petition based on these factors. The Association also expressed concern that the Healthy Living Alliance, an American-funded non-governmental organisation, is influencing South Africa's food and tax policies, arguing that solutions should be locally driven. Additionally, the South African Canegrowers Association strongly opposed the Healthy Living Alliance's claims linking the sugar industry's challenges to Tongaat's mismanagement, which negatively affected pension funds. The Association argued that making this connection

shows a deliberate misrepresentation of the sugar industry, emphasising that the isolated case of accounting fraud is not the root cause for the industry's challenges.

The response from the Healthy Living Alliance (Mbalati, 2024, p.1) was that the claims of the sugar industry are the "product of fearmongering and pressure from powerful industries". The alliance claimed that the Levy promotes health equity as sugary beverages have a disproportionate impact on low-income communities who endure the greater burden associated with healthcare costs. The alliance cautioned against weakening the Levy, urging instead that it should be strengthened to benefit the health, economy and future of the country.

On 31 October 2024, the South African Canegrowers Association (2024f) released a statement welcoming the fact that the Minister of Finance did not announce an increase in the Levy during his 2024 Medium Term Budget Policy Statement. The Department of Trade, Industry & Competition (2024) pledged to support the sugar industry to promote diversification and protect jobs. This commitment was announced by the Deputy Minister of Trade, Industry and Competition, Mr Zuko Godlimpi, and the Deputy Minister of Agriculture, Rural Development and Land Reform, Ms Zoleka Capa. The announcement took place during a meeting between government and stakeholders of the sugar industry in Durban, KwaZulu-Natal on 5 November 2024 to discuss industry's role as a catalyst for economic development and job creation, particularly in the rural areas of KwaZulu-Natal and Mpumalanga.

The Democratic Alliance (2024) submitted a tax reform proposal to National Treasury in which they requested that the government repeal the Levy due to a lack of evidence that the Levy has achieved its intended goals. The Alliance held the view that the Levy has a negative economic impact on the sugar industry. This proposal was welcomed by the South African Canegrowers Association (2024g), agreeing with the Democratic Alliance that the Levy causes more harm than good.

Researchers from the South African Medical Research Council and the Wits Centre for Health Economics and Decision Science released a study (Dare, *et al*., 2024), a preprint report not yet peer reviewed at that stage, which concluded that job losses in the sugar-related industries are not associated with the implementation of the Levy. The current chairman of the South African Canegrowers Association (2024b, p.1), Higgins Mdluli, dismissed the report saying that the Quarterly Labour Force Survey dataset was used, which averages employment in all areas of the agricultural sector of South Africa, including the livestock, citrus and grain sectors, and led to an "incorrect and disingenuous conclusion". The chairman referred to the findings of the

Impact Assessment Report (Wesbound (Pty) Ltd, 2020) and highlighted that the Levy is responsible for an estimated decrease of 250 000 ton of domestic sugar sales.

In addition, studies by the Bureau for Food and Agricultural Policy showed that under the current tax policy of the Levy, an additional 10% decline in direct employment within the sugarcane industry is anticipated by 2031 (Bureau for Food and Agricultural Policy, 2023).

1.4 THE IMPACT OF COVID-19

Almost two years after the implementation of the Levy, in December 2019, the novel coronavirus (SARS-CoV-2) was discovered in Wuhan, Hubei province, China, triggering a pandemic of severe acute respiratory syndrome in humans (COVID-19). Due to the increasing number of reported cases in China, as well as at international locations, the WHO Emergency Committee declared a global health emergency on 30 January 2020 (Velavan & Meyer, 2020, p.278).

According to BusinessTech (2020), on 23 March 2020 President Cyril Ramaphosa announced the initial lockdown of 21 days starting from 26 March 2020. The level 5 lockdown was later extended until 30 April 2020. The Parliamentary Monitoring Group (2020) provided a summary of the lockdown restrictions resulting in citizens having to adjust their behaviours and routines abruptly and profoundly due to the restrictions. Social interaction reduced drastically. Eating habits and daily routines were specifically affected by the impact that isolation and social distancing had on the lives of the population. Physical activity was suddenly limited, and many citizens also stockpiled certain food items. According to Di Renzo, *et al*. (2020, p.2), possible boredom due to the quarantine restrictions, as well as increased stress levels from hearing and reading about the COVID-19 pandemic on media platforms, could lead to increased energy intake and overeating of "comfort foods" with high sugar content. The author stated that these foods are associated with an increased risk of becoming obese and developing cardiovascular diseases, which conditions had been demonstrated to increase dangerous COVID-19 complications.

Popkin, *et al*. (2020, p.1) believed that a strong connection exists between being overweight or obese and an increased risk of being hospitalised and requiring intensive care treatment when contracting the COVID-19 virus. The authors stated that the pandemic hit the world at a time when the occurrence of overweight or obese individuals was increasing. The authors also found that virtually all countries have a prevalence of more than 20% of individuals suffering with

overweight or obesity, while to date no country in the world has experienced a decline in the occurrence of overweight or obesity.

Hofman, *et al*. (2021, p.4) noted that, in South Africa, food security and nutrition were negatively impacted by the COVID-19 pandemic and explained that lockdown restrictions led to major economic disruption. The authors found that employed adults in the country decreased by 1.684 million between Quarter 3 of 2019 and Quarter 3 of 2020, and over the same period aggregate gross earnings paid to employees decreased by R43.848 billion, with the result that, according to telephonic surveys, a total of 47% of households did not have enough money to purchase food. The authors believed that the consumption of more affordable but nutrient-poor food is likely to cause an increase in the prevalence of obesity and diabetes. Hoffman *et al*. (2021, p.1) concluded that policies like the Levy, designed to combat public health diseases, are of utmost importance in view of the increased pandemic mortality among individuals suffering with obesity, diabetes, and hypertension.

1.5 THIS STUDY

The stated intention of National Treasury in introducing the Levy was to assist in reducing the intake of excessive sugar, especially among children (National Treasury, 2016b, p.2). The universal concern with the effect of sugar consumption on health and particularly on the health of children is the rationale for this study. For this reason, the study investigates parents' and guardians' awareness of the Levy and its objectives and their support for the Levy to determine whether the tax is likely to influence their decisions regarding providing sugar-sweetened beverages to their children.

Two theoretical perspectives inform the study. The first theory is the principles of a "good" tax system, based on the canons developed by Adam Smith (1776) and adapted by various authors to reflect the modern context. The reason for the choice of this theory is the assumption that if the parents and guardians participating in the research consider the Levy to be a "good" tax, they would be more likely to change their purchasing behaviour. The second theory is the *Health Belief Model of Behavior Change* (Alyafei & Easton-Carr, 2024, pp.1-7). This model emphasises how individuals interpret health threats and make decisions based on the importance they assign to a specific goal and their belief in the effectiveness of actions taken to achieve that goal (Alyafei & Easton-carr, 2024, p.1). These theories are used to predict the behaviour of the participants, to assist in developing questions in the research instruments, and to interpret the results of the study.

The study also discusses similar taxes imposed in Belgium, France, the United Kingdom and Mexico, where the experience with the taxes in these countries could provide a possible framework for recommendations to improve the design of the Levy in South Africa.

The study adopts a mixed-methods approach, combining quantitative and qualitative research approaches. A structured questionnaire will be administered to parents and guardians of learners in a sample of schools in the Bloemfontein area to gather data on consumption patterns, parents' and guardians' awareness of non-communicable diseases, their perceptions of government accountability and to determine whether purchasing behaviour of parents and guardians has changed regarding the provision of sugar-sweetened beverages for their children. The questionnaire will be administered to parents and guardians because they are the primary providers and decision makers regarding their children's dietary intake. The formulation of the questions in the questionnaire will be guided by the goals of the research, the literature review, the theoretical frameworks and the nature of the target population. Statistical techniques will be used to analyse the data and to identify associations between demographic variables and responses to the research instruments. Open-ended questionnaire questions and semi-structured interviews will be used to provide deeper insights into the questionnaire responses.

The implementation of the Levy marks a significant tax policy intervention focused on addressing the increasing rate of non-communicable diseases associated with high sugar consumption. This study analyses the Levy in detail and places it within the wider context of fiscal policy, socio-economic factors, and public health.

This study contributes to existing research by evaluating the Levy against the principles of a good tax system, ensuring that critique of the Levy is grounded in established principles. It also compares the Levy with sugar taxes in selected countries, providing a comparative perspective on how it aligns with international practice. Finally, the study interprets the findings through the *Health Benefit Model of Behavior Change*, extending a framework from health sciences into the analysis of fiscal policy.

1.6 CONCLUSION

Taxes imposed on sugar sweetened beverages are primarily designed to address public health concerns such as diabetes, obesity, and oral health problems by reducing the consumption of sugary drinks. Economists have focused on taxing goods that generate negative externalities (Cawley, *et al.*, 2020a, p.1). Globally, these taxes are increasingly viewed by policymakers as

a tool to improve public health and generate government revenue (World Bank, 2020, p.44). The South African government responded to this by introducing the Levy.

This chapter commenced by investigating the context that necessitated the introduction of the Levy. The opinions of stakeholders prior to the implementation of the Levy were discussed and it was found that the main concerns of stakeholders who advocated against the implementation of the Levy were the impact of the Levy on job losses, as well as the way in which the tax revenue raised from the Levy would be applied by government. Stakeholders who advocated for the implementation of the Levy were concerned about the negative impact of the consumption of sugar-sweetened beverages on the health of consumers.

The design of the Levy was explained, and reactions to the Levy after its introduction. The budgeted and actual income received from the Levy since implementation was revealed, demonstrating the increase in tax revenue from the Levy. An increase in the Levy was announced by the Minister of Finance in the 2022 Budget. The Minister of Finance also stated that consultations would be initiated to lower the threshold and broaden the tax base of the Levy. The mixed responses to an increase in the Levy were discussed. The increase was, however, postponed. During the 2023 Budget, the Minister of Finance announced that the Levy would remain unchanged for the following two fiscal years.

The concerns that were raised regarding the true purpose of the implementation of the Levy were highlighted, as the tax revenue from the Levy is not earmarked to combat the prevalence of non-communicable diseases but is included in the general budget. Finally, the aim of the study, its design, the theoretical models underpinning the research, and how the aim of the study will be achieved were discussed.

1.7 OVERVIEW OF THE FOLLOWING CHAPTERS

Chapter Two: Developing the research question

This chapter focused on the reasons why the present study was undertaken. The initial concern was the impact of sugar-sweetened beverages on the health of, particularly, children. From a review of the literature, factors were identified that may affect the success of the Levy in the reduction of the consumption of sugar-sweetened beverages. These factors were reflected in the research question and the main goal and sub-goals of the research and formed the basis of the questions included in the research instruments. Finally, the theories underpinning the research were referred to.

Chapter Three: Research methodology

The concept of a paradigm was discussed, and the attributes of the positivist and post-positivist paradigms were compared. An appropriate research paradigm, post-positivism, was identified for the present study. The paradigm, together with the ontology, epistemology, and methodology adopted for the research, were discussed. Recognised research methodologies were analysed and the most suitable research methodology for the study selected. The research design was explained, and specific reference was made to the ethical aspects of the study. Criteria of and steps taken to ensure validity and reliability were highlighted.

Chapter Four: The Levy and the principles of good tax policy

This chapter analysed the key elements of a tax system as well as the principles of good tax policy. It also investigated how the principles should be applied in a good sugar tax system. Finally, the chapter compared the principles of a good sugar tax system to the Health Promotion Levy to determine whether it is a good tax policy.

Chapter Five: A comparison of tax on sugary beverages in selected countries

The experiences in selected countries with a tax on sugary beverages were investigated with the aim to identify similarities and differences between countries as well as reasons for any changes in legislation. It also identified positive and negative aspects of taxes on sugary beverages implemented in the selected countries and compared this with the Levy introduced in South Africa to determine whether the South African Health Promotion Levy is a fair and effective tax.

Chapter Six: Quantitative data analysis

This chapter presented an analysis and interpretation of the closed-ended questions in the questionnaire.

Chapter Seven: Qualitative data analysis

This chapter presented the thematic analysis of the open-ended questions in the questionnaire and the data obtained from the interviews.

Chapter Eight: Summary and analysis of the results of the research.

A summary of the main themes established in the quantitative and qualitative analysis of the data, together with an interpretation of the study results in terms of the *Health Belief Model of Behavior Change*, was presented in this chapter.

Chapter Nine: Conclusion and recommendations

An overview of the findings in Chapters One to Eight was presented in this chapter. The chapter provided recommendations regarding changes to the Levy. The contribution of the study was described, and the limitations of the study were highlighted. Opportunities for future research were suggested.

CHAPTER 2

DEVELOPING THE RESEARCH QUESTION

2.1 INTRODUCTION

This chapter discusses the development of the research question. The global health problem arising as a consequence of the high consumption levels of sugar-sweetened beverages is referred to. The key factors giving rise to the Health Promotion Levy are examined. The research question is formulated based on the literature study presented in this chapter and translated into the main research goal and a set of sub-goals that guide the study. Finally, the chapter discusses the two theories that underpin the research.

2.2 RATIONALE FOR THE LEVY

The worldwide trade in products harmful to health is fuelling an epidemic of obesity with associated health problems. The WHO (2015, p.1) reported that sugar-sweetened beverages are a growing concern due to increased energy levels caused by free sugars, which lead to an unhealthy diet and weight gain. The WHO expressed concern that weight gain and poor eating habits are not only risk factors for non-communicable diseases but also for obesity, which is a determinant condition for non-communicable diseases and is rapidly worsening worldwide. The WHO also expressed alarm at the connection between free sugars, an unhealthy diet, the excessive intake of sugar, and especially sugar-sweetened beverages, and non-communicable diseases. Sadly, obesity is not only limited to adults, but the occurrence of childhood obesity is also increasing due to unhealthy feeding practices (Department of Health, 2015, p.6). In the Guideline entitled “Sugar Intake for Adults and Children”, the WHO (2015, p.16) strongly recommended that adults and children should reduce their free sugar intake to less than 10% of total energy intake and suggests a further reduction of free sugar intake to below 5% of total energy intake. The WHO (2015, p.2) furthermore suggested that the recommendations should be adopted by policymakers to create policies and procedures that will result in the reduction of free sugar intake.

The effect of a tax on sugary beverages is illustrated in a study by Chen, *et al*. (2009) on 810 adults in the USA designed to determine the effect of a change in beverage consumption on the weight of adults, which found that considerable weight loss was linked to the decrease in the intake of sugary beverages, after a period of six months, as well as after 18 months of reduced

consumption, and that the decrease in the intake of the beverages lead to greater weight-loss than the decrease in the intake of solid food containing calories.

The study by Hattersley and Mandeville (2023) found that national taxes on sugar-sweetened beverages cover 51% of the world population. Globally, jurisdictions have introduced a sugar tax in various forms. The World Bank (2020, p.15) concluded that most jurisdictions have implemented these taxes as excise taxes.

The initial concern that gave rise to the present study was concern about the impact of sugar-sweetened beverages on health and particularly the health of children, and whether the Levy will have the effect of reducing sugar consumption, thus providing a motivation for the research question and the goals of the present study.

2.3 FACTORS TAKEN INTO ACCOUNT IN DEVELOPING THE RESEARCH QUESTION

Eykelenboom, *et al*. (2019, p.2) argued that understanding the factors that influence public acceptability of a tax on sugar-sweetened beverages can provide deeper insight into the arguments for and against it, thereby informing strategies to improve support and enhance population health. The authors found that perceptions of effectiveness and cost-efficiency, economic and social benefits and public mistrust toward government significantly influence public acceptability of a tax on sugar-sweetened beverages.

The issues discussed below were identified in literature and considered in developing the research question, the goals of the research and the design of the study.

2.3.1 Health reasons or revenue stream?

The Levy introduced in 2018 by Treasury is only levied on sugar-sweetened beverages, which represents a very limited portion of all foodstuffs containing sugar. This leads to the question whether the Levy's primary aim was to increase Treasury's revenue or to positively change the behaviour of consumers (Bizcommunity, 2019). In Chapter One it was disclosed that in the public hearings on the Levy in 2017, a commentator recommended that some or all the Levy should be earmarked and used for health promotion initiatives, but National Treasury rejected this recommendation (National Treasury, 2017a). The chapter also set out the revenue collections from the Levy, which in the 2022/2023 fiscal year amounted to R2 304 894 million. It was explained in the chapter that National Treasury (National Treasury, 2018b, p.42) budgeted for revenue of R1 930 million from the Levy for the 2018/2019 fiscal year. The

medium-term expenditure estimates for the 2018/2019 fiscal year indicated that R74.2 million was allocated to Non-Communicable Diseases and R24.7 million to Health Promotion and Nutrition (National Treasury, 2018a, p.324). Thus, in total, only R98.9 million (5.12%) of the total budgeted revenue of R1 930 million from the levy was allocated to the purpose for which the Health Promotion Levy was introduced. These statistics indicate that one of the reasons for the Levy was to increase the revenue flowing into the national coffers.

According to Dorsey (2010, p.61) arguments are made that tax on sugar-sweetened beverages may produce the opposite result as governments might become dependent on the tax revenue and undermine the objective of reducing the consumption of sugar-sweetened beverages.

2.3.2 Impact on consumption

The World Health Organisation (2020, p.1) stated that behaviour such as excessive use of alcohol, the intake of unhealthy food, smoking, and inadequate exercise exert a strong influence on the occurrence of high cholesterol, high blood pressure and obesity, which in turn can cause non-communicable diseases such as cancer, diabetes, respiratory disorders, and heart disease. The Organisation found that these non-communicable diseases are the cause of more than 70% of mortalities the world over and are particularly destructive in lower as well as middle income countries. A study by the WHO (2020, p.171) on 194 countries, indicated that 51% of deaths in South Africa is caused by non-communicable diseases and the probability of premature mortality from non-communicable diseases is 26%. A drastic intervention to change modifiable behaviours is therefore inescapable.

South Africa, like countries all over the world, introduced an intervention in the form of a tax on sugar-sweetened beverages. A pertinent question is, therefore, what the impact of the tax is on the consumption of sugar-sweetened beverages.

Research was carried out in Soweto, South Africa, by Wrottesley, *et al*. (2020) on the consumption of sugar-sweetened beverages at the time that the intention to tax sugar-sweetened beverages was declared, when the Levy was implemented, as well as one year after the implementation of the Levy. More than 600 adults ranging in age from adolescents to adults in their middle age participated in the study. At the start of the study, the average consumption of sugar-sweetened beverages amounted to 36 ml per day for participants consuming low volumes of sugar-sweetened beverages, 214 ml per day for participants consuming medium volumes of

sugar-sweetened beverages and 750 ml per day for participants consuming high volumes of sugar-sweetened beverages.

Wrottesley, *et al*. (2020, p.2905) established that a significant decrease in both the quantity as well as the regularity in the intake of sugar-sweetened beverages occurred in participants who consumed medium and high volumes of sugar-sweetened beverages between the time that the intention was declared to levy the tax and at the time the Levy was introduced. The decreased consumption levels then stayed constant between the time of the implementation of the Levy and one year after the implementation, which indicated a predominant overall decrease in the intake of added sugar in the form of sugar-sweetened beverages by the participants. . Wrottesley, *et al*. (2020, p.2907) stated that an explanation for the decrease in the intake of sugar-sweetened beverages between the time that the intention of the tax was announced and the time the Levy was implemented may be that the awareness of the tax and its aim to encourage healthier decisions, even if it had not yet been implemented, motivated the consumers to reduce intake of sugar-sweetened beverages.

Another recent study conducted in South Africa by Stacey, *et al*. (2021) on the effect of the announcement and implementation of the Levy on beverage purchases, concluded that the volume, sugar content and calories of beverages purchased decreased after the announcement and implementation of the Levy. The study found that larger quantities of taxable sugary beverages were purchased by households with lower socioeconomic status in the period before the intention to tax sugary beverages was announced than households with higher socioeconomic status, but after the Levy was imposed, the households with lower socioeconomic status revealed larger reductions in purchases. It is submitted that lower income households are more price sensitive and that a small increase in the product's price due to the tax may significantly influence their buying decisions. The study indicated that the change in purchases of non-taxable beverages was non-significant between the period before the announcement and implementation of the Levy and after the announcement and implementation. The findings suggested, as concluded by Stacey *et al.* (2021, p.205), that the announcement and implementation of the Levy resulted in reduced purchases of sugar-sweetened beverages and therefore arguably a decrease in the volume, sugar, and calories consumed of taxable sugary beverages.

2.3.3 Equity and ethical considerations

Although the World Health Organisation (2016, p.230) suggested that taxation on sugar-sweetened beverages would be effective in helping to combat rising obesity rates, opponents of a tax on sugary drinks claimed that it is unfair and paternalistic and should therefore be avoided (Dorsey, 2010, p.53). According to Quiroz-Reyes, *et al*. (2025, p.2), tax on sugar-sweetened beverages can disproportionately affect low-income households as they tend to spend a larger share of their income on these beverages compared to households with higher incomes. The World Bank (2019, p.26), however, contended that the regressive nature of the tax is mitigated by the savings on the healthcare costs related to the consumption of sugar-sweetened beverages and income gains from the prolonged years of working life leading to a net positive impact on income. It is suggested, however, that these positive economic effects of the reduction in the consumption of sugar-sweetened beverages are not immediate, while the increased cost has an immediate economic impact.

Dorsey (2010, p.60) stated that it is often claimed that products like sugar-sweetened beverages have an inelastic demand as consumers of these items are in some sense addicted to them and will therefore continue to consume them despite price increases resulting from taxation. A study done by Cabrera Escobar, *et al*. (2013) took a different view, concluding that price increases are associated with lower demand by consumers for sugar-sweetened beverages.

The Levy can only be effective if it is fair and perceived to be fair. Thus, the present study sought to evaluate the fairness and potential effectiveness of the Levy and to determine whether the behaviour of parents regarding the intake of free sugars by their school-attending children has changed due to the imposition of the Levy. The four principles of a good tax policy as established by Adam Smith (1776), eight principles formulated by the Association of International Certified Professional Accountants (AICPA, 2017, p.3) and a comparison of distinguished publications done by Lombard and Koekemoer (2020) were used as the theoretical basis for determining whether the Levy is a "good" tax policy. The discussion of these principles is presented in Chapter Four.

As governments increasingly levy tax on sugar-sweetened beverages, it is essential that this is ethically justified (Dorsey, 2010, p.67). On examination of the major ethical theories, Dorsey (2010) concluded that virtue ethics offer a consistent and well-founded ethical framework to support a tax on sugary drinks. According to the author virtue ethics maintains that an action is ethical if it aligns with the behaviour of a virtuous person in the circumstances. Dorsey (2010,

p.67) concluded that, when viewed as a balanced approach to foster virtue and promote human well-being while still respecting freedom of choice, taxes such as a tax on sugar-sweetened beverages present a coherent and persuasive ethical rationale grounded in virtue ethics.

2.3.4 Public support for the Levy

A systematic global review and meta-analysis by Eykelenboom, *et al*. (2019) established that public support and effective implementation of a sugar-sweetened beverage tax are more likely when the revenue generated by the tax is allocated to health initiatives rather than the general budget, and when the government clearly communicates the true intended purpose of the tax. Tax on sweetened soft drinks at a flat rate of 7.16 Euro cents per litre was introduced in France in January 2012, but the design was revised with the aim to promote reformulation, and from July 2018 a tiered tax system based on the added sugar content was imposed (Le Bodo, 2019, p.12). The revised policy was incorporated into the 2018 Social Security Finance Bill, thereby ensuring that the revenue from the soda tax would be earmarked for the French healthcare system (Sarda, *et al*., 2022, p.3241). Le Bodo, *et al*. (2022, p.588) concluded that public perception and support of tax on sugar-sweetened beverages is more likely to improve when the revenue collected from the tax is directed towards public health initiatives. Findings from a study by Thow, *et al*. (2022) in Europe aligned with those of Le Bodo, *et al*. (2022), both emphasising the important role of earmarking the revenue collected in shaping political acceptability and the effectiveness of tax policy on sugar-sweetened beverages.

2.3.5 Effectiveness of taxes on sugar-sweetened beverages

A key concern is the degree to which a tax on sugar-sweetened beverages is passed through to consumers through increased retail prices, as this represents the primary way the tax could influence purchasing behaviour and, ultimately, public health (Cawley & Frisvold, 2017, p.304). Early in 2015, the city of Berkeley, California became the first city in the United States of America to introduce an excise tax on sugar-sweetened beverages at a rate of one cent per ounce (Silver, et al., 2017, p.4). In Berkeley, the pass-through was estimated to be between 43.1% (Cawley & Frisvold, 2017, p.313) and 47% (Falbe, *et al*., 2015, p.2198). Studies differ regarding the effect of the tax on sugar-sweetened beverages on purchasing behaviour in Berkeley. Bollinger and Sexton (2023, p.281) found limited evidence of reduced soda purchases in supermarkets, whereas Silver, *et al*. (2017, p.3) observed a 9.6% decline in purchases of taxed sugar-sweetened beverages. Similarly, findings in Berkeley on consumption are mixed: Rojas and Wang (2021, p.97) reported no significant reduction in sugar-sweetened

beverage consumption, while Falbe, *et al*. (2016, p.1865) noted a 21% decrease in consumption in low-income neighbourhoods following the implementation of the excise tax.

On 1 January 2017, the city of Philadelphia in the United States of America introduced a beverage tax of 1.5 cents per ounce on beverages containing sugar or sugar substitutes (Cawley, Frisvold & Jones, 2020b, p.1290). Evidence indicated that the tax was fully passed through to consumers through increased retail prices (Cawley, *et al*., 2020c, p.608), resulting in an average price increase of 21% per ounce (Cawley, et al., 2020c, p.623). Similar findings by Seiler, Tuchman and Yao (2021, p.23) suggested a pass-through rate of approximately 97%, equating to a 34% price increase, and a subsequent 22% decrease in net sales of taxed beverages. A study by Roberto, Lawman and LeVasseur (2019) reported an even bigger reduction in sales, estimating a decrease of 38% in the volume of taxed beverages sold in Philadelphia. Further analysis by Cawley, *et al*. (2019b) revealed a 31% reduction in the frequency of soda consumption among adults following the implementation of the tax. The same study found no significant change in average consumption among children, except for those identified as high consumers of sugar-sweetened beverages, whose intake decreased by 22%. Additionally, Zhong, *et al*. (2018, p.26) observed substantial behavioural changes within the first two months of the implementation of the tax, with the probability of daily consumption of regular soda and energy drinks declining by 40% and 64% respectively.

On 1 July 2017, Oakland, California introduced a tax of one cent per ounce on sugar-sweetened beverages, similar to the tax levied in Berkeley (Cawley, Frisvold & Jones, 2020b, p.1290). The first evidence of the impact of the tax indicated that approximately 60% of the tax was passed through to consumers through increased prices (Cawley, *et al*., 2020a, p.2). The study reported a marginal reduction in the volume of sugar-sweetened beverages purchased per shopping trip in Oakland, coupled with a slight increase in purchases at retail outlets located outside the city, where the tax had not been introduced. The authors found no significant changes in overall consumption of sugar-sweetened beverages among either adults or children following the implementation of the tax.

Powell and Leider (2021) studied the impact of the tax on sugar-sweetened beverages of 1.75 cents per ounce in Seattle, Washington, implemented in January 2018. Using store scanner data two years post-implementation, the findings indicated that prices of taxed beverages rose by 1.04 cents per ounce, reflecting a pass-through rate of 59%. The authors found that the volume of taxed beverages sold decreased by 22%, with reductions more pronounced for family-sized

packages (single items bigger than 1 litre or multipacks of any size) compared to individual-sized items of one litre or less. The pass-through rate of 59% represented an average increase in the price of taxed beverages of 20% (Powell & Leider, 2020, p.7).

The findings from studies conducted in various cities in the United States of America suggested that the impact of a tax on sugar-sweetened beverages is not uniform across the cities. The fact that the tax rate in Philadelphia is higher (1.5 cent per ounce instead of 1 cent per ounce as in Berkeley and Oakland) and almost fully passed through to the consumers, might be a reason why consumption of sugary beverages declined more significantly. Seattle's higher per-ounce tax rate possibly resulted in the higher price increase of 20%. It is noteworthy that in both studies from Philadelphia and Oakland, the effect of the tax on children's consumption was limited. Although the tax design in Oakland is similar to that in Berkeley, Cawley, *et al*. (2020a, p.13) argued that Oakland differs substantially in terms of population size and demographic composition, being both larger and more racially diverse. These differences may partly explain the variation in the effectiveness of tax on sugar-sweetened beverages on consumer consumption.

On 1 January 2014, the government of Mexico introduced a tax on drinks with added sugar of 1 Mexican Peso per litre (Aguilar, Gutierrez & Seira, 2021, p.2). Restrepo and Cantor (2020) reported that the tax in Mexico on sugar-sweetened beverages had small and insignificant effects on adolescents' total daily calorie intake, total daily sugar consumption, and blood glucose levels. This finding produced results similar to those of the study of Aguilar, Gutierrez and Seira (2021, p.16), who observed no statistically significant decrease in the consumption of total calories, using scanner data of 8 130 households in Mexico. The authors recommended that the tax base should be broadened if the government aims to reduce caloric intake.

In May 2017 the Parliament of Catalonia in Spain enacted a tax on sugar-sweetened beverages of 8 Euro cents per litre for products with five to eight grams of sugar per 100ml and 12 Euro cents per litre for products with more than eight grams per 100ml (Castello & Casasnovas, 2019, p.3). According to the authors, the legislation mandated that the full tax burden would be transferred to consumers, resulting in retail price increases of over 20% for sugar-sweetened beverages for 2 litre containers and approximately 5-10% for cans. The study indicated that purchases of sugar-sweetened beverages decreased by 7.7% across the region, with the reduction being more pronounced in higher-income areas.

A Soft Drinks Industry Levy of 18 pence per litre on drinks with between 5g and 8g of total sugars per 100ml and 24 pence per litre on drinks with 8g or more of total sugars per 100ml was levied in the United Kingdom in April 2018 (HM Revenue and Customs, Online, 2018). Tsakos (2025) concluded that the Soft Drinks Industry Levy had been effective in curbing sugar consumption, contributing to improved health outcomes and declining health disparities. The author also found that the tiered tax design of the Soft Drinks Industry Levy encouraged product reformulation.

2.3.6 Studies involving children

A study by Guelinckx, *et al*. (2015) in 13 countries amongst children and adolescents found frequent consumption of caloric fluids including sugar-sweetened beverages and juices. Brindis and Moore (2014, p.344) stated that adolescents are at a stage of life during which they adopt habit-forming behaviours than can have long-term health implications. As confirmed by Cawley, *et al*. (2020a, p.15) limited studies exist that examine the effect of a tax on sugar-sweetened beverages on children's beverage consumption. According to Cawley, *et al*. (2020a), the study in Oakland, California was only the second study to examine the implication of tax on sugar-sweetened beverages on children's beverage consumption, thus confirming the need for research dealing with children.

2.3.7 Income levels and education

Sarda, *et al*. (2022, p.3243) noted that participants with higher income levels and higher levels of education were more likely to support the French tax on soft drinks.

Allcott, Lockwood and Taubinsky (2019, p.15) reported that individuals earning lower incomes tend to have limited nutritional knowledge and are more likely to report that they consume more sugar-sweetened beverages than they think are appropriate. As discussed above, Sarda, *et al*. (2022, p.3243) noted that participants in France with higher income and education levels were more likely to support the tax on soft drinks.

In Spain, Castello and Casasnovas (2019, p.3) concluded that the reduction of sugar-sweetened beverage purchases was more pronounced in higher-income areas. This contrasts with Allcott, Lockwood and Taubinsky (2019, p.15) who found that consumption of sugar-sweetened beverages among people earning lower incomes reduced substantially more than consumption among people earning higher incomes.

A longitudinal analysis by Sánchez-Romero, *et al*. (2020) in Mexico found that the decrease in consumption of sugar-sweetened beverages was more significant among participants with secondary school education and higher compared to those with elementary school education or less.

It was found that taxes on sugar-sweetened beverages are regressive in relation to lower income households due to their higher consumption (Allcott, Lockwood & Taubinsky, 2019, p.8).

2.4 THE RESEARCH QUESTIONS ADDRESSED IN THE STUDY

Based on the analysis set out above, the following factors were identified to form the basis for the research questions in the present study:

- the question whether the Levy was introduced for health reasons or a revenue stream for government, which may have an impact on support for the Levy, trust in the government and, consequently a change in consumption behaviour;
- equity and ethical considerations, which may predict support for the Levy and a resulting change in consumption behaviour;
- public support for the Levy and a possible increase in the rate of the Levy;
- the documented and conflicting impact of sugar taxes on consumption behaviour, and therefore the effectiveness of taxes on sugar-sweetened beverages;
- the limited number of studies involving children; and
- the effect of income levels and education on consumption behaviour.

The limited number of studies carried out in South Africa, and the limited number of studies dealing with children that probe the effect of these factors formed the rationale for the research question: "Is the Levy a 'good' tax that is likely be successful in its aim to reduce the intake of sugar, specifically in children?"

The research question was translated into the main goal of the research: "to investigate the fairness and effectiveness of the Levy, in the context of its likely success in reducing the intake of sugar, specifically by children."

The main goal of the research was addressed by the following sub-goals:

- determine whether the Levy adheres to the principles of a "good" tax system;
- compare the Levy to similar taxes in selected countries to assess its fairness and effectiveness;

- determine parents' awareness of the Levy and its purpose, and whether the Levy will induce parents to change their behaviour regarding providing their children with sugary beverages;
- interpret the results of the study in terms of the principles of a "good" tax and the *Health Belief Model of Behavior Change*; and
- based on the findings of the research, make recommendations regarding changes to the Levy and the rate at which it is imposed.

The factors identified above were also tested in the questions included in the research instruments.

In addressing the second sub-goal of the research, the Levy was compared to sugar taxes levied in Belgium, France, the United Kingdom and Mexico with the aim to uncover commonalities and differences, as well as the motivation for any legislative changes, to assess whether the Levy imposed in South Africa is a fair and effective tax.

The reason for selecting these countries was based on five design considerations and policy goals underlying the tax:

- sugar content or volume;
- flat rate or graduated scale;
- to which beverages it applies;
- whether levied on sugar content or other sweeteners; and
- earmarking the revenue for health purposes.

Belgium: from 2016, an excise tax applied on the manufacture, importation or acquisition from other countries at 6.81Euro cents per litre on a range of beverages containing sugar, including aerated water and beverages using other sweeteners.

France: from 2012 a tax was levied at 7,16 Euro cents per litre on all beverages with added sugar or other sweeteners, and imposed on manufacturers, processers and importers. In 2018 this was changed to a graduated scale and legislation ensured that the tax revenue was earmarked for the healthcare system.

The United Kingdom (the UK): from 2017 a tiered tax was imposed, based on the sugar content of a beverage at 18 pence per litre on beverages with a total sugar content of more than five grams per 100ml, but less than eight grams per 100ml, and 24 pence per litre on beverages with a total sugar content of eight grams or more per 100ml. The tax is payable by manufacturers

and importers. Although it was undertaken that the tax revenue would be earmarked, this was not done.

Mexico: from 2017, a volumetric tax was introduced on sugar sweetened beverages at one Mexican Peso per litre. The funds are earmarked to provide drinking fountains in public places and schools, and to fight obesity and diabetes through the National health System.

South Africa: a graduated tax was introduced based on the sugar content of beverages at 2.21 cents per gram of sugar, with a threshold of four grams per 100ml, and imposed on manufacturers and importers. No earmarking of the funds applies.

As taxes on sugar-sweetened beverages have applied in these countries for a considerable period, the experience in the countries will provide a suitable basis to assess the impact of the taxes.

2.5 THEORETICAL UNDERPINNING OF THE RESEARCH

To address the goals of the research, two theories were adopted. The first theory is the principles of a good tax system as articulated by Adam Smith (1776) and expanded on by various authors, which is discussed in Chapter Four. This theory informed questions included in the research instruments and was applied in interpreting the results of the analysis of the data. The second theory is the *Health Belief Model of Behavior Change* (Alyafei & Easton-Carr, 2024, pp.1-7). This theory assisted to explain the behaviour of participants in the study, to develop questions in the research instruments and was applied in interpreting the results of the analysis of the data.

The *Health Belief Model of Behavior Change*, although created in the 1950s, continues to be used, with amendments, up to the present date (Alyafei & Easton-Carr, 2024, pp.1-7). The model emphasises how individuals interpret health threats and make decisions based on the importance they assign to a specific goal and their belief in the effectiveness of actions taken to achieve that goal (Alyafei & Easton-carr, 2024, p.1). This framework involves six constructs (Alyafei & Easton-Carr, 2024, p.2): perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy, and cues to action. Consumers' perceptions of the severity of the impact of high sugar consumption and the benefits of reducing consumption would clearly influence the behaviour of the participants in this study. Changes in behaviour may experience barriers due to the price of alternative sugar-free products, which may also

affect consumers' capacity to achieve a reduction in consumption, while the lack of cues in the form of information may limit behavioural change.

2.6 CONCLUSION

From a review of the literature, factors were identified that affect the consumption of sugar-sweetened beverages and the success of taxes applying on these beverages. These factors formed the basis of the research question and the main goal and sub-goals of study. These factors were also reflected in the questions included in the research instruments.

The rationale for the selection of the countries, Belgium, France, the UK and Mexico, was described, based on the differences in the manner in which the tax on sugar-sweetened beverages is imposed and the use to which the tax revenue is put. This provided a suitable basis for the discussion and comparison with the South African Levy in Chapter Five.

Two theories underpinned the research and contributed to the development of the questions included in the research instruments. The first theory was the principles of a "good" tax system, which contributed questions included in the research instruments and assisted to interpret the results. This theory is discussed in detail in Chapter Four. The second theory is the *Health Belief Model of Behavior Change*, which was briefly explained in this chapter, and which was used to explain the behaviour of participants in the study, to develop questions in the research instruments and to interpret the results of the analysis of the data.

The next chapter explains the research methodology adopted for the study.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter discusses the research methodology adopted for the study. A general description of research paradigms is presented, as well as the appropriate research paradigm for this study. The research paradigm, together with the associated ontology, epistemology, and methodology, is explained and the reasons are provided for their adoption in the present study. Recognised research methodologies are analysed and the most suitable research methodology for this study is selected and justified. The research design is explained, and specific reference is made to the ethical aspects of the study. Criteria and steps to ensure validity and reliability are discussed.

3.2 RESEARCH PARADIGMS

Research is a coordinated, methodical, and rational process of inquiry, answering questions using empirical data (Punch, 2014, p.5). The highly influential American philosopher, Thomas Kuhn (1970, p.viii), defined the term "paradigms" as "… universally recognized scientific achievements that for a time provide model problems and solutions to a community of practitioners". A research paradigm is a philosophical structure that advises how scientific research should be performed (Collis & Hussey, 2021, p.39). A paradigm refers to a system of essential beliefs and assumptions that deal with basic standards and knowledge development (Guba & Lincoln, 1994, p.107; Saunders, Lewis, & Thornhill, 2019, p.130). The authors of both studies agreed that a paradigm depicts a viewpoint that describes the essence of the world, where a person fits in this world, and the scope of potential connections to that world and sections of the world.

3.2.1 Three questions relating to paradigms

Guba and Lincoln (1994, p.107) referred to three questions, namely the ontological question, the epistemological question, and the methodological question as the focus point of the different paradigms. These three questions encompass the essential morals, assumptions, standards, and ethics of a specific paradigm (Kivunja & Kuyini, 2017, p.27). Hitchcock and Hughes (1995, p.21) explained that ontological assumptions will lead to epistemological assumptions. The authors continued to explain that, in turn, this will have an influence on the methodological decisions needed to adopt a relevant data collection method.

3.2.1.1 Ontology of a paradigm

Ontological assumptions define what reality consists of, and therefore it is necessary for researchers to take a stance regarding their viewpoints on how things are and how things work (Scotland, 2012, p.9). Kivunja and Kuyini (2017, p.27) believed that this allows the researcher to probe his or her moral structure and philosophical outlook, examine the essence of being, reality and existence. The authors continued that, for the researcher to understand how the data collected will add value, the philosophical outlook of the researcher about the essence of what is real will be important. The authors submitted that this would assist the researcher to align the thought process with the significance of the research problem and the relevant approach needed to answer the research question.

3.2.1.2 Epistemology of a paradigm

Kivunja and Kuyini (2017, p.27) explained that the Greek word "episteme" is used to describe knowledge. The authors argued that, for research purposes, epistemology means how people come to be informed about something; how people know what is real and true. Epistemology describes the various ways in which people establish and confirm what is known about the universe and themselves (Bless, Higson-Smith & Sithole, 2013, p.391). Epistemology is focused on determining the extent of a discipline's acceptable knowledge (Bryman, *et al*., 2014, p.12).

Therefore, to comprehend a paradigm's epistemology, Kivunja and Kuyini (2017, p.27) believed that the crucial question to ask is: How do you know what you know? This question forms the foundation of exploring truth. The authors stated that the significance of epistemology lies in the confidence the researcher will have in his or her data and will influence how the researcher will approach the task of discovering knowledge in the relevant research field.

3.2.1.3 Methodology of a paradigm

Kivunja and Kuyini (2017, p.28) explained that paradigmatic viewpoints and beliefs have a considerable effect on methodological decisions. The authors believed that methodology expresses the rationale and course of the methodical series of actions followed in performing a research study to gain an understanding of a research problem. The authors stated that methodology includes assumptions and limitations of the research study and how the researcher will address these limitations. The authors also viewed the ultimate goal when deciding on the appropriate methodology for the study as determining how the researcher will gather the

necessary data, information and understanding to answer the research question and contribute to knowledge.

Ontological and epistemological assumptions will have a direct influence on methodological issues, as different assumptions will determine the different research methods to be used in the study (Cohen, Manion & Morrison, 2018, p.6). It follows that the important methodological concerns are therefore the concept, how it should be measured and the recognition of underlying themes (Burrel & Morgan, 1979, p.3).

The present study adopts a post-positivist paradigm, and the reasons for this are discussed below.

3.2.2 Research paradigm adopted for this study

The positivist paradigm is grounded in the realist philosophy of Plato, who believed that knowledge had to be definite, comprehensive, and unchangeable (Shand, 1933, cited in Turyahikayo, 2021, p.211). To produce this type of knowledge, systematic, well-reasoned and methodological procedures should be followed by the researcher (Turyahikayo, 2021, p.211). This paradigm assumes that unbiased records can be provided of the world and asserts that it is science's role to establish definitions and interpretations constructed as universal laws (Punch, 2014, p.17). Morris (2006, p.3) argued that positivism proposes that, outside of individual experience, an objective reality is present that has unchangeable and provable principles and procedures. The positivist worldview believes that it is crucial and possible for the researcher to maintain a detached, impartial attitude; the results will therefore not be affected by ethics and other prejudices and complex aspects (Guba, 1990, p.20).

Researchers battled with the realisation that many of the positivist approaches could not be implemented in situations where people are involved and became aware that natural science and social science cannot be investigated in identical ways (Kivunja & Kuyini, 2017, p.32). Educational researchers reacted to the limitations of the positivist paradigm to fulfil the requirements for research in the social world, as they argued that the positivist paradigm roots itself in empirical and observable analytical facts (Panhwar, Ansari & Shah, 2017, p.253). When it became clear that positivist assumptions needed to be relaxed to accommodate the social world, this resulted in a spin-off of positivism, referred to as post-positivism (Kivunja & Kuyini, 2017, p.32). Post-positivism accepts that reality is not perfect, it cannot be completely comprehended, and truth is not certain, but likely and possible to estimate (Kivunja & Kuyini,

2017, p.32; De Vos, *et al*., 2011, p.7). Researchers in the post-positivist paradigm concentrate on finding and formulating reliable and valid information relating to the presence of phenomena, instead of generalisation (Maree, 2014, p.65).

According to Rehman and Alharthi (2016, p.53) the ontological stance of researchers adopting the post-positivist paradigm is that of critical realism. The authors state that critical realism believes what is real is not dependent on the researcher and due to the intricacy of social phenomena, reality cannot be perfectly understood. The authors stated that critical realism also acknowledges that the morals and ethics of the researcher can influence what is being investigated. Several approaches can be undertaken and a separation between the researcher and what is being researched is impossible (Iofrida, *et al*., 2018, p.468). The ontological stance for the present study is that the findings of the study cannot represent a universal truth but are conditioned by the social context in which the viewpoints of the participants are investigated.

The epistemological stance of researchers adopting a post-positivist paradigm is "modified objectivism". Modified objectivism means that the absence of bias continues to be a "regulatory ideal" (Guba & Lincoln, 1994, p.111). An extensive description of reality is impossible due to the definite impact of contexts (Iofrida, *et al*., 2018, p.468). In the present study, it can be argued that reality does exist, but it can only be known incompletely or partially. This belief illustrates the ontological position of critical realism within the post-positivist paradigm. The researcher cannot be an independent observer but strives for objectivity. For the present study, the researcher will attempt to approach the research objectively and with detachment, but accepts that this can only be imperfectly achieved, as the design of the research and the interpretation of the findings may be influenced by the personal beliefs of the researcher. This epistemological position of "modified objectivism" is also appropriate within the post-positivist paradigm.

Wildemuth (1993, p.450) contended that the methodological stance of researchers adopting a post-positivist paradigm is methodological pluralism. The author was of the opinion that this stance is rooted in the belief that the research method to be employed should be chosen based on the research question being asked. Post-positivist researchers apply multiple methods to acquire as much as possible of reality (Denzin & Lincoln, 2011, p.8). Fischer (1998, p.16) suggested that both qualitative and quantitative research methods can be involved.

Informed by the post-positivist paradigm of methodological pluralism, the present study adopts a mixed methods approach to capture as much of reality as possible.

3.3 RESEARCH METHODOLOGY

Kivunja and Kuyini (2017, p.36 - 38) explained that the choice of a paradigm for a research study implies that the research will be embedded in the assumptions of the paradigm, and these assumptions will guide the researcher towards a relevant methodology. The authors stated that the relationship between the research paradigm and the research methodology is therefore significant because the chosen paradigm's methodological assumptions will infiltrate research questions, sample selection, as well as data collection and analysis.

According to Maree (2014, p.263), there are three acknowledged research approaches: quantitative, qualitative, and mixed methods. Each of these three approaches has its own goals, methods to carry out the investigation, procedures to collect and analyse the data, and standards to assess quality.

Quantitative research is defined as a unique approach to research where numerical data is gathered. It considers the connection between theory and research as deductive, generally adopts a natural science approach and maintains that social reality is an objectivist concept (Bryman, *et al*., 2014, p.31). Bless, Higson-Smith and Sithole (2013, p.58) argued that certain types of information cannot be documented sufficiently when applying a quantitative research method. The authors clarified that in many instances communication and linguistic processes (therefore a qualitative approach) contribute to a more delicate and purposeful way to record the experiences of individuals. The authors suggested that these could consist of interviews being recorded, focus groups being conducted, written responses to open-ended questions in a questionnaire, diary entries, stories, letters, observer notes, and so on. According to the authors, research conducted using this type of data is qualitative research.

Creswell (2009, p.2) explained that research adopting a mixed methods approach combines both quantitative as well as qualitative research methods and argued that the impact of a research study adopting the mixed method approach will be wider than either a quantitative or a qualitative study. Anderson and Poole (2009, p.27) agreed that mixed methods research strengthens the theoretical implications of research findings. It is also an ideal approach to research problems where multiple perspectives may be able to provide a more detailed understanding than that of a single perspective (Halcomb & Hickman, 2015, p.42). Johnson and Onwuegbuzie (2004, p.14 - 15) emphasised that the purpose of the mixed method approach is not to adopt either the quantitative or the qualitative research approach, but to maximise the strengths and minimise the weaknesses of these two approaches. Furthermore, a quantitative

research approach will contribute towards the breadth of the investigation as the researcher will collect data on various elements of a phenomenon from various research participants, and a qualitative research approach will contribute towards the depth of the investigation, as the researcher can acquire deeper insight into the phenomenon using linguistic processes (Dawadi, 2021, p.27 – 28).

Gamlen and McIntyre (2018, p.5) concluded that mixed method research approaches are well suited to social science research studies adopting a post-positivist paradigm, because the focus of post-positivism is to explain and describe, stimulate the need for both information on general patterns of social action provided by quantitative research methods, as well as the explanation and understanding of what these social actions mean, made possible by qualitative research methods.

The goal of the present research was to investigate the fairness and effectiveness of the Levy, in the context of its likely success in reducing the intake of sugar, specifically by children. This was to be achieved by using a mixed methods approach. This mixed methods approach provided comprehensive descriptions of the relevant social phenomena. The post-positivist paradigm accepts a measure of subjectivity and, as a result, uses both quantitative as well as qualitative research methods (Dawadi, Shrestha & Giri, 2021, p.26). The adoption of the post-positivist paradigm and its associated assumptions in the present study therefore supports the mixed methods approach. As explained below, the research followed a sequential mixed-methods approach.

3.4 RESEARCH DESIGN

A well-planned research design provides the framework for conducting the research to produce reliable and valid data (Bryman, *et al*., 2014, p.100). The present research involved the administration of questionnaires, as well as interviews, and was designed to determine the participants' knowledge and perceptions of the Levy, and whether there was a change in their behaviour regarding theirs and their children's consumption of sugary beverages before and after the implementation of the Levy.

The different aspects of the research design are discussed in the following subsections.

3.4.1 Theoretical basis for research

The Levy, as with any tax, can only be effective if it is fair and perceived to be fair (Carter Report, 1966, p.17). Thus, the research sought to evaluate its fairness and effectiveness in the

context of its likely success in reducing the intake of sugar, specifically by children. The principles of fairness and effectiveness and the application in relation to the Levy, is discussed in Chapter Four in terms of Adam Smith's (1776) four principles of a "good" tax system, as added to by the authors referred to in the chapter.

The *Health Belief Model of Behavior Change*, which will be applied in interpreting the results of the quantitative and qualitative analyses of the data and will contribute to developing questions for the questionnaire, is discussed in Chapter Eight. The constructs on which this model is based – perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy and cues to action – aptly describe the reasons why the Levy is likely or unlikely to be successful in changing consumers' behaviour.

The Health Belief Model of Behavior Change has been applied across a wide range of research areas (Alyafei & Easton-carr, 2024, p.1). In chronic disease prevention, it has been used to understand behaviours related to diabetes, cardiovascular disease, and cancer screening (Alyafei & Easton-carr, 2024, p.4). The authors report that the model has provided insights into factors influencing acceptance of human papillomavirus, COVID-19 and influenza vaccines. Screening programs have also drawn on the *Health Belief Model of Behavior Change* to study participation in mammography, cervical cancer, and tuberculosis screening. The authors argue that, in the area of substance use and cessation, the model has guided research on smoking cessation and alcohol use. Finally, health promotion campaigns have applied the *Health Belief Model of Behavior Change* principles to encourage seatbelt use, improve oral health, and enhance disaster preparedness (Alyafei & Easton-carr, 2024, p.4-5).

3.4.2 Scope of the research

Babbie (2011, p.119) referred to the population for a research study as the group (usually consisting of humans) about whom the researcher aims to draw conclusions. The population for the present study consisted of parents of children in public schools in Bloemfontein, Mangaung, in the Free State Province of South Africa. Ninety-two out of the total 175 public schools in Mangaung, or 53%, are in Bloemfontein (National Department of Basic Education, 2019), and it is proposed that this provides a valid sample for the present study, as it covers more than half of the public schools in Mangaung. Although the population is not representative of all schools in the country, it is still broadly representative for the following reasons:

1. Children attending schools in Mangaung come from low, middle- and high-income families.
2. It is assumed that the sugar intake of children in Mangaung is very similar to that of children across South Africa.
3. Sugar-sweetened beverages are as readily available in Mangaung as they are elsewhere in South Africa.

3.4.3 Sample size

To obtain a sample of completed questionnaires from parents of pupils, a random sample of 10 schools was drawn, and stratified random sampling (Bless, Higson-Smith & Sithole, 2013, p.168) was used to divide the population into two strata, namely Phase (primary or secondary) and Area (rural or urban). The interval sampling method was then used to select a sample within each stratum. The randomly selected sample of 10 schools was considered appropriate as it included both primary and secondary schools, as well as both urban and rural areas in Mangaung. A snowball sampling method (Bless, Higson-Smith & Sithole, 2013, p.176) was used to identify respondents in the schools selected to whom the questionnaire was administered (refer to the explanation below of the snowball sampling method applied in the study).

This was followed by semi-structured interviews to probe questionnaire responses more deeply. The proposed sample size for the semi-structured interviews was between 10 and 20, and a volunteer sampling method was used to select the sample (De Vos, *et al*., 2011, p.394). Parents who agreed to participate in the questionnaire phase were asked whether they would be willing to participate in the interviews.

3.4.4 The research method

To develop the research question, a comprehensive literature review was carried out to gain an in-depth understanding of the background to the introduction of the Levy and the global impact of taxation on sugar-sweetened beverages. Sources of literature included publications by the World Health Organization, publications and guidelines by the National Department of Health, discussion papers and legislation published by National Treasury, minutes of meetings of the Standing Committee on Finance, and academic publications.

The research was conducted in two phases:

The first phase addressed the first two sub-goals of the research, which were to determine whether the Levy adheres to the principles of a good tax system and to compare the Levy to similar taxes in selected countries. For the first phase of the research a qualitative methodology was adopted, involving an analysis of taxes applying in the selected countries, in the context of the principles of a good tax system.

The method applied to address the first sub-goal in the first phase was a critical analysis of the Levy in relation to the theoretical framework of the principles of a good tax. This was achieved by carrying out a literature review of the principles of good tax policy and evaluating the Levy against these principles. The sources of the literature included:

- Adam Smith's Canons of a Good Tax System in The *Wealth of Nations* (1776), and subsequent additions to the principles established in this work;
- tax policy concept statements issued by the American Institute of Certified Public Accountants tax division; and
- academic publications sourced primarily through the Central University of Technology's library databases.

The research method adopted for the second sub-goal of the first phase was a critical comparative analysis of the Levy and similar taxes or levies imposed in the selected countries, and the effectiveness of these taxes or levies in achieving their objectives. The sources of the data were:

- legislation in the selected countries imposing sugar taxes that are similar to the South African Levy;
- publications and guidelines by Revenue Authorities of the selected countries dealing with the taxes on sugar-sweetened beverages; and
- other academic publications sourced primarily through the Central University of Technology's library databases.

The first phase of the research therefore adopted a purely qualitative approach.

In the second phase of the research, the third sub-goal was addressed using a sequential mixed-methods approach, as described by Bless, Higson-Smith and Sithole (2013, p.16), where both a quantitative research methodology and a qualitative research methodology were applied. This phase of the research involved a questionnaire administered to parents of learners in the selected sample of schools. This was followed by semi-structured interviews with parents.

Electronic, as well as manual questionnaires, were used as a research tool to interrogate parents' attitudes regarding sugary beverages and whether their attitudes had changed as a result of the introduction of the Levy. The questionnaire contained closed-ended questions and a limited number of open-ended questions. The closed-ended questions were analysed statistically, thus the quantitative aspect of the research. The open-ended questions, which dealt with participants' perceptions whether the Levy is a "good" tax, were analysed thematically, thus part of the qualitative aspect of the research.

Semi-structured interviews were used as a research tool as part of the qualitative research approach to probe the questionnaire responses in more depth. In the semi-structured interviews, the researcher used an interview guide with specific questions, and the interviewees had freedom in how they replied to these questions or to offer other comments. Additional questions not forming part of the interview guide might also be asked based on the responses by the interviewees (Bryman, *et al*., 2014, p.225). The semi-structured interviews were conducted online or face-to-face at the participant's place of work or another convenient public place. A selection of questions was formulated to encourage the interviewee to talk about the main topics of interest. During the interview additional follow-up questions were asked. The order of the questions was flexible, and it was not necessary for all the pre-prepared questions to be asked, as the interviewees may have provided the desired information when answering an earlier question (Collis & Hussey, 2021, p.121). Semi-structured interviews were used as a suitable research method to gain an understanding of the ideas or personal concepts of the interviewees as a basis for their beliefs and opinions (Easterby-Smith, *et al*., 2012, p.132).

3.4.5 Data collection process for the questionnaire

The goals of the research, as well as the literature review, the theoretical frameworks and the nature of the target population, guided the formulation of the questions in the questionnaire developed by the researcher (see Appendix E). The questionnaire consisted of two parts. Part A posed questions dealing with the demographics of the participants, and the questions in Part B probed the views of the participants and their responses to the Levy. Closed-ended questions were in the form of the selection of the most appropriate option, yes, no or unsure responses, and responses to Likert scale questions. Included in Part B were open-ended questions dealing with the principles of a "good" tax system. The responses to these questions were thematically analysed (refer to Chapter Six).

The questionnaires were administered to parents of school-going children in ten schools in Mangaung during September and October 2024, which were randomly selected and included both primary and secondary schools, as well as urban and rural areas in Mangaung.

One selected rural primary school indicated that the preferred way of communication with parents was via manually administered forms, and therefore both hard copy and electronic questionnaires were developed for the study. The electronic questionnaire was prepared in *QuestionPro*, and *Microsoft Word* was used for the hard copy of the questionnaire. The questionnaire was pilot tested, and the respondents of the pilot test were required to provide their qualifications (they were all professional people), the time it took to complete the questionnaire, to make recommendations or identify problems, and to provide any other comments. The recommendations and comments were reviewed by the researcher, and where necessary, the questionnaire was amended.

To obtain the email addresses of respondents to invite them to complete the electronic version of the questionnaire, a participant invitation letter was prepared in Google Forms (see Appendix B) and distributed via *WhatsApp* to parents. As consent to approach parents in parent-teacher meetings was refused, it was necessary to use a snowball sampling method to identify respondents to whom the questionnaire could be administered. Maree (2014, p.80) describes snowball sampling as a method where participants initially contacted by the researcher are used to connect the researcher with other potential participants for the study by using their social networks. The first group of parents were known to the researcher and others were then referred to the researcher by mutual contacts.

Willing participants completed the Google Form, providing their email address and submitting the form. The online participant informed consent declaration form (see Appendix C) was then emailed to the respondent, which contained a link to the online questionnaire (see Appendix E). Parents participated voluntarily and the use of an electronic questionnaire ensured that there was no interference by the researcher. For manually administered questionnaires, a hard copy participant informed consent declaration form (see Appendix D) was provided to the respondent. Hard copies of the questionnaires were delivered personally to the headmaster of the rural primary school by the researcher and collected from the headmaster after completion by the parents. The teacher in each class distributed a copy to each pupil, instructing them to take it home for their parents to complete. Parents completed the questionnaire voluntarily and

there was no interference by the researcher, who was not physically present at the time the questionnaires were completed by the parents.

3.4.6 Data collection process for the interviews

To gain a deeper understanding of the perceptions of parents and guardians of the Levy, the research process included interviews with participants. Following the administration of the questionnaire, interviews were conducted with parents who indicated on the questionnaire that they were willing to be interviewed. The questionnaire, as the dominant research tool, provided a strong foundation for the study involving a large number of participants, whereas the data from the interviews expanded on the data from the questionnaires and provided deeper insights into the results (Dawadi, 2021, p.27). The purpose of the open-ended interview questions was to give participants the opportunity to elaborate, give more detailed explanations or motivate experiences regarding aspects of the Levy that cannot be captured in a questionnaire (Babbie, 2011, p.119). The sequence in which the research tools were applied ensured that the qualitative phase would enrich and provide depth to the quantitative phase of the research. Semi-structured interviews were conducted as they offer more flexibility than structured interviews and provide the interviewer with the opportunity to probe motivations and experiences behind the answers, while still having enough structure to ensure efficiency and support objective comparisons between interview data. The goals of the research, the literature review, the theoretical bases of the research, and the responses to the questionnaire informed the nine questions in the interview schedule (see Appendix H).

An invitation to be interviewed was emailed to parents who had indicated on the questionnaire that they were willing to be interviewed and provided their email addresses (see Appendix F). The response was poor. Follow-up emails were sent, after which the researcher was able to obtain interviews with 11 participants. Interview appointments were scheduled with participants via e-mail to which the interview schedule was attached. Six participants indicated that they preferred to use Zoom or Microsoft Teams instead of a face-to-face interview, and five participants indicated that they preferred to be interviewed face-to-face. Of the interviewees who were interviewed face-to-face, one chose to be interviewed at the interviewee's place of work while the other four were willing to be interviewed at the researcher's place of work. All the interviews were conducted personally by the researcher.

The interviews were all conducted in a private setting and the researcher ensured that the interviewees were at ease. The interviews were conducted in English, and where English was

not the first language of an interviewee, the researcher made sure that the interviewee understood the questions by allowing them sufficient time to review the questions. The consent form (see Appendix G) was signed by all interviewees and returned to the interviewer. Interviewees were asked for their permission to record the interview, and permission was granted in all cases. At the end of each interview, the interviewee was asked whether they had any comments or questions to add. Each interviewee was thanked for their willingness to be interviewed.

The researcher transcribed all the interviews and emailed the transcriptions to the interviewees with the request to make alterations to the transcript, where required, and to append their signature to the transcript. The interviewees returned the signed transcriptions unaltered to the researcher.

3.4.7 Analysing the data

The data from the closed-ended questions in the questionnaires were analysed using descriptive statistics and the SAS software program. The analysis included an examination of associations among the response categories. The data derived from the open-ended questions in the questionnaires and the interviews were analysed using thematic analysis to identify emergent themes.

The analysis of the data is explained in detail in Chapters Six and Seven.

3.4.8 Ethical considerations

The ethical approval of Rhodes University was obtained (see Appendix I). All the requirements of the Rhodes University Ethical Standards Committee Human Ethics Protocol were complied with.

Research participants were provided with consent forms (electronically or manually) that explained the nature and purpose of the research, measures taken to protect their anonymity and the confidentiality of their responses, as well as limitations on the use of the data. Those parents willing to participate signed the form (in the case of manual forms) or proceeded to click on the questionnaire (in the case if electronic forms) to provide their consent to being involved as participants in the research.

Parents' participation was voluntary, and there was no interference by the researcher as the researcher was not present at the time when the questionnaires were completed. The semi-

structured interviews were conducted online, or face-to-face at the participant's place of work or another convenient public place. The interviewees were informed of this in the interview consent form. Suitable measures were taken to secure and protect the data.

The risk to the participants was identified as a low-level risk of harm, as parents might have felt embarrassed if their children were still consuming sugary beverages, but this was mitigated by the information relating to anonymity and confidentiality in the consent form.

3.4.9 Ensuring validity and reliability

An assumption in this study was that the responses of participants to the questionnaires and the responses of the interviewees were truthful. A measure of bias might, however, have influenced the responses, as the participants might have given responses that are socially acceptable.

Reliability pertains to the accuracy and precision of the measurement and the absence of differences should independent researchers reproduce the study (Nunan, 1999, p.14). Validity pertains to the degree to which a study measures what the researcher intended it to measure, and the outcomes reflect the phenomena under study (Collis & Hussey, 2021, p.47 - 48).

Different criteria are used to judge the validity and reliability of qualitative research and quantitative research. For qualitative research the criteria used include credibility, transferability, dependability, and confirmability, and for quantitative research the criteria used include internal validity, external validity, reliability, and objectivity (Malakoff, 2012, p.1; Yilmaz, 2013, p.320). Since this study applied a mixed methods approach, all the criteria are discussed below.

Quantitative criteria

The quantitative phase of the research for the study aimed to satisfy the following criteria.

Internal validity

The fundamental question during quantitative research is whether valid conclusions can be drawn from a research study, given the research design and measures used. An appropriate research design is always critical when aiming for high internal validity (Ihantola & Kihn, 2011, p.41 – 42). A research study with high internal validity ensures trustworthiness, and trustworthiness is determined by the validity of the instruments and measurements used in a research study (Malakoff, 2012, p.2). The instrument used in the present study was questionnaires. The validity of the instrument and the measurements incorporated in the

questionnaire were promoted by conducting pilot testing of the questionnaire by independent experts consisting of academically qualified reviewers, individuals with characteristics similar to the target population, and health-sector professionals. The individuals were identified through professional networks and referrals. Based on their feedback, minor modifications were made to improve clarity and usability in the final questionnaire. Using a mixed method approach and collecting data from several sources to confirm the findings (Zohrabi, 2013, p.258) increased the internal validity of the study. Internal validity was further promoted by applying a research instrument that probed a broad range of appropriate questions, based on literature and the theoretical underpinnings of the study. The researcher evaluated the data and reported the findings as honestly and accurately as possible (Zohrabi, 2013, p.259).

External validity

External validity refers to the level to which the sample can be generalised to the larger population. It is imperative that the sampling technique should be analysed by quantitative researchers to ensure trustworthiness of the research study (Malakoff, 2012, p.2). The population for the research was identified as schools in the Mangaung region of the Free State province in South Africa. The ten schools selected for the research were randomly selected (Ihantola & Kihn, 2011, p.43), and a sample of 200 participants were recruited. The external validity of the study is therefore limited as the results are only generalisable to the population selected for the research. The researcher has, however, provided credible reasons why, in general terms, the results could be interpreted to be broadly representative of the responses of parents of learners in all South African schools.

Reliability

Reliability will be achieved if the researcher, or another researcher, repeats the research study and obtains the same results (Collis & Hussey, 2021, p.255). The detailed description of the population, the sampling method and the methodology will enhance the reliability of the findings of the study. Moon (2019, p.103) suggested that triangulation enhances the reliability of research findings. The research process, the instruments and the analysis of the data were described in sufficient detail to ensure that other researchers could repeat the study. The study also adopted a mixed method research approach to triangulate the findings.

Objectivity

Objectivity requires that researchers should separate themselves from their research study so that results rest on the essence of what was studied and not on the principles, ethics and temperament of the researcher (Payne & Payne, 2004, p.153). Objectivity was achieved by the remote administration of the questionnaires. Objectivity was further promoted by the development of clearly phrased and well-constructed questions in the questionnaire, which were also subjected to pilot-testing. Appropriate statistical methods were applied to analyse the questionnaire data, and the results of the research were therefore achieved as objectively as possible.

Qualitative criteria

The study aimed to satisfy the following criteria in the qualitative phase of the study.

Credibility

A study will achieve credibility if the results of the study are true and correct from the viewpoint of the researcher, the participants, and the readers of the study. Data, data analysis and conclusions in the study are checked to establish their accuracy and correctness (Malakoff, 2012, p.1). Triangulation and member checking are two of the most discussed procedures to validate qualitative data (Spencer, *et al*., 2014, p.447). In the study, triangulation of methods was applied to substantiate both qualitative and quantitative research findings. Credibility was also increased by obtaining the agreement of the interview participants with the documented interviews. It became evident, as coding progressed, that the final interviews confirmed the existing thematic structure rather than expanding it.

Transferability

Transferability means that the outcome of one research study can be applied to other settings and contexts (Malakoff, 2012, p.2). Thick descriptions of the site and research participants is vital (Yilmaz, 2013, p.321). This criterion was addressed by providing a detailed description of the study's settings, research participants, the methods used for data collection, and the method used to analyse the data, to enable other researchers to determine whether the design of the study could be applied to their research and achieve the same results (Malakoff, 2012, p.2).

Dependability

Qualitative researchers will satisfy the criterium of dependability when the research process is systematic, properly documented and audited (De Vos, *et al*., 2011, p.420; Collis & Hussey, 2021, p.161). Dependability is ensured in the present research by describing in detail the data collection methods for the study, the analysis of data and interpretation of results. The research questions are clear and align with the design of the research study (Yilmaz, 2013, p.319). The research process was audited by rigorous checking at each stage of the research.

Confirmability

Confirmability is based on the criterium of objectivity and refers to whether the research process has been described thoroughly, and whether it is possible to determine whether the results flow from the data (Collis & Hussey, 2021, p.161). Confirmability is achieved when results from the study reflect the responses of the research participants and are not based on the assumptions and biases of the researcher (Malakoff, 2012, p.4). The detailed description of the research process and the recognition and avoidance of bias on the part of the researcher promote the confirmability of the process and the results of the research.

3.5 CONCLUSION

Chapter Three commenced by discussing three questions, namely the ontological question, the epistemological question, and the methodological question, to identify the appropriate paradigm for the present research. The ontological stance of critical realism, the epistemological stance of modified objectivism, and the methodological pluralism position were identified as the approaches adopted for the research, and these approaches confirm the reason for the adoption of a post-positivist paradigm.

This chapter also analysed the parameters of qualitative, quantitative, and mixed method research approaches and, based on the paradigm adopted for the research, the application of a mixed method approach for the research was substantiated.

The research design chosen for the research that was best suited to achieve the goals of the research was described. To evaluate the Levy's fairness and effectiveness in the context of its likely success in reducing the intake of sugar, specifically by children, the population for the present study consisted of parents of children in public schools in Bloemfontein, Mangaung municipality, in the Free State Province of South Africa. The sample size of 200 administered questionnaires from 10 schools was considered appropriate and a sample size of between 10

and 20 interviewees for the semi-structured interviews to follow the administration of the questionnaires was considered adequate.

The research phases and methodologies applied in each phase of the research, as well as the methods adopted to address each sub-goal were identified. The closed-ended questions in the questionnaire as a quantitative research tool and open-ended questions and semi-structured interviews as a qualitative research tool were also discussed.

The data from the closed-ended questions in the questionnaires were analysed using descriptive statistics and the SAS software program. The data derived from the open-ended questions in the questionnaires and the interviews were analysed using thematic analysis to identify emergent themes.

The ethical considerations were discussed in detail together with the risk to the participants and how it would be mitigated. The risk level of the research was considered low, and this was mitigated by the details provided in the participant consent form.

Finally, validity and reliability criteria for the research were described, and steps taken to promote the validity and reliability were identified.

In the next chapter the principles of a good tax system are described, and the Levy is measured against these principles.

CHAPTER 4

THE LEVY AND THE PRINCIPLES OF A "GOOD" TAX SYSTEM

4.1 INTRODUCTION

The previous chapter described the research methodology adopted for the study. The present chapter addresses the first sub-goal of the research – to determine whether the Levy adheres to the principles of a "good" tax system.

The Levy can only be effective if it is fair and perceived to be fair. Thus, the research sought to evaluate the fairness and potential effectiveness of the Levy and to determine whether the behaviour of parents regarding the intake of free sugars by their school-attending children has changed due to the imposition of the Levy. To judge the fairness and effectiveness of the Levy, the present study applied the four principles of a "good" tax as established by Adam Smith (1776), eight principles formulated by the Association of International Certified Professional Accountants (AICPA, 2017, p.3), and accredited articles by Lombard and Koekemoer (2020).

Research in the field of taxation applies principles and key elements that have been used over time to evaluate a tax system to determine whether it is a good tax system. It is important to understand the principles of good tax policy and the key elements of a tax system before it can be evaluated. This chapter analyses the principles of good tax policy, as well as the key elements of a tax system, and discusses the Levy in detail. The chapter also investigates how the principles of a good tax and the key elements of a tax system should be applied in relation to a sugar tax. Lastly, this chapter compares the principles of a good tax system to the Levy to determine whether it is a good tax policy.

4.2 PRINCIPLES OF A GOOD TAX SYSTEM

Adam Smith (1776) in his work *An Inquiry into the Nature and Causes of the Wealth of Nations,* described four canons of taxation, namely, equity, certainty, convenience, and economy. Mirrlees (2011, p.22) argued that these canons are not complete and suggested that simplicity, neutrality and stability should be included to strengthen the principles for the following reasons:

- to limit the tax system's adverse effects on economic efficiency and welfare;
- a tax system with as low as possible administrative and compliant costs is preferred, all things being equal;

- to promote procedural fairness, fairness toward valid expectations and the avoidance of discrimination;
- to provide a transparent and understandable tax system for taxpayers.

Alley and Bentley (2005) compared the tax principles stated in the Organisation for Economic Co-operation and Development (OECD) analysis of regulations governing e-commerce, and tax principles adopted by the American Institute of Certified Public Accountants (AICPA). The authors concluded that the tax design principles of Adam Smith, although still applicable, are implemented somewhat differently in their modern usage. Alley and Bentley (2005) recommended the following five principles to provide a fundamental understanding and approach to tax design: (1) Equity and fairness, (2) Certainty and simplicity, (3) Efficiency, (4) Neutrality and (5) Effectiveness.

In more recent research, Lombard and Koekemoer (2020) compared more than five distinguished publications where tax principles were discussed and to be comprehensive, recommended the following tax principles: (1) Equity, (2) Simplicity, (3) Efficiency, (4) Fairness, (5) Transparency and Accountability, (6) Certainty and (7) Low Administrative Costs.

Based on these publications, the following principles were adopted for the present research, discussed in this chapter, and used to evaluate the Levy:

(a) equity and fairness;
(b) certainty and simplicity;
(c) efficiency and low administration costs; and
(d) transparency and accountability.

The aim of the research was to evaluate the fairness and effectiveness of the Levy and to determine whether the behaviour of parents regarding the provision of sugar-sweetened beverages to their children has changed due to the imposition of the Levy. It is submitted that the terms “fairness” and “effectiveness” encapsulate all the above principles. A “fair” tax is equitable, certain and simple, and an “effective” tax is simple, certain, efficient and transparent. Accountability relates to the actions of government and the revenue authorities and therefore the “fairness” of the tax in terms of support for the tax by society.

4.2.1 Equity and fairness

The term "fairness" is often included in the principle of equity, and the two concepts are therefore grouped together. The OECD (2001, p.18) stated that taxation should generate, at the right time, the correct amount of tax. The OECD added that the possibility of tax evasion should be kept to a minimum, and counteracting steps should be in proportion to the related risks. Fairness normally means an equitable distribution of the tax burden from the taxpayer's viewpoint (Carter Report, 1966, p.17). The Carter Commission deemed this to be a tax system's main objective. The Carter Report stated that: "Unless a tax system is generally accepted as fair, the fundamental purpose of taxation is lost". The Asprey Report (1975, p.12) considered that an equitable tax should treat taxpayers in similar circumstances equally, also known as horizontal equity. The Asprey Report continued that an equitable tax should be allocated fairly between taxpayers in different circumstances, also known as vertical equity. The Asprey Report also stated that throughout history the use of progressive taxation addressed the requirement of vertical equity. For the principle of horizontal equity to be meaningful, important differences should be established, as well as reasons why these differences support a different tax treatment (Bird & Wilkie, 2012, p.11). The dilemma with applying horizontal equity in practice is defining similar taxpayers, and this concept has been referred to differently in different countries (Mirrlees, 2011, p.34). Alley and Bentley (2005, p.602) believed that, apart from horizontal and vertical equity, the principle of fairness and equity also requires inter-nation equity to be considered. The authors stated that inter-nation equity depends upon mutual negotiations between countries, often under the guidance of structures agreed to by global organisations.

Apart from horizontal, vertical, and inter-nation equity, Mirrlees (2011, p.33) postulated that a fair tax system is not merely a matter of redistribution, and equally important requirements are fairness of procedure and fairness regarding legitimate expectations. The author stated that the chances that a tax system will be respected and accepted by society are better when the process of determining tax policy is considered fair. The author also considered the process to be significant, not only because it can influence the outcome, but it can also influence how society perceives and complies with the outcome. The author viewed the desired effect of a fair process as one in which even those who carry the tax burden would accept the outcome as reasonable. Mirrlees (2011, p.33) linked this to fairness regarding legitimate expectations. The author stated that taxpayers might regard changes in tax that inflict unforeseen losses compared to

past expectations as “unfair”. However, according to the author, these implications can be difficult to prevent and must be considered against possible long-term benefits.

A fair and equitable tax system is achieved by progressive tax where taxpayers with a greater ability to pay bear higher tax burdens (AICPA, 2017, p.7; Alley & Bentley, 2005, p.601). Consumption taxes, however, including the tax on sugary drinks, are regressive in nature as the tax burdens lower-income individuals disproportionately (Studdert, Flanders & Mello, 2015, p.4).

4.2.2 Certainty and simplicity

“The tax rules should be clear and simple to understand so that taxpayers can anticipate the tax consequences in advance of a transaction, including knowing when, where and how the tax is to be accounted [for]” (OECD, 2001, p.18). All taxpayers should always be able to interpret tax legislation in the same way (ACCA, 2011, p.6). A study by Carr, Davies, and Davies (2018) concluded that simplicity, equity or fairness and transparency are the most vital principles to be applied when tax policy is developed and implemented.

There is almost universal agreement that for a tax system to be good it must be simple, resulting in increased transparency and low administrative costs; however, the complex nature of the world makes a truly simple system highly unlikely (Mirrlees, 2011, p.42). As the degree of certainty of tax rules increases, the simplicity of compliance and administration usually decreases (Alley & Bentley, 2005, p.599). Although there is a conflict between these two principles, they are grouped together for the purpose of this study as they are closely related. Certainty and simplicity are the most strongly supported principles of a tax system, yet it is most difficult to achieve both principles in a tax system, and therefore some jurisdictions advocate for tax rules to be certain, while others advocate for tax compliance to be simple (Alley & Bentley, 2005, p.598). Due to the challenge for tax rules to be simple, to increase certainty, a commendable goal is to use simple language when drafting tax policy as well as prompt and clear administrative instructions (AICPA, 2017, p.7). Alley and Bentley (2005, p.598) argued that new or changed tax rules would, however, initially appear to be complex and could lead to differing interpretations. The authors believed that, if simple language is used and easily accessible guidance is provided, the rules will become certain as they are interpreted and implemented over time.

The AICPA (2017, p. 8) confirmed that another reason why certainty and simplicity are essential principles is that they aid the understanding of tax rules, resulting in an improvement in tax compliance, and leading to increased respect society will have for the tax system. The AICPA stated that the more complex tax rules are, the more mistakes are to be expected, which will lead to disrespect for the tax system as well as increased non-compliance.

Tax avoidance is also an important matter to consider when discussing certainty and simplicity. A considerable degree of the increase in complex tax legislation and administration is attributable to an increase in anti-avoidance rules implemented by tax authorities (ACCA, 2011, p.6). An issue arises where the fairness principle is considered. A simple tax system is likely to be perceived as an unfair one, as it will be harder to distinguish between the circumstances of different taxpayers (ACCA, 2020, p.7). In the absence of simplicity tax avoidance might arise. To mitigate this, complex anti-avoidance rules will be necessary to close avoidance gaps, creating conflict between tax authorities and taxpayers (Mirrlees, 2011, p.42). ACCA (2020, p.7) argued that eliminating the underlying ambiguities in the original legislation should keep complex anti-avoidance measures at a minimum. Mirrlees (2011, p.42) also argued that reduced avoidance activities would reduce the total economic cost of taxation and any drive towards increased complexity should be defended with substantial evidence. ACCA (2020, p.4) stated that, although the major area where complexity causes problems is during the implementation stage of tax policy, the problems often originate when there is a lack of clarity during the policy-making stage.

4.2.3 Efficiency and low administration costs

The primary goal of a tax administration system is to collect tax revenue while taxpayers' compliance costs and tax authorities' administrative costs are kept to a minimum (Commonwealth, 2004, pp.1-2; OECD, 2001, p.10). Sandford and Hasseldine (1992 cited in Alley & Bentley, 2005, p.611) described taxpayer compliance cost as the costs taxpayers incur to satisfy the demands required by tax legislation, apart from the actual tax payment. Keeping compliance and administrative costs to a minimum is a major focus of tax authorities as it is believed to aid in increasing tax revenue collection and has the biggest impact on a broader number of taxpayers (Alley & Bentley, 2005, p.596). Tax authorities manage to substantially reduce administrative costs by harnessing the use of technology (Alley & Bentley, 2005, p.612).

When a tax system is in harmony with, and does not restrict, the economic principles and goals of the authority levying the tax, efficiency is enhanced (AICPA, 2017, p.9). An efficient tax system will also enable tax authorities to collect tax due and avoid tax leakage while enabling taxpayers to comply with tax legislation (ACCA, 2011, p.9). To be clear on the intended purpose of the tax is therefore critical to improve tax design and efficiency (Cawley, *et al*., 2019a, p.333). If the goal of the intended tax is to change consumer behaviour, tax will have the greatest effect on behaviour if it is prominent and clearly noticeable to the consumer (Cawley, *et al*., 2019a, p.333). The harm caused by inefficient taxes is too easily underestimated and treading too lightly can be dangerous (Bird & Wilkie, 2012, p.9; Studdert, Flanders & Mello, 2015, p.5).

The more tax rules distort economic behaviour, the less efficient they are in achieving their objectives, resulting in increased compliance and administrative costs (AICPA, 2017, p.9; Alley & Bentley, 2005, p.612; Ruan, 2021, p.511). However, a good tax system will not only limit adverse effects on efficiency but will also improve economic welfare by addressing externalities occurring when a person or business does not consider the implications of their actions on others (Mirrlees, 2011, p.23).

4.2.4 Transparency and accountability

Transparent authorities are accountable for their decisions, statements and actions if these decisions, statements, and actions are accessible to taxpayers to consider and evaluate (Rawlins, 2008, p.7). The principle of transparency therefore serves to achieve accountability and the two are grouped together for the purposes of this study.

A transparent tax system will ensure that taxpayers are able to understand what they are paying, the logic behind tax rules, how and when the tax will be levied, as well as the benefits that will accrue from paying a tax (ACCA, 2011, p.5; AICPA, 2017, p.9). Tax legislation and procedures should be applied transparently and consistently (Davis Tax Committee, 2016, p.14). Transparent tax systems will empower taxpayers to make informed decisions about employment, investment, and consumption as they will be more certain and have more confidence to calculate their tax liabilities correctly (Davis Tax Committee, 2016, p.74). Holtzman (2007, p.418) held the view that the tax system's credibility would be increased as a result of transparency, and Murphy and Baker (2023, p.1) supported this opinion, stating that specialists in the field believe that a transparent tax system will positively contribute towards taxpayers' morale and willingness to pay tax. Transparency will therefore result in increased

tax revenue. Taxpayers will also understand the possibility of penalties being imposed for non-compliance (Holtzman, 2007, p.421).

Rawlins (2008, p.6) stated that the definition of transparency should include three vital elements namely true, relevant, and valuable information; involvement of interest groups to identify required information; and unbiased, sound reporting of actions and policies that hold the system accountable. Rawlins (2008, p.16) concluded that tax authorities would become more trusted as transparency increases.

Schedler, Diamond and Plattner (1999, p.14) argued that the principle of accountability must be broken up into two parts, namely answerability and enforcement, and that the concept of answerability includes both the chance to ask unpleasant questions and the responsibility to answer uncomfortable questions. Schedler, Diamond and Plattner (1999, pp.14-15) explained that two types of questions can be asked: the accountable party can be asked to inform the enquirer about their decision by providing truthful facts, or they can be asked to explain their decisions by providing valid grounds for them. Accountability therefore comprises the right to receive information and an explanation as well as the obligation to provide relevant details and valid reasons to justify one's decisions and actions. Accountability provides the opportunity for communication and debate between parties (Schedler, Diamond & Plattner, 1999, p.15).

Apart from providing information and justification, accountability also includes aspects of enforcement. Inappropriate conduct should be punished, and accountable actors should bear the consequences of their behaviour (Schedler, Diamond & Plattner, 1999, p.15). Accountability will be perceived as ineffective and weak if misconduct is uncovered without consequences being enforced (Schedler, Diamond & Plattner, 1999, pp.15-16).

The lack of transparency in a tax system also raises doubts about a tax system's fairness and damages taxpayers' confidence, which is vital for voluntary compliance with a tax system (Holtzman, 2007, p.426; Mirrlees, 2011, pp.34-35; Murphy & Baker, 2023, p.1). According to the AICPA (2017, p.10), taxpayers require transparency in relation to information, progress, amendment, and the objectives of tax legislation. The AICPA asserted that public awareness and transparency on these matters promotes wider and more well-informed debate and respect for the system. The AICPA also emphasised the importance of evaluating several options before implementing any tax law or making any changes to existing tax law.

ACCA (2011, p.5) raised the concern that proper analysis of draft legislation is often lacking and the consultation stage on draft tax policy is either done inadequately or it is an exercise

mainly done to create an impression of transparency, where in fact the policy has already been determined. ACCA (2011, p.5) further stated that the consultation process of identifying and analysing various options should be transparent with an audit trail and written minutes and responses from stakeholders. According to ACCA, taxes imposed to change consumer behaviour have fallen prey to scepticism as taxpayers are not satisfied that revenues raised have been used to promote the community well-being but are in fact only an additional revenue source. ACCA (2011, p.6) concluded that, for this reason, transparency is critical from the beginning through to the end where expenditure projections are clear and taxpayers can see where the tax revenue is being spent.

Lastly, a transparent and accountable tax system should be adequately and continuously reviewed, making sure that it is up to date, easy to understand and still relevant (ACCA, 2011, p.7). To be able to review and evaluate the tax system, its key goals and purposes should be clear and accessible to stakeholders together with timely and publicly accessible information on tax revenues collected (Murphy & Baker, 2023, p.1).

Having discussed the principles of a good tax system and its application, the design of the Levy is discussed, followed by its evaluation against these principles.

4.3 KEY ELEMENTS OF A TAX SYSTEM

According to Bird and Wilkie (2012, p.27) the questions of Who? What? How? and When? should be addressed to develop and implement tax policy. The following key elements of a tax system are used as guidance in discussing the Levy.

- *Taxable unit*: Identifies who will be held accountable and from whom the tax should be collected (Bird & Wilkie, 2012, p.28).
- *Tax base*: The taxable value must be well defined and clearly identifiable (Bird & Wilkie, 2012, p.28).
- *Tax rate*: The percentage at which the taxpayer is taxed must be stated.
- *Tax period and administrative provisions*: Tax must be collectible within a reasonable time frame, and the scope of tax avoidance should be established and enforced. A clear strategy and adequate resources, together with political will, is imperative to effectively administer tax (Bird & Wilkie, 2012, p.16, 29).

It is unlikely that a tax system will achieve its goals effectively if the key elements are not appropriate and clear (Bird & Wilkie, 2012, p.27).

4.4 KEY ELEMENTS OF THE LEVY

The Levy is legislated in Chapter VB of the Customs and Excise Act, No. 91 of 1964 (Customs and Excise Act), and Part 7 of Schedule 1 thereto, where it is stated that the levy on sugary beverages is currently set at 2.21c/gram of the sugar content that exceeds 4g/100ml. According to the policy paper and proposals for the taxation of sugar-sweetened beverages by National Treasury (2016b, p.2 – 3), sugar-sweetened beverages include:

> …beverages that contain added caloric sweeteners such as sucrose, high-fructose corn syrup (HFCS), or fruit-juice concentrates, which include but are not limited to: (i) soft drinks, (ii) fruit drinks, (iii) sports and energy drinks, (iv) vitamin water drinks, (v) sweetened ice-tea, and (vi) lemonade, among others. Any beverage that only contains sugar naturally built (i.e. intrinsic sugars) into the structure of the ingredients should be excluded from the tax (e.g. unsweetened milk and milk products and 100 per cent fruit juice).

The South African Revenue Service (SARS) (2018a, p.3) stated the following regarding the meaning of the word "sugar" for purposes of the Levy: "Any reference to sugar means both the intrinsic and added sugar and other sweetening matter contained in any sugary beverage." SARS (2018a, pp.3-4) continued as follows regarding the declaration of sugar content:

> Any person who manufactures or imports any sugary beverage that is liable to the HPL [Health Promotion Levy] must determine and declare the sugar content of the sugary beverage based on:
>
> i. The total sugar content g/100ml of the sugary beverage as certified on a valid test report obtained and retained from a testing laboratory accredited with and using methodology recognised by the South African National Accreditation System or the International Laboratory Accreditation Cooperation; and
> ii. The report referred to in item (i) above must be kept available for inspection for a period of five (5) years from the date the sugary beverage was manufactured or imported and must be produced or submitted at the request of an Excise Officer; or
> iii. The sugar content that is used for the calculation of the Sugary Beverages Levy (SBL) liability is either the actual sugar content of the SBL good as substantiated on an acceptable laboratory test report or the deemed sugar content of 20g/100ml. The declaration of the sugar content in respect of an SBL good with a deemed sugar content must therefore be reflected as 20g/100ml on the DA 179 (See Appendix A). In practice, the system will apply the normal SBL calculation that first subtracts the threshold of 4g/100ml exempt sugar content from the declared sugar content in the calculation of the final SBL liability; and

iv. In the case of powder and liquid concentrates or preparations for the making of beverages, the sugar content shall be determined based on the total volume of the prepared beverage when mixed or diluted according to the manufacturer's product specifications.

The Levy is paid by importers and manufacturers on a "duty at source" basis. A return (the DA 179 return, see Appendix A) must be submitted and paid monthly via E-filing by the manufacturer (SARS, 2018a, p.4). A manufacturer is a person who manufactures or who is expecting to manufacture sugary beverages with a sugar content of more than 500 kilograms per calendar year (SARS, 2018b, p.12).

The consumers of sugar-sweetened beverages are not exposed to the compliance and administration processes of the Levy; they are merely paying the higher price when buying sugary beverages.

In the next section, the Levy is evaluated against the established principles of a good tax system.

4.5 EVALUATING THE LEVY AGAINST THE PRINCIPLES OF A GOOD TAX SYSTEM

The principles of a good tax system as discussed in section 4.2 above are used to evaluate the Levy in the sections that follow. The detailed discussion dealt with principles that are relevant to either the manufacturers and importers of sugar-sweetened beverages, or consumers of the beverages, or both. Although the study itself only addresses the Levy from the perspective of consumers, it is important to determine whether the Levy adheres to all the principles of a "good" tax system.

Table 4.1 below summarises the relevance of aspects of the principles to manufacturers and importers, and consumers.

Table 4.1 Application of the principles of a "good" tax system

Principles of a "good" tax system		Application of the principles	
Principles	**Aspects**	**Manufacturers and importers**	**Consumers**
Equity and fairness	Horizontal equity		Relevant
	Vertical equity		Relevant
Certainty and simplicity	Clear and simple tax rules	Relevant	
	Simple language	Relevant	
	Simplicity of compliance	Relevant	
	Clarity during the policy-making stage	Relevant	
Efficiency and low administration costs	Compliance costs kept to a minimum	Relevant	
	Administration costs kept to a minimum	Relevant	
	Addresses externalities	Relevant	
	Understanding what is being paid: the right to receive information and explanations	Relevant	Relevant
Transparency and accountability	Understand the possibility of penalties	Relevant	
	Consultations on the draft policy – involving interest groups	Relevant	Consumers were not consulted
	Earmarking revenue to promote the well-being of the community	Relevant	Relevant

Source: Own formulation

4.5.1 Equity and fairness

The taxation of sugar-sweetened beverages has as its main objective the improvement of public health by reducing consumption of sugary drinks. There is a general concern to ensure that tax policy will result in a fair distribution of opportunities, resources and outcomes across society (Barnhill & King, 2013, p.117). Falbe (2020, p.3) revealed that where opponents of the sugar tax focus on financial reasons for considering the tax to be seen as inequitable, proponents of sugar tax believe that the tax on sugar-sweetened beverages is equitable because the tax emphasises the distribution of social and health benefits. According to the author, the proponents of the tax argue that low-income consumers will receive a greater distribution of health benefits, which promotes equity. Barnhill and King (2013, p.118) supported the ethical justification of a regressive tax such as the tax on sugar-sweetened beverages, and argued that, especially for non-necessary items like sugary drinks, the fact that it is a regressive tax should not be a decisive argument against it. A sugar tax system may therefore have a net benefit for low-income consumers and can be defensible from an equity and fairness perspective. This view was also supported by Véliz, *et al*. (2019).

Concerns were raised regarding the equity and fairness of the levying of a sugar tax, as it hinders the freedom and autonomy of taxpayers (Véliz, *et al*., 2019, p.23). The intervention of government in the marketplace is, however, justified if it rectifies market failures (Cawley, *et al*., 2019a, p.320). The first market failure relating to sugar-sweetened beverages is that individuals are consuming sugar-sweetened beverages without realising the long-term impact of their behaviour on their health, therefore making decisions based on imperfect information (Cawley, 2004, p.120). Shrapnel (2015, p.8190) stated that another market failure authors have referred to is time-inconsistency. Consumers frequently give in to the attraction of instant pleasure at the expense of their long-term best interest (Cawley, 2004, p. 122). The rationale is that time-inconsistent consumers may find the tax beneficial because it will urge them to do what they cannot do without help – to consider the future consequences of their immediate actions (Cawley, 2004, p.122). The third market failure relates to external costs, where individuals do not absorb the full costs of their decision to consume sugar-sweetened beverages, as health costs are broadly distributed across society (Cawley, 2004, p.121; Shrapnel, 2015, p.8191). Kudel, Huang and Ganguly (2018, p.9) found that obese employees contribute to a decline in the productivity of the workforce, which adversely affects the economic growth and health costs of a country.

The principle of fairness is further promoted in a sugar tax system if an incentive exists for manufacturers of sugary drinks to reformulate recipes with the goal to decrease the sugar content in these drinks (Lombard & Koekemoer, 2020, p.68). Reformulation can expand access to lower-sugar, more affordable beverage options, to an extent reducing the regressive impact of the tax on lower-income consumers. Ruan (2021, p.511) argued that the design of a sliding scale tax based on sugar content would provide manufacturers with the incentive to reformulate their recipes and reduce the sugar content of their products, promoting the principle of fairness. The author concluded that product reformulation will not only result in lower taxes but will also promote health.

According to Lombard and Koekemoer (2020, p.68) objections of institutional and individual taxpayers to a sugar tax include the argument that taxing only sugar-sweetened beverages is unfair, given that not all food items containing sugar are taxed. The authors maintained that justification is required for a tax on only a specific category. Mirrlees (2011, p.34) stated that most tax policy proposals will to some extent be perceived as unfair by some persons and suggested that the best solution is to be transparent and honest about the reasoning and evidence supporting the proposed tax policy. The author asserted that transparency regarding the proposed policy's intention and repercussions is key.

When comparing the principles of equity and fairness to the Levy, it can be argued that the Levy will have a net benefit for low-income consumers in achieving its goal of reducing sugar consumption, as low-income consumers often experience higher rates of diet-related diseases (French, *et al.,* 2019, p.1) and can, as a result, be defensible from an equity and fairness point of view from the perspective of consumers. The Levy is presently (December 2025) imposed at a rate of 2.1 cents per gram of sugar content exceeding 4 grams per 100 ml. By implementing a tax rate based on sugar content and applying a tax-free threshold, manufacturers have the incentive to reformulate their products and therefore the Levy appears to be equitable and fair as reformulation can increase access to more affordable beverage options with lower sugar content. Based on the research findings that individuals are consuming sugary beverages without considering the long-term health implications or absorbing the full costs of their sugar consumption, the Levy can be beneficial in influencing consumers to consider the future consequences of their immediate actions. By correcting these market failures, equity and fairness can be defensible from the perspective of the government. Currently, the Levy is only applicable on sugary beverages, excluding unsweetened milk products and 100% fruit juices.

The literature discussed in the present study suggested that taxing only a specific category and not all food items containing sugar is perceived as unfair by some role players.

With reference to the comparison between the principles of equity and fairness and the Levy, it is submitted from an equity and fairness perspective that the Levy is largely compliant with these principles of a good tax system.

4.5.2 Certainty and simplicity

Although tax legislation is never truly simple, SARS (2021, Online) provides a clear explanation and details of the Levy on its website, as well as an email address specifically created for questions and assistance regarding the Levy. According to SARS (2021, Online), the language of the tax is simple and straightforward to understand, which promotes the principles of certainty and simplicity. It is clear from the information provided by SARS and the legislation that manufacturers and importers of sugary drinks are liable for the tax, promoting the principle of certainty concerning the taxable unit. As discussed earlier, the Levy is not applicable to 100% fruit juices and unsweetened milk products. Taxing only a specific beverage category and not all food items containing sugar can therefore complicate the tax base. The Levy does not use a flat rate based on volume, which is recommended for simplicity and certainty purposes, but it is levied at a rate per gram of sugar with a tax-free threshold. As will be seen from literature discussed in the present study, this method of levying the tax is seen as the most complex option. Dahms (2017, p.92) was concerned that the tax base of the Levy might cause problems as it could be difficult to calculate the tax liability for each sugar-sweetened beverage brand according to their sugar content and volume. The levy is self-assessed monthly using an excise return and paid to SARS via e-filing. Technology and current existing infrastructure are used, which promotes simplicity and certainty. The principles of certainty and simplicity are not relevant from the perspective of consumers, as they will only pay the higher price of the sugar-sweetened beverages.

Based on the comparison between the principles of certainty and simplicity and the Levy, it can be argued that the Levy is partly compliant with the certainty and simplicity principles of a good tax system.

4.5.3 Efficiency and low administration costs

The Levy uses e-filing through the existing excise infrastructure, which assists in minimising compliance and administration costs.

Research by Francis, Marron, and Rueben (2016) concluded that tax based on the amount of added sugar content in a drink reduces sugar consumption more effectively than tax based on the volume of a sugary drink. The authors also maintained that revenue is raised more efficiently using broad-based volume or sales taxes on all soft drinks. The goal of the tax should be clear, and in the case of a good sugar tax system with the goal to reduce sugar consumption, tax based on the amount of added sugar will therefore promote efficiency. According to National Treasury (2016b, p.2) the stated intention of the Levy was to assist in reducing the intake of excessive sugar, especially among children, and therefore tax based on the amount of added sugar promotes efficiency.

It is submitted, based on literature discussed in the present study, that to change consumer behaviour, the tax should be prominent to be efficient and effectively change consumer behaviour, and therefore sugar tax should be passed through to the consumer so that the tax burden is reflected in the price that consumers pay. Studdert, Flanders, and Mello (2015, p.5) warned, however, that initiatives like a soft drink size limit, low sugar tax and calorie labels are inadequate to change the behaviour of consumers and can be recast as arbitrariness.

A study done in South Africa by Saxena, *et al*. (2019) recommended a 10% - 20% tax on sugar-sweetened beverages, for the tax to be prominent enough and efficiently reduce consumption. This recommendation was supported by National Treasury (2016b, p.3), stating that literature suggests a 20% price increase on sugar-sweetened beverages is required to have the desired effect on the public health. Although the Levy is passed through to the customer, research done by Karim, Kruger and Hofman (2020, p.2) indicated that the Levy of 2.1 cents per gram of the sugar content exceeding 4 grams per 100 ml amounts to a price increase of about 11%. Stacey, *et al*. (2019, p.5) indicated the Levy has a pass-through rate of about 70%, which means that the price increases due to the Levy passed through to the consumer will only be about 7.7% which is lower than the recommended rate of 10% - 20% to change consumer behaviour.

It is submitted that leakage should be avoided in an efficient tax system. According to Lombard and Koekemoer (2020, p.69) leakage in a sugar tax system can be caused by substitution. It can, however, be argued that efficiency will not be compromised should consumers substitute sugary drinks subjected to tax with healthier options such as milk or fruit juice that is exempted from tax, as this will be in line with the intended goal of a sugar tax. Broadening the tax base to also tax other food items which are nutrient-free and energy dense, would also prevent

consumers from substituting one taxed item with another non-taxed item, and will thus avoid leakage.

An efficient tax system should avoid distortions of economic behaviour. If the goal of a sugar tax system is to change consumer behaviour, it might, however, distort economic behaviour should the goal be achieved, as fewer sugary drinks will be purchased, and therefore the demand to produce sugary drinks will also decrease. However, a sugar tax will address externalities, for example the pressure on the health care system due to increased occurrences of non-communicable diseases. Changed behaviour regarding the consumption of sugary drinks is likely to decrease costs to society in terms of health care expenses and increase job productivity. The wider impact of sugar tax on the economy should not, therefore, compromise the principle of efficiency.

Although the Levy uses existing infrastructure, which promotes low administration costs, and the Levy is based on added sugar content, which promotes efficiency, the pass-through rate of 7.7% is too low to make a meaningful impact on consumer behaviour. By taxing only a specific category of beverage, consumers might be encouraged to substitute a taxed item with another nutrient-free non-taxed item, which will compromise the principle of efficiency. The Levy is not earmarked for health care initiatives which further compromises the principle of efficiency as it will negatively influence consumers' support for the Levy.

It can therefore be argued that the Levy is mostly not compliant with the principle of efficiency.

4.5.4 Transparency and accountability

A transparent and accountable sugar tax system should provide all its stakeholders with true, relevant, and useful information, as well as valid grounds for the proposed tax policy. The background, rationale, design options and recommendations of a sugar tax system were provided to stakeholders in a policy paper by the National Treasury (2016b). To promote transparency and accountability, a consultation process including all stakeholders should be implemented and documented. An extensive consultation process was undertaken by National Treasury (2017a). Stakeholders' responses were documented and considered and changes to the proposed policy were made (National Treasury, 2017a). There is, however, no evidence that consumers formed part of the consultation process.

A transparent and accountable sugar tax system should be reviewed continuously to ensure that the sugar tax policy is up to date and still relevant. In the 2022 Budget, the Minister of Finance

announced an increase in the Levy to 2.31 cents per gram of sugar for sugar-sweetened beverages exceeding 4 grams of sugar per 100 ml. The increase was to be effective from 1 April 2022 but was postponed. The Minister of Finance also announced that consultations will be initiated to consider lowering the threshold of 4 grams as well as broadening the tax base of the Levy to include fruit juices (National Treasury, 2022b, p.1). In the 2023 Budget, however, the Minister of Finance announced that the Levy will remain unchanged for the next two fiscal years (National Treasury, 2023, p.15). Although no changes were introduced, it is clear that the Levy was reviewed.

Transparency and accountability are vital, with clear expenditure budgets, and taxpayers should be able to see where the tax revenue is being spent. Revenue raised by the Levy is not earmarked for health initiatives and there is no transparency or accountability regarding where the money is being spent.

It appears that the Levy is only partially compliant with the principles of transparency and accountability.

4.6 CONCLUSION

In this chapter, the principles of good tax policy as well as the key elements of a tax system were analysed. The principles of a good tax system were compared to the Levy to determine whether it represents a good tax policy. This chapter compared the principles of equity and fairness to the Levy and found that the Levy can be defensible from an equity and fairness point of view from the perspective of consumers. Although the Levy is regressive, reduced sugar consumption will result in a net health benefit for low-income consumers. The comparison found the Levy to be equitable and fair from the perspective of manufacturers because the Levy applies a tax rate based on added sugar content and uses a tax-free threshold to encourage manufacturers to reformulate their beverages. Based on the research findings in this chapter, it was also found that equity and fairness can be defensible from the perspective of the government as imposing the Levy will correct market failures. Based on evidence, this chapter argued that it might be perceived as unfair to tax only a certain group of beverages and not all food items containing sugar. It was therefore submitted that the Levy is largely compliant with the principles of a good tax system with reference to equity and fairness.

This chapter established that the workings of the Levy are explained clearly and in simple language on the SARS website and that additional assistance is available via a custom-created email address. It was concluded that the use of technology and current existing infrastructure

to pay the Levy promotes certainty and simplicity. It was found that the taxable unit can be determined with certainty, but the tax base is complicated as the Levy uses a rate per gram of added sugar with a tax-free threshold and only taxes a specific beverage category. Based on these findings, it appears that the Levy is partly compliant with a good tax system regarding certainty and simplicity. A trade-off between principles is, however, often necessary to arrive at optimal tax policy when principles are contradictory in nature (Mirrlees, 2011, p.35; Lombard & Koekemoer, 2020, p.63). It appears that there will be a trade-off between simplicity and fairness and efficiency regarding the complex tax base and the purpose of the Levy.

This chapter argued that the Levy promotes the principle of low administration costs by using existing infrastructure and established that efficiency is promoted by imposing the tax based on added sugar content. The analysis in this chapter indicated that the pass-through rate is too low to make an impact on consumers' behaviour regarding sugar consumption, and efficiency is further compromised by the possibility of substituting a taxed beverage with another non-taxed energy dense food item. This chapter argued that efficiency is also compromised by the fact that the revenue received from the Levy is not earmarked for the promotion of public health but applied to the general budget. It was concluded that the Levy is to a large degree not compliant with the principles of a good tax system regarding efficiency.

This chapter found that true, relevant, and useful information as well as valid grounds for the proposed tax policy was provided, which promotes the principles of transparency and accountability. It was also established that a consultation process was implemented and documented regarding the Levy, and the Levy is being reviewed continuously to ensure it is up to date and relevant. However, as the revenue raised by the Levy is not earmarked for health initiatives, there is no transparency regarding where the money is being spent. From a transparency and accountability perspective the Levy is therefore only partially compliant with the principles of a good tax system.

With reference to the purpose of the research, the focus is on the consumer of sugar-sweetened beverages. It appears that consumers might perceive that the Levy is not a good tax policy as the tax revenue is not earmarked to combat non-communicable diseases. It can further be argued that the current rate of the Levy paid by consumers is not sufficient to change consumer behaviour.

In the next chapter, the Levy is compared to similar taxes in selected countries.

CHAPTER 5

AN INVESTIGATION OF TAXES ON SUGARY BEVERAGES IN SELECTED COUNTRIES

5.1 INTRODUCTION

In this chapter, the experience in the selected countries with a tax on sugary beverages is investigated with the aim to identify similarities and differences between countries as well as reasons for any changes in legislation. This addresses the second sub-goal of the research, which is to compare the Levy with similar taxes in selected countries, to assess its fairness and effectiveness. The chapter identifies positive and negative aspects of taxes on sugary beverages levied in the selected countries and compares this with the Levy introduced in South Africa, to determine whether the South African Levy is a fair and effective tax. The workings of excise taxes are first discussed and the experiences of selected countries with the implementation of a tax or levy on sugar-sweetened beverages are then investigated. Countries selected for the comparison are Belgium, France, the United Kingdom, and Mexico. The reason for the selection of these countries was provided in Chapter Two.

The WHO (2022, p.1) indicated that, due to the increasing global prevalence of obesity and diet-related non-communicable diseases, the focus has been placed on the effect of the increasing consumption of sugar-sweetened beverages, because these sugary drinks are often a main source of free sugars with little or no nutritional value. According to the WHO *Global Database on the Implementation of Nutrition Action*, as of May 2022, more than 85 countries, at national or subnational levels, have implemented taxes or levies on sugary drinks (WHO, 2022a, p.9). The WHO *Acceleration Plan* to curb obesity (WHO, 2024, p.2) was adopted in 2022 at the *World Health Assembly* by member states and at that stage 31 governments were executing this plan. Amongst others, one of the key interventions of the *Acceleration Plan* is the implementation of pricing and fiscal policies, such as tax on sugary drinks, to reduce consumption.

5.2 EXCISE TAXES

Taxes on sugary beverages are normally in the form of excise taxes. Excise taxes are the oldest form of tax levied in human history (Lotterman, 2018, p.1). In the Netherlands, excise taxes, or *excijsen,* were imposed on beer, spirits, salt, sugar, and other goods as early as the sixteenth century (Cnossen, 2005, p.1). According to Yeomans (2018, p.272) the first occurrence of

excise taxes in England was in 1643 and Dewey (1907, cited in James, 2007, p.51) stated that the United States of America (USA) levied excise taxes from 1791 on tobacco, distilled spirits, snuff, refined sugar, carriages, and property sold at auction. Today, the levy of excise taxes is a common element of tax policy world-wide (Hoffer, 2023, p.1).

As stated in Hoffer (2023, p.1), the purpose of excise taxes is to discourage the production and consumption of certain products that can be harmful to the environment or to human health – from there the name "sin taxes". According to the author, another purpose of excise taxes is to raise revenue for the fiscus. Excise taxes fall under consumption taxes and are imposed on specific products or activities; these taxes have a narrow tax base, and are added on top of other taxes, for example, value-added tax (Hoffer, 2023, p.2).

Different countries use different tax structures to levy excise taxes (Hoffer, 2023, p.2). Excise taxes can be applied per unit (*ad quantum*) or as a percentage of the product's price (*ad valorem*) and can be levied at different stages of the production process (Hoffer, 2023, p.2; Lotterman, 2018, p.1).

According to the WHO (2022, p.59), in recent years there has been an increase in the number of countries adopting excise taxes on sugar-sweetened beverages. The WHO (2022, p.47) pointed out that there are multiple approaches and factors to consider when choosing the suitable design for the tax and stressed that it is of critical importance for a country to choose an adequate tax structure to levy tax on sugary beverages in order to reduce consumption of sugar-sweetened beverages and raise revenue for the government. When the purpose of a tax policy is to promote health, excise taxes are the preferred way to impose the tax (WHO, 2022a, p.62).

5.3 TAXES ON SUGARY BEVERAGES IN SELECTED COUNTRIES

In the subsections that follow, the experience with a tax on sugary beverages in the selected countries is investigated, with the aim to identify similarities and differences between countries, as well as reasons for any changes in legislation.

5.3.1 Belgium

According to the European Commission (2016), Belgium levied an excise duty of 6.81 Euro cents per litre in 2016. The Commission stated that it was levied on waters, including mineral waters and aerated waters containing added sugar, or other sweetening matter, or flavoured, as well as other non-alcoholic beverages. The European Commission indicated that no levy was

imposed on milk-based drinks, soya drinks, fruit juices and vegetable juices unfermented and not containing added spirits, whether containing added sugar or other sweetening matter.

The European Commission (2018) indicated that the Belgian rate increased to 11.92 Euro cents per litre in 2018 but remained unchanged at 6.81 Euro cents per litre for flavoured water, including mineral waters and aerated waters without added sugar or other sweetening matter. The European Commission explained that the excise tax liability arises in Belgium at the time of manufacture, when imported into Belgium, or when introduced into Belgium from another member state of the European Union.

Walker (2021) stated that 20% of Belgian residents over the age of 15 years consume at least one sugary drink daily, the highest consumption of sugar-sweetened beverages of all European Union countries. According to Walker, the *Flemish Institute for Healthy Living* is of the opinion that the tax is not high enough to change consumer behaviour and decrease consumption. Walker quoted the Institute as stating that public health experts were not consulted on the implementation of the tax, and the Institute believes that the price increase should be at least 20% to motivate consumers to turn to healthier alternatives. Walker further stressed the Institute's view that the tax revenue from sugar-sweetened beverages should be earmarked to make healthy food more affordable or used for other social initiatives.

A study done in Europe (Azaïs-Braesco, *et al*., 2017) found that the intake of sugar by children in Belgium was 30% more than in adults. The study established that 80.1% of Belgium adults and 94.6% of Belgium children consume more than 15% of total energy intake in the form of total sugars. The WHO recommends that not more than 10% of the total energy intake should come from free sugars (Azaïs-Braesco, *et al*., 2017, p.13). The study also suggested that products containing added sugars should be reformulated by manufacturers to reduce sugar consumption but stressed that it should be designed to target specific food groups that will have a material impact on the sugar consumption of the target population. It is submitted that due to the tax being based on the volume of the beverage, reformulation will not have an effect on the tax liability unless the tax design is changed to tax beverages based on sugar content instead of volume.

Another study done in Europe (Chatelan *et al*., 2022) with 13-year-old and 15-year-old adolescents found that the daily consumption of soda drinks decreased by 7.3% after the implementation of a soda tax in Belgium. The study concluded that no European country that was part of the study experienced a substantial decrease in the frequency of adolescent

consumption of soda drinks after the introduction of a soda tax. The study recommended that taxes on sugar-sweetened beverages should be increased to raise the retail price by more than 20% to substantially reduce adolescent consumption of sugar-sweetened beverages, and health and nutrition programmes should be implemented to support taxes on sugary drinks. The study argued that a tax based on sugar content might reduce sugar consumption by encouraging reformulation by manufacturers of sugar-sweetened beverages. Furthermore, the study also agreed with the *Flemish Institute for Healthy Living* that the revenue raised should be earmarked to subsidise public health or social programmes as well as healthy foods to assist poorer households.

5.3.2 France

In France, tax on sweetened soft drinks at the rate of 7.16 Euro cents per litre was introduced in January 2012. It is levied on all non-alcoholic beverages containing added sugar or sweeteners and paid by manufacturers, processors, and importers (Capacci, *et al*., 2019, p.2-3). Le Bodo, *et al*. (2019, p.9) stated that the revenues raised were not earmarked for health initiatives but applied to the general budget, although the original purpose of the tax was to change behaviour regarding consumption of sugary drinks in the fight against obesity, while raising money for public health insurance. Le Bodo, *et al*. (2019, p.12) voiced the opinion that the tax design (low tax rate, tax base including no-calorie sweetened beverages and no earmarking of the revenue) supported the objective of raising revenue for the fiscus rather than to promote public health.

A study conducted by Capacci, *et al*. (2019) on the French soda tax found that the tax was fully passed through to the consumers of soft drinks and partially passed through to the consumers of fruit juices. The study also established that the decrease in soft drink purchases was very small after the soda tax was put into effect. Another study done in France by Sarda, *et al*. (2022) concluded that the low flat tax rate of 7.16 Euro cents per litre contrasted with the WHO's recommendations of an increase in retail prices of at least 20%, as well as a design based on the sugar content.

The design of the soda tax in France was amended with the aim to encourage reformulation, and from July 2018 a soda tax with a sliding scale based on the added-sugar content was imposed (Le Bodo, 2019, p.12; Sarda, *et al*., 2022, p.3245). According to Légifrance (2024), the updated soda tax is levied on beverages as well as liquid preparations for beverages that contain added sugars. Certain infant formulae and toddler milks, enteral nutrition products and

certain soya-based beverages are excluded from this tax. Légifrance reported that the tax starts at 3 Euro cents per litre for beverages containing less than or equal to 1 gram of added sugar per 100 ml and increases to 23.5 Euro cents per litre for beverages containing less than or equal to 15 grams of added sugar per 100 ml. Above 15 grams per 100 ml of the beverage, the rate per additional gram is 2 Euro cents per litre of the beverage. Légifrance also stated that a tax is levied on beverages and liquid preparations for beverages containing synthetic sweeteners at 3 Euro cents per litre of beverage. The tax is payable by the manufacturer or importer of the beverage and paid to the customs authorities. The amended design was incorporated into the 2018 Social Security Finance Bill, which is used to fund the healthcare system of France, while the general Finance Bill was used for the 2012 version of the tax (Sarda, *et al*., 2022, p.3241).

The earmarking of revenue received from the soda tax in France contributed greatly to the increased acceptance of the tax by the French people. The study done by Sarda, *et al*. (2022) on the public perception of the tax on sweetened beverages in France found that 76.4% of the participants supported the soda tax when tax revenue was intended to be ploughed back into the healthcare system of France.

Allais, *et al*. (2023, p.1098) estimated that the sugar content of fruit-flavoured still drinks reduced by 15%, carbonated soft drinks by 14% and iced tea by 17% in France in 2018 after the enactment of the amended soda tax.

Two aspects contribute to the success of the soda tax in France. Firstly, tax revenues are being used for health initiatives rather than for the general budget, and secondly, the true purpose of the tax was clearly communicated to the public (Sarda, *et al*., 2022, p.3249).

5.3.3 United Kingdom

Her Majesty's Revenue and Customs (HM Revenue and Customs) (2016, Online) reported that the Soft Drinks Industry Levy was introduced in the Finance Bill, 2017, and rolled out from April 2018 with the aim to assist government in their fight against childhood obesity by removing added sugar from soft drinks. HM Revenue and Customs confirmed that manufacturers of added sugar soft drinks are encouraged by the levy to reformulate their products and reduce portion sizes of drinks with added sugar. The United Kingdom (UK) government indicated that the revenue will be earmarked for the provision of physical education and sport at schools, and breakfast clubs in England (House of Commons, 2017, p.6).

HM Revenue and Customs (2018, Online) explained that the Soft Drinks Industry Levy is a tiered tax set at 18 pence per litre on drinks that have a total sugar content of 5g or more and less than 8g per 100ml and 24 pence per litre on drinks that have a total sugar content of 8g or more per 100ml. Further, HM Revenue and Customs (2018, Online) explained that a drink would be subject to the Soft Drinks Levy if it met the following conditions:

- it has had sugar added during production, or anything (other than fruit juice, vegetable juice and milk) that contains sugar, such as honey;
- it contains at least 5 grams (g) of sugar per 100 millilitres (ml) in its ready to drink or diluted form;
- it's either ready to drink, or to be drunk, it must be diluted with water, mixed with crushed ice or processed to make crushed ice, mixed with carbon dioxide, or a combination of these;
- it's bottled, canned or otherwise packaged so it's ready to drink or be diluted; and
- it has a content of 1.2% alcohol by volume (ABV) or less; and
- you'll also need to pay the levy if the drink is a 'flavour concentrate'.

HM Revenue and Customs (2018, Online) indicated that the levy does not apply to drinks that are:

- at least 75% milk;
- a milk substitute, like soya or almond milk;
- an alcohol replacement, like de-alcoholised beer or wine;
- made with fruit juice or vegetable juice and do not have any other added sugar;
- liquid drink flavouring that's added to food or drinks like coffee or cocktails;
- sold as a powder;
- prepared by mixing liquids and served in an open container, like cocktails;
- infant formula, follow on formula or baby foods; and
- formulated food intended as a total diet replacement, or dietary food used for special medical purposes.

The levy is payable by UK manufacturers and importers of soft drinks. Manufacturers producing less than one million litres in a twelve-month period do not need to register for the levy (HM Revenue and Customs, 2018: Online).

Rogers, *et al*. (2023a) investigated whether the implementation of the Soft Drinks Industry Levy influenced the frequency of hospital admissions in England for tooth extractions due to cavities in children over a period of 22 months after implementation of the levy. The authors

found that the Soft Drinks Industry Levy was associated with a decrease of 12.1% in hospital admissions of children up to the age of 18 for tooth extractions due to cavities.

A study in the UK by Scarborough, *et al*. (2020) measured the effect of the announcement in 2016, and implementation in 2018, of the Soft Drinks Industry Levy on soft drinks available for purchase and concluded that the percentage of soft drinks containing added sugar of more than 5g per 100ml decreased by 34% during a five-year period. The authors established that the pass-through rate of the levy to the retail price of high sugar drinks was about 33.3%. Hashem, He and MacGregor (2019) concluded that the implementation of the Soft Drinks Industry Levy is effective based on the significant decrease in sugar content on labels of carbonated sugary soft drinks in the UK. Research done by Rogers, *et al*. (2023b) in primary schools in England suggested that the implementation of the Soft Drinks Industry Level contributed to a reduction in the prevalence of obesity in girls between the age of 10 and 11.

Although research indicates that the Soft Drinks Industry Levy has a positive effect on the sugar content of soft drinks and can be associated with improved health conditions, frustration prevails over the use of revenue received from the levy. According to Hayley (2022), the UK government broke the promise to utilise the revenue received from the Soft Drinks Industry Levy for the fight against obesity in children and is instead using it for the general budget. Hayley stated that the Department for Education, previously responsible for administering substantial proportions of the revenue, declared that it is no longer utilised for any specific programmes or departmental spending. The author stated that Rob Wilson, former Minister for civil society, believed that this would have a detrimental effect on the public's trust in the government and that it would be exceptionally difficult to convince the public in the future that taxes such as the levy would be applied for the promotion of public health. The author reported further that Gavin Partington, Director-General of the British Soft Drinks Association, believed that the implementation of the Soft Drinks Industry Levy might possibly have been a political gesture instead of a policy based on evidence.

5.3.4 Mexico

Mexico has the highest prevalence of adult obesity and diabetes mellitus among the OECD member countries, while it is also the country with the highest consumption of soft drinks in the world (Pan American Health Organisation, 2015, pp.12-15).

According to the Pan American Health Organisation (2015, p.18) a sugar tax of 1 Mexican peso per litre, resulting in a 10% price increase, was implemented on 1 January 2014 to curb the prevalence of obesity and diabetes and includes the following:

> Flavoured beverages, concentrates, powders, syrups, flavour essences or extracts that, upon dilution, yield flavoured beverages; as well as syrups or concentrates used to prepare flavoured beverages that are dispensed into open containers using automatic, electric, or mechanical equipment, whenever the goods to which this paragraph refers contain any type of added sugars.

Exempt from this tax are pure juices and milk with no added sugars, and beverages with artificial sweeteners. The Pan American Health Organisation (2015, p.62) stated that the revenue collected from this tax is earmarked to install drinking fountains in public places and schools and to fight obesity and diabetes through the National Health System. The Pan American Health Organisation (2015, p.61) found that the prices of sugary drinks increased by about 1 Mexican peso per litre in 2014 compared with the previous year, which suggests that the tax was fully passed through to the purchase prices of these beverages. This is in line with the study done by Campos-Vázquez and Medina-Cortina (2019) who estimated that the price per litre of soda increased by 1.12 Mexican pesos after the implementation of the sugar tax.

Batis, *et al*. (2023) compared the dietary intake of Mexican residents from 2012 to 2018 before and after the implementation of the sugar tax on sugar-sweetened beverages and non-essential energy dense foods. The authors found that the sugar tax contributed towards a healthier diet despite the low tax. The authors recommended that the tax should be increased to meet the recommendations of the WHO.

A study on the sugar tax in Mexico by Hernández, *et al*. (2023) found that although purchases of sugar-sweetened beverages decreased after the implementation of the sugar tax, the impact was not as big in Mexico as the impact of similar taxes or levies in other countries. The authors recommended that a tax reform with higher tax rates based on sugar content to encourage reformulation of sugary drinks by manufacturers would be more effective. Colchero, *et al*. (2017, p.570) stated that purchases of taxed beverages in Mexico decreased on average by 7.6% in the first two years after the tax was put into effect.

5.4 COMPARISON BETWEEN SELECTED COUNTRIES

An investigation into the experiences of sugar-sweetened beverages in the selected countries found that they all levy a tax rate lower than what is recommended by the WHO.

Belgium and Mexico use a tax design based on the volume of sugar-sweetened beverages. Studies in these countries after the implementation of the tax suggested a need for tax reform, where beverages are taxed based on added sugar content rather than volume as this would encourage reformulation and result in lower sugar consumption. The soda tax in France was initially also based on the volume of the beverages, but it was amended after researchers found that the decrease in purchases of sugar-sweetened beverages was too small. The Soft Drinks Industry Levy in the UK and the Health Promotion Levy in South Africa are designed to tax the added sugar content and apply a tax-free threshold.

The revenue received from the tax in Belgium is not earmarked but researchers suggested that it should be used to subsidise healthy food or utilised for other health initiatives. The initial soda tax in France was not earmarked, but after the amendment to the tax the revenue is used to fund France's healthcare system. Based on research done in France, this earmarking contributed significantly to the French people's acceptance of the tax. In the UK it was indicated that the revenue is earmarked for physical education and sport at schools, as well as breakfast clubs in England, but research established that it is no longer used for these purposes. This raised the concern that this may have a negative effect on the public trust in the UK government. The revenue collected from the tax in Mexico is earmarked to install drinking fountains in schools and public places and for other health initiatives. In South Africa, the Levy is not earmarked for any health initiatives.

5.5 PERSPECTIVE GAINED

The research discussed in this chapter on the experiences of different countries with the implementation of a tax or levy on sugar-sweetened beverages, revealed that although lower sugar tax rates do have a positive impact by reducing purchases of sugar-sweetened beverages and reducing diet-related diseases, the tax rate should increase the purchase price of the sugary beverages by at least 20% to have maximum impact in the fight against non-communicable diseases. The suggested increase in the tax rate aligns with the principle of efficiency as discussed in Chapter Four as research referred to in that chapter indicates that a significant price increase is essential to achieve the intended health objectives. Studies by Azaïs-Braesco, *et al*. (2017) and Chatelan, *et al*. (2022) in Belgium as well as a study done by Hernández, *et al*. (2023) in Mexico, where tax on sugar-sweetened beverages is based on volume and not added sugar content, supported the finding of Francis, Marron, and Rueben (2016) who argued that taxing sugar-sweetened beverages based on sugar content rather than volume is the most

effective tax design if the purpose of the tax policy is to promote public health, as it would encourage manufacturers to reformulate their products to pay less tax, which would result in reduced sugar consumption. The tax design based on sugar content reflects the principles of equity and fairness discussed in Chapter Four as it incentivises manufacturers to reformulate their products, without disproportionately impacting low-income consumers. The amendment to the French soda tax to calculate the tax liability based on the content of added sugar of soft drinks rather than on volume, supports this argument. It was also established that the levying of a sugar tax is best supported by the public if the revenue collected from the tax is earmarked to provide affordable healthy food alternatives or for other health initiatives. This will also support the principle of transparency as discussed in Chapter Four.

When comparing the lessons learned from Belgium, France, the UK and Mexico to the Levy imposed in South Africa, it can be argued that although the South African Levy is based on a more effective tax design as it applies to the amount of added sugar content in a drink rather than based on the volume of a drink, the Levy might not be perceived as effective, due firstly to the fact that the tax rate of 2.21c/gram of the sugar content that exceeds 4g/100ml is too low and, secondly, because the revenue collected from the Levy is not earmarked for health purposes but used for the general budget.

5.6 CONCLUSION

The introduction to this chapter briefly referred to the epidemic proportions of the prevalence of obesity and other diet-related non-communicable diseases around the world, and the effect of the increasing consumption of sugar-sweetened beverages on these diseases. The recommendation of the WHO to implement taxes on sugar-sweetened beverages to curb consumption was also stated. The workings and purpose of excise taxes were investigated, and it was established that if the purpose of tax legislation is to promote health, excise taxes are the preferred way to levy the tax.

The experiences with the implementation of a tax or levy on sugary drinks in Belgium, France, the United Kingdom, and Mexico were investigated, and it was found that the most effective tax rate or levy is one that results in a 20% increase in the purchase price of a sugary drink. It was also established that the tax base of the tax or levy must be comprehensive to prevent the consumption of untaxed unhealthy substitutions. The tax design implemented in the different countries was investigated and it was concluded that the most effective tax design to reduce sugar consumption is a design where the amount of tax is based on the sugar content of the

beverage. The investigation in this chapter on the experience in the selected countries of the tax on sugar-sweetened beverages reflected the unequivocal agreement that a sugar tax is best supported by consumers if the revenue generated from the tax is used for health care programs or to subsidise healthy food alternatives.

In the next chapter, the data collection and analysis for the quantitative research is dealt with.

CHAPTER 6

QUANTITATIVE DATA ANALYSIS

6.1 INTRODUCTION

The goal of the study was to investigate the fairness and effectiveness of the Levy, in the context of its likely success in reducing the intake of sugar, specifically by children.

This chapter, in conjunction with the next chapter, addresses the third sub-goal that forms part of the second phase of the research, which is to investigate parents' awareness of the Levy and its purpose, and whether the Levy will induce parents to change their behaviour regarding providing their children with sugary beverages.

A mixed-method approach was adopted to address the third sub-goal of the research, as discussed in Chapter Three. The mixed method approach involved a questionnaire administered to parents of learners in a selected sample of schools (the quantitative method), open-ended questions in the questionnaire, and semi-structured interviews with those parents willing to be interviewed (the qualitative method). A mixed-method approach that integrates questionnaires and interviews is advantageous because it builds on the strengths of both quantitative and qualitative methods, resulting in more comprehensive and in-depth research findings.

This chapter deals with the analysis and interpretation of the quantitative phase of the study – the closed-ended questions in the questionnaire. The data collection process is explained in Chapter Three.

6.2 ANALYSIS OF THE QUESTIONNAIRE DATA FROM CLOSED-ENDED QUESTIONS

The data from the completed questionnaires were statistically analysed using the SAS software program, version 9.4. As part of the quantitative data collection process the questionnaire link was distributed widely among parents of children enrolled in the 10 selected schools with the objective of obtaining at least 200 completed questionnaires. By the end of the collection period, 172 completed questionnaires were received and were suitable for analysis and 28 were excluded due to being incomplete.

6.2.1 Demographical Information

The analysis of the demographical data yielded the results discussed below.

Gender composition

The respondents consisted mainly of females (83%). This was expected, as mothers are more likely to be involved with their children's dietary habits. Figure 6.1 illustrates the gender composition.

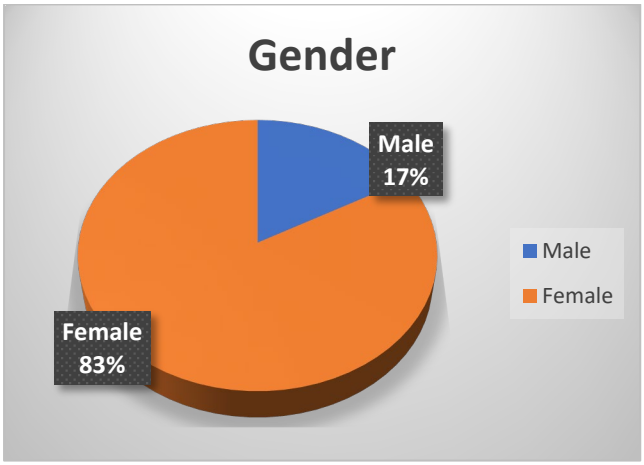

Figure 6.1 Gender composition

Ethnicity

Figure 6.2 indicates that the respondents consisted mainly of White parents (90 respondents, 52%) and Black African parents (73 respondents, 42%). The larger number of White respondents compared to Black respondents, however, does not represent the composition of the South African population and may involve a measure of bias.

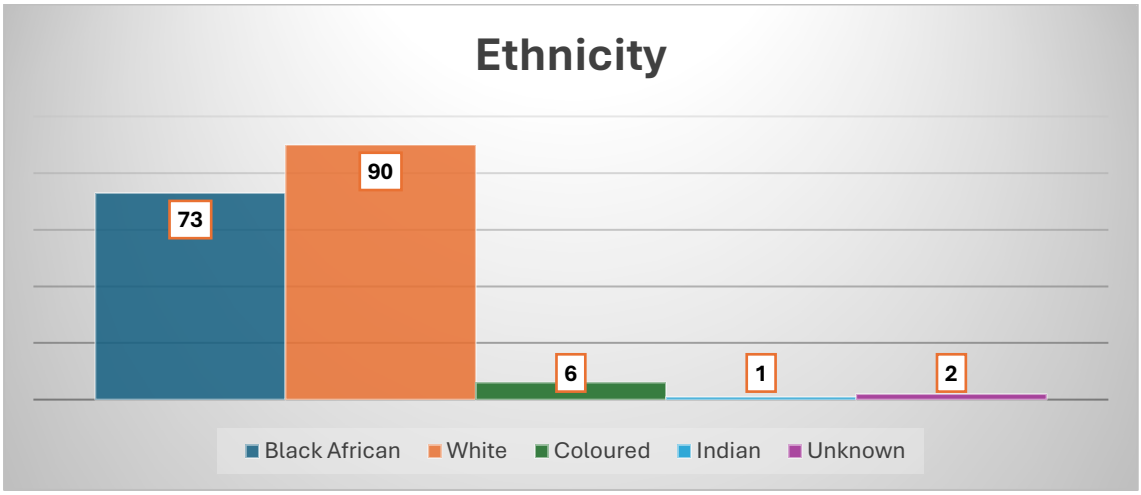

Figure 6.2 Ethnicity composition

Age distribution

Out of the total of 172 respondents, 157 indicated their age. Most of the parents (42.44%) fall within the 41 – 50 years age range, followed by the 31 – 40 years (29.07%). Parents younger than 30 years constitute a small percentage (11.05%). This is in line with the median age of maternal mothers of 28.3 years, indicating that by the time their children are of school-attending age, they will be between 33 – 46 years old (Department: Statistics South Africa, 2024). The youngest respondent was 18 years old, and the oldest respondent was 62 years old. As some of the respondents indicated that they are the grandparent or biological brother or sister of the child or children, this could be expected.

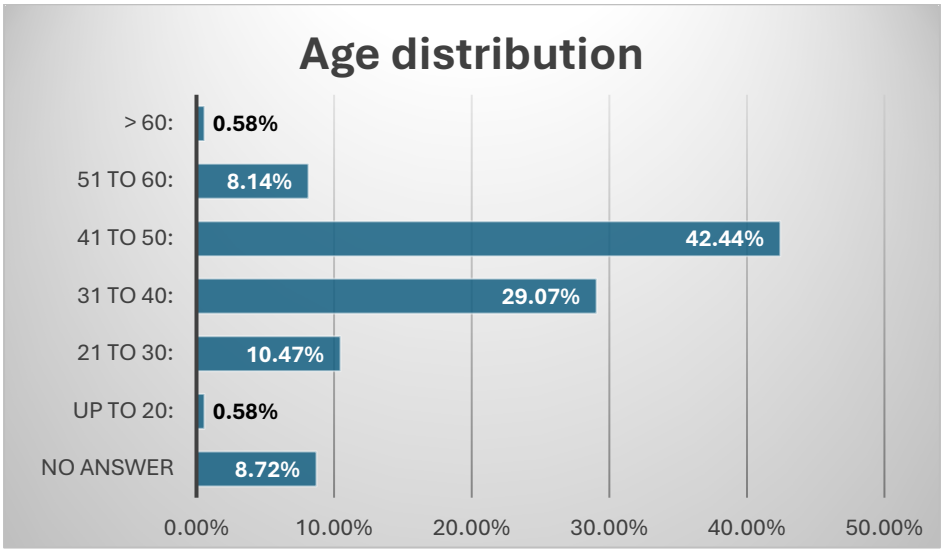

Figure 6.3 Age distribution

Household income

The research and analytics firm, *Eighty20*, categorises a middle-class household as one that earns approximately R25 000 per month (BusinessTech, 2024). About 30% - 35% of the respondents earned below the middle-class income bracket and approximately 41% - 46% earned above the middle-class income bracket. As a large proportion of the respondents earned less than R15 000 a month, this may have an impact on their ability to buy alternative products. The income brackets of the respondents are illustrated in Figure 6.4.

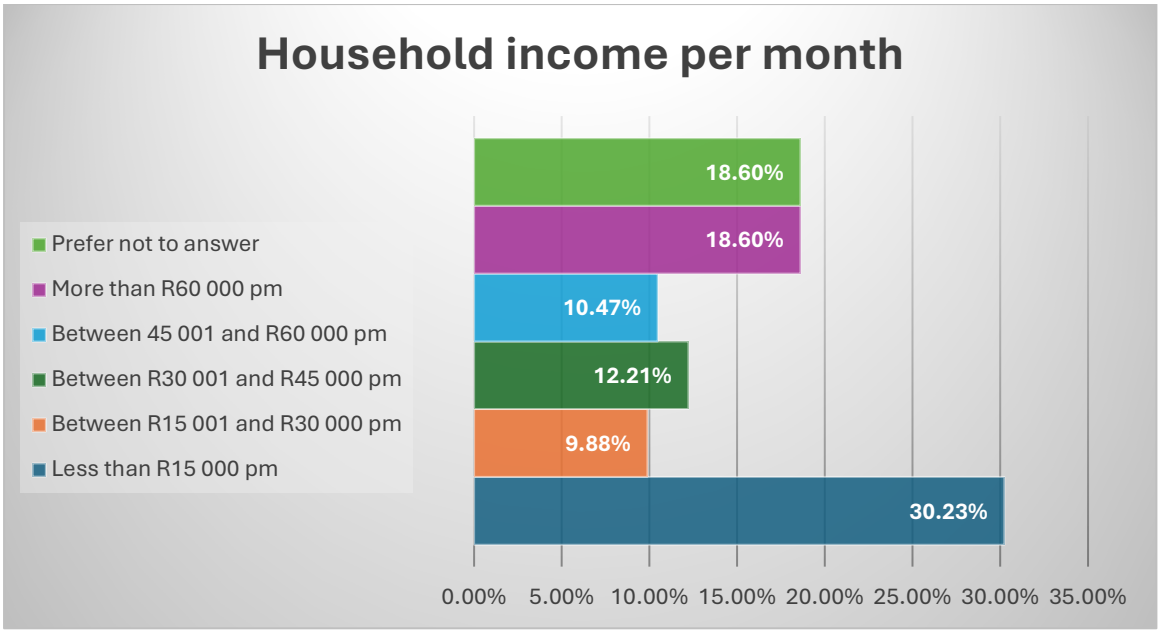

Figure 6.4 Household income per month

Level of education

Most of the respondents (58.72%) obtained a certificate or higher qualification. Of the respondents, 31.98% obtained a postgraduate degree (see Figure 6.5). Only 14.54% of the respondents did not finish high school. Most of the respondents can therefore be considered educated, and more likely to understand the Levy and its purpose.

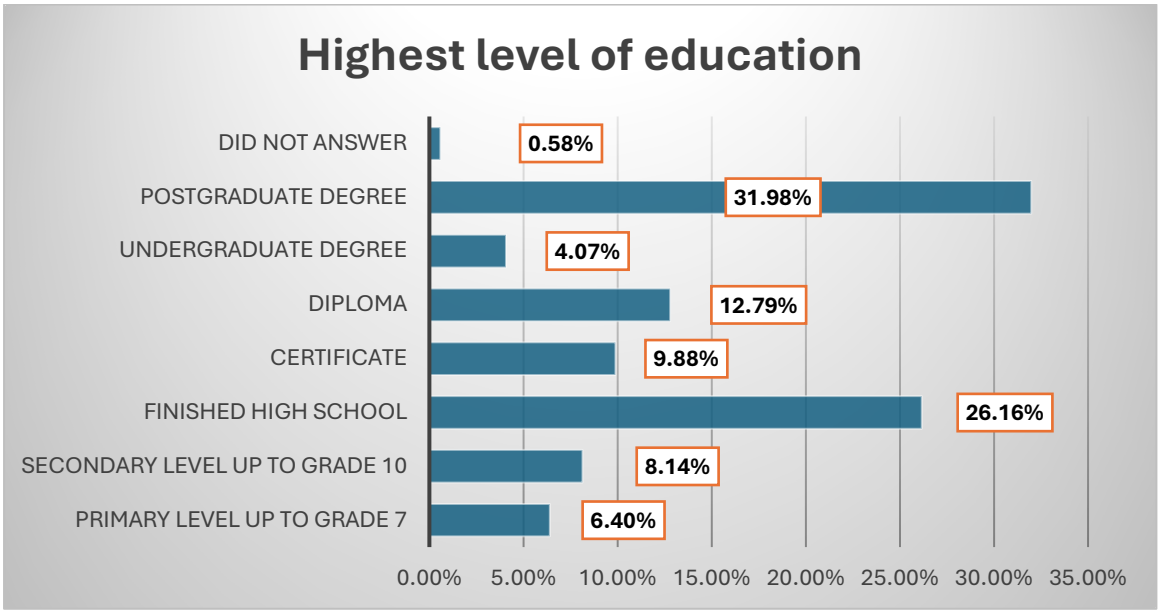

Figure 6.5 Highest level of education

Relationship of the respondent to the child or children

Table 6.1 illustrates the relationship of the respondent to the child or children attending school. The majority (71.51%) of the respondents were the child's or children's biological mother. Relationships such as biological brother, biological sister or cousin were indicated under the option "Other". The predominance of biological mothers in the sample may indicate a greater level of concern with what their children are drinking.

Table 6.1 Relationship of respondent to child/children attending school

RELATIONSHIP TO CHILD/CHILDREN	
Relationship	**Percentage**
Biological mother	71.51%
Biological father	11.63%
Aunt	3.49%
Uncle	1.74%
Grandmother	1.74%
Stepmother	2.33%
Stepfather	1.16%
Legal guardian	0.58%
Other	5.82%

Number of children in the household

The majority (51.16%) of the respondents had two children attending school, whereas only 6.98% had four or more children (see Figure 6.6). Having only one or two children in the family may indicate a greater ability to provide more expensive alternative beverages.

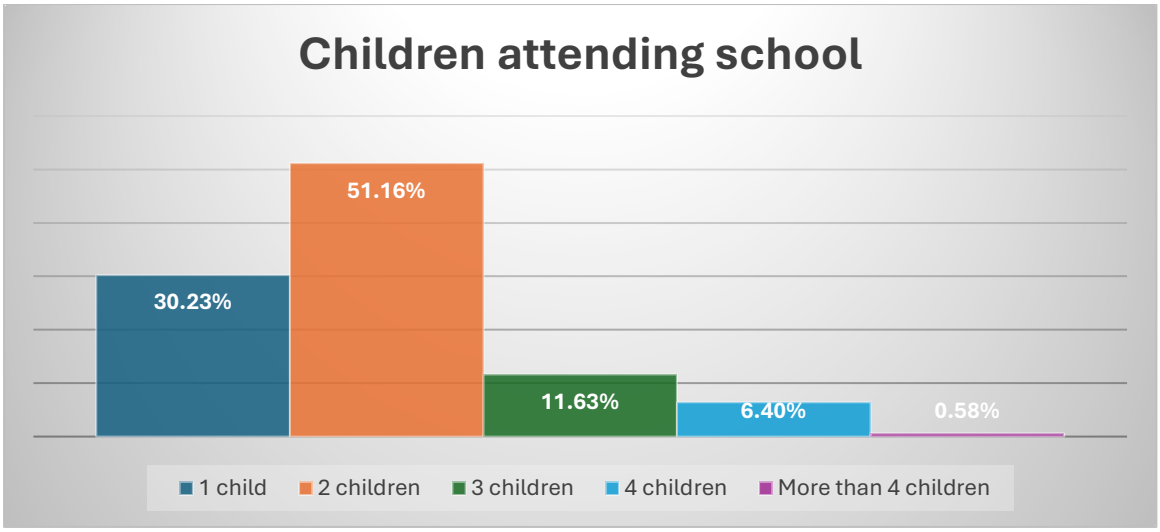

Figure 6.6 Number of children attending school

Ages of the children

Children aged from five to nine made up 30% of the total number of children of all respondents, 30% with ages from 10 to 13, and 40% with ages from 14 to 18 (see Figure 6.7). The ages of the children were therefore evenly distributed.

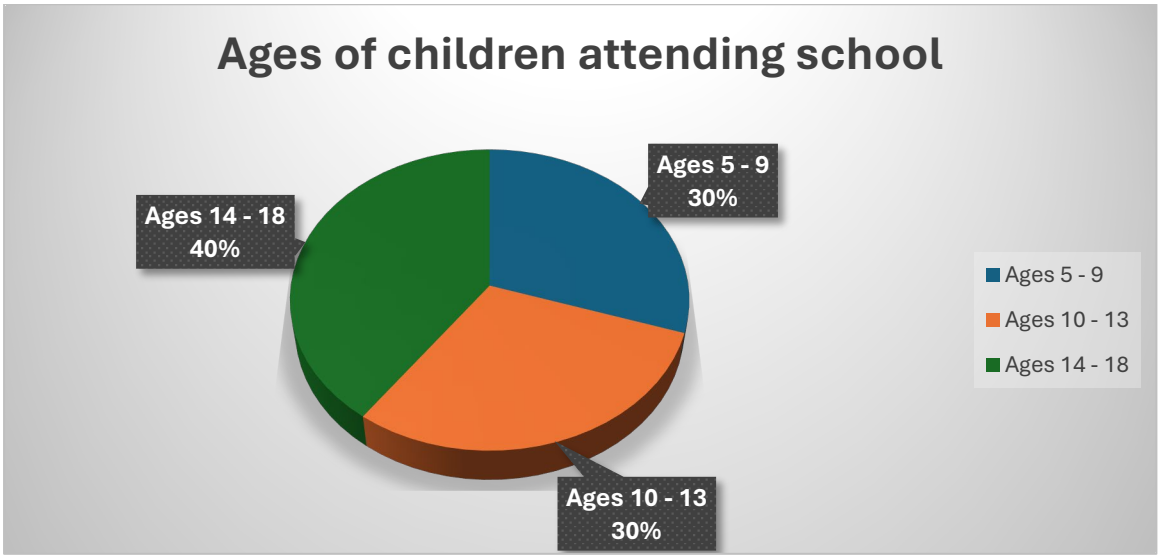

Figure 6.7 Ages of children attending school

6.2.2 Questions on the Health Promotion Levy

The analysis of the responses to the questions on the questionnaire dealing with the Health Promotion Levy is presented below.

Awareness of issues relating to the Health Promotion Levy

Table 6.2 displays the awareness of the respondents about non-communicable diseases and the Levy. Most respondents (54.65%) either did not know or were unsure what a non-communicable disease is. Most respondents (55.81%) were not familiar with the term "Health Promotion Levy". Although the majority (55.23%) of respondents were aware that a tax on sugar-sweetened beverages had been introduced in South Africa, a disturbing 44.19% of respondents were not aware or were unsure.

Table 6.2 Questions on awareness

Awareness				
	YES	NO	UNSURE	NO ANSWER
1. Are you aware what a non-communicable disease is?	44.77%	36.63%	18.02%	0.58%
2. Are you familiar with the term 'sugar tax'?	62.21%	30.23%	7.56%	
3. Are you familiar with the term "Health Promotion Levy"?	44.19%	40.69%	15.12%	
4. Has a tax on sugar-sweetened beverages been introduced in South Africa?	55.23%	6.98%	37.21%	0.58%

Tuck shops at schools

A high percentage (78.49%) of respondents indicated that the tuck shop at the school their child or children attend sells sugar-sweetened beverages to children, and most of the parents (68.02%) provide their child or children with money for these tuck shops at schools (see Table 6.3). Although a high percentage of parents provide their children with money to spend at the tuck shop at school, only 22.68% provide money twice a week or more, whereas 51.16% provide money for the tuck shop only once a week or less (see Figure 6.8).

Table 6.3 Questions on tuck shops at schools

Questions on tuck shops at schools			
	YES	NO	UNSURE
1. Does the tuck shop of the school your child(ren) attend sells sugar-sweetened beverages?	78.49%	7.56%	13.95%
2. Do you provide your child(ren) with money for the tuck shop where he/she/they could buy sugar-sweetened beverages?	68.02%	31.98%	-

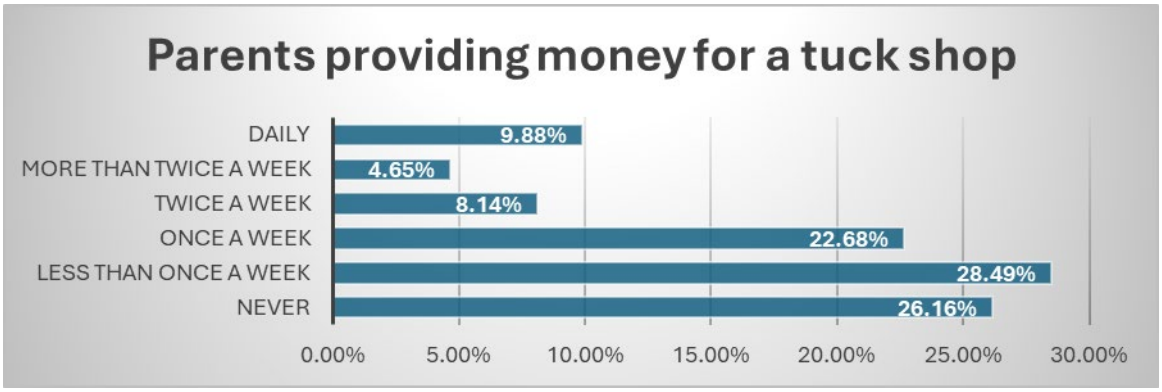

Figure 6.8 Regularity of parents providing money for a tuck shop

Parents' consumption of sugary beverages

The guideline of the World Health Organisation (2015, p.16) is to keep the intake of free sugars below 10% of total energy needs. Figure 6.9 illustrates that 64% of respondents do not consume more than one litre of sugar-sweetened beverages per week, which indicates an awareness of the need to restrict sugar intake.

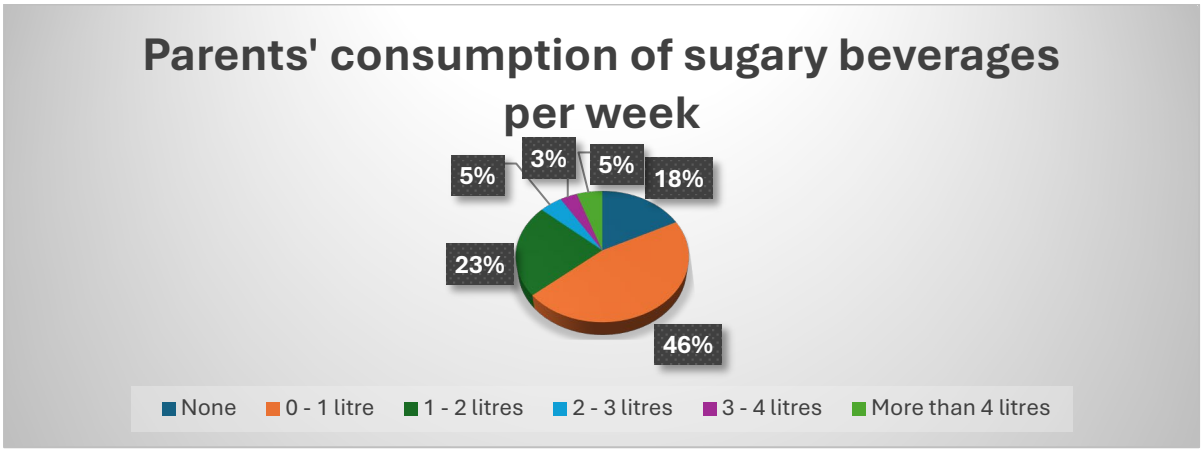

Figure 6.9 Parents' own consumption of sugary beverages per week

Awareness of the links between sugary beverages and non-communicable diseases

The analysis of questionnaire responses (see Figure 6.10) shows that the vast majority of respondents agreed or strongly agreed that frequent consumption of sugary sweetened beverages is associated with increased risks of cavities in children's teeth (91.23%), diabetes (90.06%), and obesity (90.65%). This indicates a high level of parent awareness regarding the health implications of the consumption of sugar-sweetened beverages.

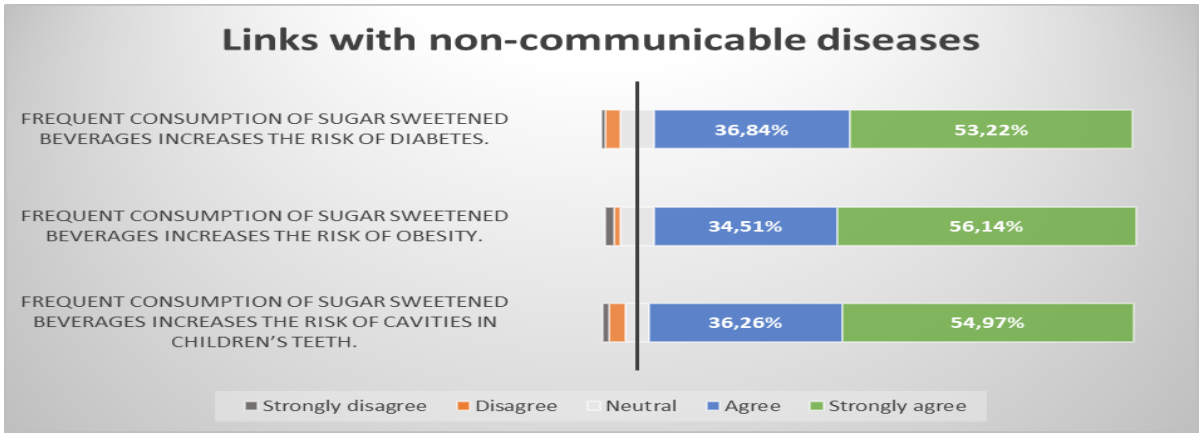

Figure 6.10 Links with non-communicable diseases

Opinions regarding other parents' behaviour

Questions about parents' opinions regarding other parents' behaviour were included in the questionnaire to provide insight into perceived social norms, and to identify the potential bias in responses by highlighting discrepancies between the respondents' actual behaviour regarding the implementation of the Levy (see Figure 6.12) and perceived social norms. Figure 6.11 illustrates the opinions of the respondents.

- Most respondents (52.64%) agreed or strongly agreed that the introduction of the Levy had no impact on how many sugar-sweetened beverages other parents buy for their children. Only 31.58% of the respondents were of the opinion that the announcement of the Levy, before its implementation, prompted other parents to purchase fewer sugar-sweetened beverages for their children, and 37.43% were of the opinion that the actual implementation of the Levy prompted other parents to purchase fewer sugary drinks for their children. In both cases, notable percentages of respondents (36.84% and 33.33%) were neutral on other parents' purchasing behaviour before and after the implementation of the Levy.
- Most of the respondents (81.87%) agreed or strongly agreed that other parents buy sugar-sweetened beverages for their children without realising the long-term impact of the consumption on their health. Most respondents (64.91%) agreed or strongly agreed that, in their opinion, other parents make decisions about drinks they buy for their children based on the price rather than the ingredients of the drink.

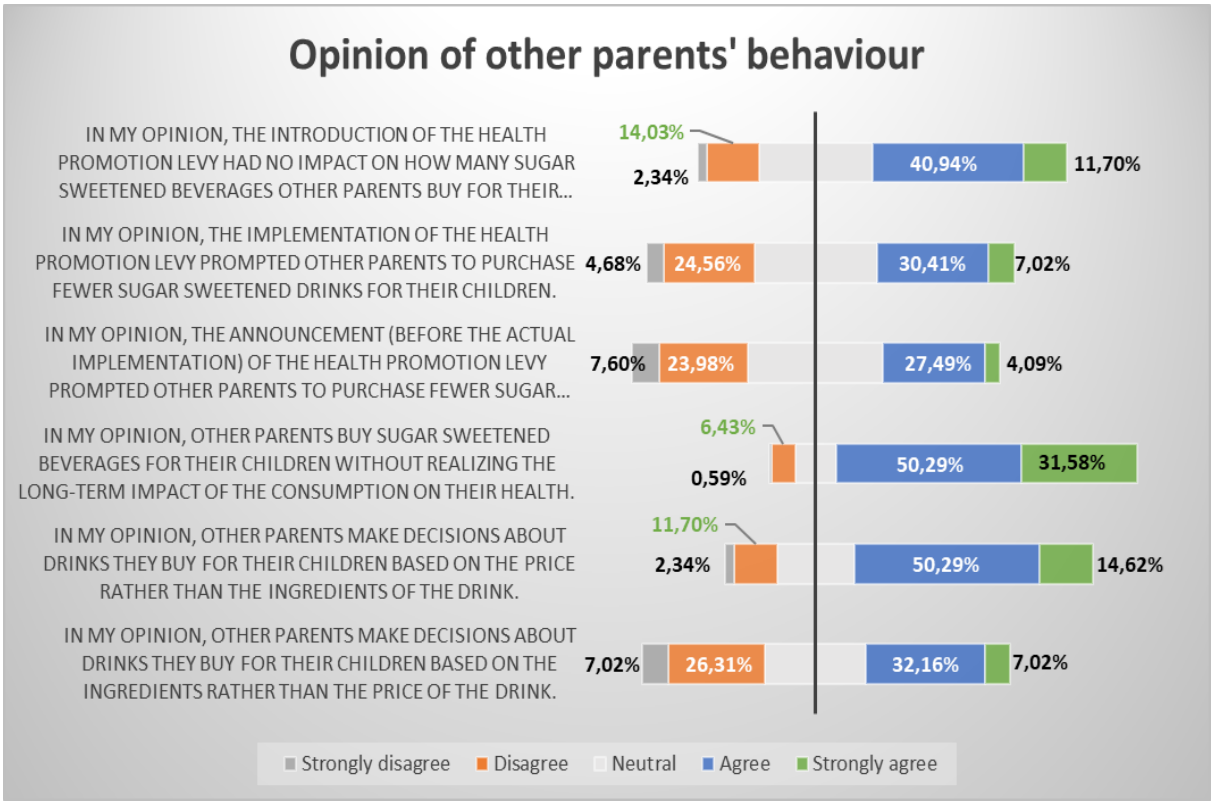

Figure 6.11 Opinion of other parents' behaviour

Impact of the introduction of the Levy

The analysis of the questionnaire responses in Figure 6.12 and the comparison to the responses in Figure 6.11 indicated that:

- The introduction of the Levy had a minimal impact on the behaviour of parents regarding the purchase of sugar-sweetened beverages for their children, where 55.23% of the respondents agreed or strongly agreed that the introduction of the Levy had no impact on how many sugar-sweetened beverages they buy for their children. This is similar to the 52.64% of respondents who agreed or strongly agreed that other parents' purchasing behaviour was not affected by the introduction of the Levy.
- Only 36.05% of respondents agreed or strongly agreed that the announcement of the Levy prompted them to purchase more drinks like diet soda, pure fruit juice, milk or water, compared to 31,58% who held the view that this prompted other parents to purchase fewer sugar-sweetened beverages.
- Although the actual implementation of the Levy resulted in a slightly bigger change in purchasing behaviour, where 40.35% agreed or strongly agreed that the implementation of the Levy prompted them to purchase more drinks like diet soda, pure fruit juice, milk or

water and 39.19% agreed or strongly agreed that they purchased fewer sugary drinks for their children. Figure 6.11 indicates that 37,43% of respondents considered that the implementation of the levy prompted other parents to change their purchases of sugar-sweetened beverages.

These findings suggest that the Levy only had a limited effect on the purchasing behaviour of parents regarding sugar-sweetened beverages for their children. The findings also indicate that, in respect of parents' own response to the questions compared their opinion of other parents' purchasing behaviour, there was minimal bias present.

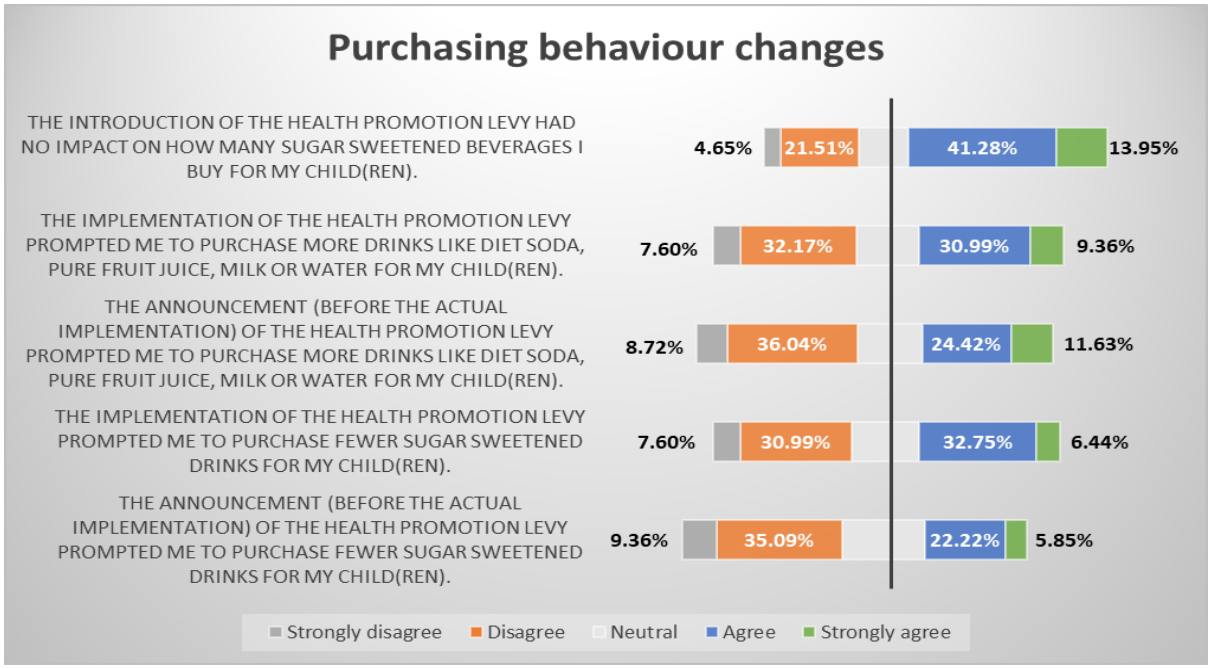

Figure 6.12 Purchasing behaviour changes

Effect of price versus ingredients

The responses to the questionnaire revealed a disparity between respondents' own decision-making and their perceptions of other parents' decision making when it comes to the price of and ingredients in beverages. Figure 6.13 indicates that most respondents indicated that their own purchasing decisions for their children's drinks are based more on ingredients in the beverages (63.16%) than by the price of the beverages (54.38%), but they perceived, according to Figure 6.11, that other parents prioritised price (64.91%) over ingredients (39.18%). Parents might indicate that they are influenced more strongly by ingredients when making purchasing decisions to reflect health-conscious behaviour even if, in reality, the price of a product is a

stronger driving force, and this could indicate a measure of bias in parents' own reported behaviour.

Figure 6.13 Price versus ingredients

Government intervention and the sugar tax

Table 6.4 shows that while a significant percentage (43.6%) of respondents perceive government intervention by implementing a sugar tax as a potential limitation on taxpayers' choices, a significant percentage (32.56%) are neutral or undecided on the matter. There is a broad spectrum of opinions regarding support for the current situation where the Levy is not earmarked for health promotion purposes. Notable opposition is evident with 18.6% of the respondents who strongly disagreed and 20.35% who disagreed that they would support the implementation of the Levy regardless of how the revenue received is being used by the government. On the other hand, a moderate level of support is reflected by 26.16% of respondents who agreed and 10.47% who strongly agreed that they would support the Levy regardless of how the revenue is spent. A substantial percentage of 24.42% of respondents were neutral regarding the question. A divided viewpoint is therefore noted amongst respondents.

Table 6.4 indicates that support for the Levy increases significantly if the revenue is earmarked for health promotion purposes, with a total of 73.1% respondents in support of the Levy, should revenue be earmarked. These findings reveal that public support for the Levy is closely connected to accountability in terms of how the funds received from the Levy will be applied and are consistent with those reported by Le Bodo, *et al*. (2022).

In Chapter Five it was concluded (section 5.6) that the most effective levy or rate is one that results in a 20% increase in the retail price of sugar-sweetened beverages. The questionnaire findings reflect a mixed range of opinions regarding the proposal to increase the retail price of sugar-sweetened beverages by 20% as a strategy to increase the effectiveness of the Levy as

currently implemented. Table 6.4 indicates that 36.25% of respondents are opposed to the suggested price increase, whereas 42.11% are in favour of the suggestion, and 21.64% of respondents indicated that they are neutral. These findings signal that the support for the pricing strategy is divided amongst respondents, with support being slightly higher than opposition.

It is notable, however, that support for an increase in the retail price increases on condition that the government earmarks the tax revenue for health promotion purposes. Of the respondents, 73.53% are in favour of a conditional increase, which constitutes a substantial majority. Only 12.35% of respondents are opposed to an increase even if the tax revenue is earmarked. These results demonstrate that earmarking the revenue received from the Levy plays a critical role in both the respondents' acceptance of the Levy, and a possible proposed increase in the Levy. This agrees with the findings in section 5.6 of Chapter Five that a sugar tax is supported by consumers if the tax revenue generated is earmarked for health care programmes or to subsidise healthy food alternatives. This also supports the conclusion of Eykelenboom, *et al*. (2019, p.2) who argued that understanding the factors that influence public acceptance of a sugar-sweetened beverage tax can provide deeper insight into arguments for and against it, and guide strategies to increase support and improve population health.

Table 6.4 Support for the Health Promotion Levy

Questions regarding support for the Health Promotion Levy					
	Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
I believe that, by imposing a sugar tax on sugar-sweetened beverages, the government limits taxpayers' rights to make their own choices.	6.98%	16.86%	32.56%	31.97%	11.63%
Currently, the South African government is not earmarking the revenue received from the levy for health promotion purposes but is using the revenue for the country's general budget. Considering this, I support the implementation of the Health Promotion Levy regardless of how the revenue received is being used by the government.	18.60%	20.35%	24.42%	26.16%	10.47%
I will only support the implementation of the Health Promotion Levy IF the total tax revenue will be earmarked for health promotion purposes.	2.34%	8.19%	16.37%	43.86%	29.24%
Recent research indicates that the current rate of the Health Promotion Levy does not have a meaningful effect in preventing tooth decay, obesity, and diabetes. If the government was to propose an increase in the Health Promotion Levy, it will result in a 20% increase in the retail price of sugar-sweetened beverages. This means	15.20%	21.05%	21.64%	27.49%	14.62%

that a 2-liter soda drink which costs R27 before the increase will cost R32.40 after the increase of the Health Promotion Levy. Considering this, I support an increase in the Health Promotion Levy.					
I will only support an increase in the Health Promotion Levy on condition that the total tax revenue is earmarked for health promotion purposes.	3.53%	8.82%	14.12%	45.88%	27.65%

6.2.3 Respondents' perception of government's accountability and transparency

This section presents the analysis of responses relating to respondents' trust in the government. For the question "Do you believe the government is accountable and transparent regarding the revenue from the Health Promotion Levy?" the responses were as follows:

Table 6.5 Perception of government's accountability and transparency across race groups

	Black African	White	Coloured	Indian	Other
Yes	26.03%	7.78%	0%	0%	50%
No	32.88%	56.67%	33.33%	0%	0%
Unsure	35.62%	35.56%	66.67%	100%	50%
No answer	5.48%	-	-	-	-

This indicates that 32.9 of Black African respondents, 56.7% of White respondents, and 33% of Coloured respondents have a negative perception regarding the government's accountability and transparency. The same question was answered as follows under the different levels of income:

Table 6.6 Perception of government's accountability and transparency across income groups

	≤ R15 000	R15 001 – R30 000	R30 001 – R45 000	R45 001 – R60 000	≥ R60 001	Prefer not to answer
Yes	21.15%	17.65%	9.52%	0%	12.50%	21.88%
No	26.92%	52.94%	61.90%	66.67%	59.38%	37.50%
Unsure	50%	29.41%	28.57%	33.33%	28.13%	31.25%
No answer	1.92%	-	-	-	-	-

This indicates that 26.9% of the respondents in the category “Less than R15 000”, 52.9% in the category “R15 001 – R30 000”, 61.9% in the category “R30 001 – R45 000”, 66.7% in the category “R45 001 – R60 000”, 59.4% in the category “More than R60 000”, and 37.5% of respondents who preferred not to disclose their monthly household income have a negative perception regarding the government’s accountability and transparency.

These high percentages highlight a significant distrust amongst respondents across all races and income levels regarding the government's administration of tax revenue received from the Levy, signalling a wide societal concern. It is suggested that the government may struggle to gain public support for tax policies such as the Levy due to the widespread lack of confidence, which in turn can hinder the effectiveness of these policies. As discussed in section 4.2.4 of Chapter Four, the lack of transparency raises doubts about the fairness of a tax system and damages taxpayers’ confidence, which is vital for voluntary compliance. This concern is in line with the conclusion of Allcott, Lockwood and Taubinsky (2019, p.8) that public support for a sugar-sweetened beverage tax is significantly affected by the public’s trust or mistrust in their government.

6.3 ANALYSIS OF ASSOCIATIONS

Chi-square tests were carried out to establish the association between categorical variables. Pairs of variables from the questionnaire were chosen where it was meaningful for the research study to test for associations to address the goal of the research.

The Chi-square test for independence uses a p-value, or probability value, a statistical measure to determine whether the likelihood of the observed results from the data are due to chance. If the p-value is equal to or less than 0.05, it indicates that the association between the variables is statistically significant. The threshold of 0.05 is a significance level commonly used in statistics (Minitab Support, 2024).

6.3.1 Association between awareness of non-communicable diseases and gender

A Chi-square test was conducted to evaluate the association between participants’ awareness of non-communicable diseases and their gender. Of the female respondents, 48.25% answered “yes” to the question whether they are aware of what a non-communicable disease is, while only 27.59% of the male respondents answered “yes”. The statistically significant result (p-value = 0.0342) suggests that awareness of non-communicable diseases differs by gender.

6.3.2 Association between awareness of non-communicable diseases and levels of income

This test investigates the association between respondents' income levels and their awareness of what non-communicable diseases are. Of the respondents in the highest income group (household income of more than R60 000 per month), 71.88% responded "yes" to the question whether they are aware what a non-communicable disease is, followed by 61.11% of the respondents in the monthly household income group between R45 001 and R60 000. Respondents from the lower income groups (lower than R15 000 per month and between R15 001 and R30 000 per month) had lower percentages of "yes" responses (23.08% and 41.18% respectively). A notable percentage of "unsure" responses (41.94%) are from the lowest income group (household income lower than R15 000 per month). The Chi-square test result (p=0.0170) indicates that there is a statistically significant association between respondents' awareness of what a non-communicable disease is and their levels of income, suggesting disparities in health awareness are linked to economic status. The results may indicate that lower income groups have less access to healthcare education. This association is similar to the conclusion of Allcott, Lockwood and Taubinsky (2019, p.15) that individuals with lower incomes tend to have limited nutritional knowledge and are more likely to report consuming excessive amounts of sugar-sweetened beverages. The observation by Quiroz-Reyes, *et al*. (2025, p.2) that tax on sugar-sweetened beverages can disproportionately impact low-income households as they allocate a larger portion of their income on these beverages compared to higher income households, as in the case of the analysis of this association, highlights the need for broad-based educational interventions.

6.3.3 Association between awareness of non-communicable diseases and levels of education

The Chi-square test that was carried out to test the association between awareness of non-communicable diseases and levels of education revealed that there is a statistically significant difference (p-value = 0.0076) between respondents' level of education and their awareness of non-communicable diseases. The highest percentage of respondents who answered "yes" to the question whether they are aware what a non-communicable disease is (65.45%) was from those with a postgraduate degree, followed by those with a diploma (59.09%). Respondents who indicated their highest education as secondary level up to grade 10 showed the highest percentage of "no" answers (64.29%). Respondents with a postgraduate degree had a lower percentage of "no" responses (30.91%), indicating a higher awareness of what a non-

communicable disease is amongst respondents with higher education levels. This suggests that respondents with a higher education are better informed or have more access to information regarding non-communicable diseases.

The finding by Sarda, *et al*. (2022, p.3243) that participants with higher income and education levels were more likely to support the tax on sugar-sweetened beverages is possibly attributable to their increased awareness of the health risks associated with sugar-sweetened beverages.

6.3.4 Association between respondents providing money to their children for the tuck shop and parents' own consumption levels of sugar-sweetened beverages

This test evaluates the association between parents providing their children with money on a weekly basis that they could use to buy sugar-sweetened beverages at the school tuck shop, and parents' own consumption levels of sugar-sweetened beverages. The Chi-square test indicates a strong statistically significant association (p-value <0.0001) between these two variables. A very large percentage (86.67%) of parents who, themselves, consume more than three litres of sugar-sweetened beverages per week, also provide their children with money for the tuck shop at school where they can buy sugar-sweetened beverages. Only a very small percentage of parents (13.33%) do not provide their children with money for the tuck shop at school. Of the parents who do not consume sugar-sweetened beverages themselves, 70% do not provide their children with money for the tuck shop at school. Thus, parents who consume sugary drinks themselves are more likely to provide their children with money for the tuck shop at school where they could buy sugary drinks.

6.3.5 Association between respondents' own consumption levels of sugar-sweetened beverages and gender

This test explores the relationship between parents' own consumption levels of sugar-sweetened beverages and their gender. A high percentage of male respondents (68.96%) consume sugary beverages within the "0 - 1 litre" or "1 - 2 litres" per week ranges, whereas most female respondents (67.83%) consume sugary beverages within the "none" or "0 - 1 litre" per week ranges. A notable portion of male respondents (13.79%) consume more than 4 litres of sugar-sweetened beverages per week, whereas only 3.50% of female respondents consume sugary drinks in that range. The results of the Chi-square test (p = 0.0281) indicate that a statistically significant difference was found between the two variables. The test reveals that

male respondents are more likely to consume larger quantities of sugar-sweetened beverages than female respondents.

6.3.6 Association between respondents' own consumption levels of sugar-sweetened beverages and race

This test investigates the association between respondents' own consumption levels of sugar-sweetened beverages and race. Black African respondents consume 0 - 1 litre (35.62%) or 1 - 2 litres (34.25%) of sugar-sweetened beverages per week. A significant percentage of White respondents (57.78%) consume 0 - 1 litre and a notable percentage (23.33%) fell into the "none" level of consumption. Although there were only a few (six) Coloured participants, they are split across the higher consumption levels with 33% consuming 2 - 3 litres of sugary drinks per week and 50% consuming more than 4 litres of sugary drinks per week. The single Indian respondent reported consuming no sugar-sweetened beverages and in the "other" race category, one respondent reported consuming no sugar-sweetened beverages, with the other respondent reported consuming 0 - 1 litre of sugary drinks per week. The test indicated that there is a strong statistically significant difference (p-value < 0.0001) between the variables. Coloured participants displayed higher consumption of sugar-sweetened beverages (more than 4 litres per week), there is a wide distribution of consumption levels amongst Black African respondents, and White respondents are less likely to consume more than one litre of sugary drinks per week.

6.3.7 Association between respondents' own consumption levels of sugar-sweetened beverages and levels of income

This test investigates the relationship between parents' own consumption of sugar-sweetened beverages and their levels of income. The Chi-square test was statistically significant (p-value $= 0.0309$), suggesting a meaningful association between levels of household income and sugary drink consumption. The key observation from the test is that respondents in higher income groups are likely to consume lower quantities of sugar-sweetened beverages, and that consumption of sugary drinks is higher among lower income participants.

Table 6. 7 Association between respondents' own consumption levels and Income

Association between respondents' own consumption levels and Income						
	Household income per month					
	≤ R15 000	R15 001 – R30 000	R30 001 – R45 000	R45 001 – R60 000	≥ R60 001	Prefer not to answer
Respondents' own consumption p/week						
Did not answer	1.92%	-	-	-	-	-
None	11.54%	11.76%	9.52%	33.33%	28.13%	15.63%
0 – 1 litre	32.69%	76.47%	61.90%	50%	46.88%	37.50%
1 – 2 litres	25%	-	23.81%	16.67%	18.75%	37.50%
2 – 3 litres	5.77%	5.88%	-	-	6.25%	6.25%
3 – 4 litres	9.62%	-	-	-	-	3.13%
More than 4 litres	13.46%	5.88%	4.76%	-	-	-

6.3.8 Association between respondents' perception of the Levy's efficiency and their change in purchasing behaviour

This test evaluates the association between respondents' perception of the Levy's efficiency and the change in participants' purchasing behaviour after the implementation of the Levy. Among respondents who perceived the Levy to be efficient, the majority (59.57%) agreed or strongly agreed that the implementation of the Levy prompted them to purchase fewer sugar-sweetened beverages for their children. For respondents who perceived the Levy not to be efficient, 56.45% disagreed or strongly disagreed that they were prompted by the implementation of the Levy to purchase fewer sugar-sweetened beverages for their children. The Chi-square test demonstrated that there is a statistically significant association (p-value = 0.0050) between respondents' perceptions of the Levy's efficiency and the change in the number of sugar-sweetened beverages they purchased for their children after the implementation of the Levy. From the analysis it can be concluded that positive perceptions about the Levy's efficiency are strongly linked to reduced sugar-sweetened beverage purchases. This conclusion agrees with the finding of Eykelenboom, *et al*. (2019, p.2) that it is important to understand the factors influencing public support of a tax on sugar-sweetened beverages to inform strategies designed to improve population health.

6.4 CONCLUSION

The introduction to the chapter referred to the goal of the research and the benefit of the mixed-method approach adopted to address this goal. The data collection process involving the

administration of questionnaires was discussed and this was followed by an analysis of the data obtained from closed-ended questions on completed questionnaires.

The findings from this study provide insights into parents' awareness, perceptions and opinions regarding the implementation of the Levy. While most respondents were aware that a tax on sugar-sweetened beverages had been introduced in South Africa, a substantial number of respondents were either unaware or unsure of its implementation.

A high level of awareness was observed among parents regarding the health implications of the consumption of sugar-sweetened beverages. The findings revealed that gender, level of education, and level of income have an impact on respondents' awareness of what a non-communicable disease is. Statistically strong associations also exist between respondents' own consumption of sugar-sweetened beverages and their gender, race, and level of income.

Most respondents confirmed that sugar-sweetened beverages are sold in their children's school tuck shops, and most parents provided their children with money that could be spent in the school tuck shops, potentially to buy sugar sweetened beverages. The analysis indicated that parents who consume sugary drinks themselves are more likely to provide their children with money for the tuck shop at school.

The findings revealed that, while the implementation of the Levy may have had some effect on the purchasing behaviour of parents regarding sugar-sweetened beverages for their children, its effect on parents' decisions was minimal.

The quantitative part of the analysis has highlighted that the concept of earmarking the revenue received from the Levy plays a vital role in the respondents' acceptance of the Levy. A notable finding was the widespread distrust of respondents in government's accountability and transparency regarding revenue collected from the Levy.

The next chapter explains the interview process and documents the analysis of the qualitative data.

CHAPTER 7

QUALITATIVE DATA ANALYSIS

7.1 INTRODUCTION

Chapter Six partially addressed the third sub-goal of the research, which was to investigate parents' awareness of the Levy and its purpose, and whether the Levy will induce parents to change their behaviour regarding providing their children with sugary beverages, by presenting the analysis of the quantitative data – the closed-ended questions in the questionnaire. This chapter builds on that by analysing the qualitative data as part of a mixed-method approach that is adopted.

The process adopted to obtain the questionnaire and interview data was explained in Chapter Three.

The analysis of the open-ended questions in the questionnaire is presented in this chapter. This is followed by a discussion of the six steps of thematic analysis developed by Braun and Clarke (2006) that were used to analyse the data obtained from conducting the interviews. The results of the thematic analysis of the interview data are then presented.

7.2 ANALYSIS OF THE OPEN-ENDED QUESTIONS IN THE QUESTIONNAIRE

The three open-ended questions that were included in the questionnaire were analysed using thematic analysis. The themes that emerged from the analysis are discussed next.

7.2.1 Responses to open ended questions in the questionnaire

The open-ended questions were included in the questionnaire to allow respondents to elaborate on and give reasons for their experiences and viewpoints. The questions relate to respondents' perceptions of the fairness and efficiency of the Levy, as well as perceptions of government accountability and transparency. Responses could often have been included under one or more themes, but what follows deals with all responses, each analysed under a particular theme.

7.2.1.1 Positive perceptions of the fairness of the Levy

Out of 172 responses, 57 respondents (33.14%) answered "Yes" to the question whether they perceive the current design of the Levy to be fair, and 36 respondents proceeded to provide a reason. The main themes that emerged from reasons for the "Yes" responses are presented below.

Fairness is achieved as the Levy is based on consumption

This theme reflects the respondents' perception that fairness is achieved because tax is levied based on consumption rather than on income. One participant stated: "Consumers pay the sugar tax according to the quantity of sweet beverages they consume. This means that consumers who earn less can pay less of the tax by consuming less of the sweet products." Another participant noted that "everyone consuming should pay". One participant felt strongly that "it is up to each person to decide how much sugary products they want to buy. Regardless of your income, you can decide not to buy those products, so it is not a tax that is enforced on basic food essentials."

Encourages healthier alternatives

The focus of the reasons provided was on the purpose of the Levy to promote healthier lifestyles by reducing the consumption of sugary beverages, with the aim to combat non-communicable diseases. As one participant expressed it, "it encourages healthier choices, and it reduces healthcare costs". Reflecting the importance of health, one participant wrote: "Health promotion is essential. Any discouragement to limit sugar intake is to the benefit of the individual and society at large."

Focuses on children's health

Respondents perceived the Levy to be fair based on the benefits of the Levy in improving the health of children. One participant suggested that parents are motivated by the Levy to make better choices regarding what they provide their children to drink. Another participant believed that "they are trying to control the consumption of sugar in schools". Respondents shared the belief that the Levy will help children to be healthy and to prevent obesity in children.

Reduces the burden of diseases

Responses highlighted the role of the Levy to reduce the prevalence of non-communicable diseases and to relieve the pressure on the healthcare system. Supporting this perception, one participant remarked, "it prevents diseases associated with increased sugar intake. Should this not be controlled the burden will fall on the public health system". Another participant expressed the concern that "sugar is bad for a human body as it causes obesity and other diseases like diabetes".

7.2.1.2 Negative perceptions of the fairness of the Levy

Out of 172 responses, 48 respondents (27.91%) answered "No" to the question whether they perceive the current design of the Levy to be fair, and 25 respondents provided a reason why they perceive the Levy not to be fair. The main themes that emerged from these responses are presented below.

Impact on low-income groups

This theme focused on the disproportionate effects of the Levy on people earning lower incomes, including people receiving social grants. Respondents expressed concern regarding the uniform application of the Levy regardless of income levels. Supporting this perception, one participant mentioned that "the more you earn, the more you should be taxed". Echoing similar sentiments, a respondent stated, "because a fair tax is a tax where payers who earn more than others pay more tax".

Ineffective impact on consumer behaviour

Some respondents criticised the effect of the Levy on promoting healthier dietary choices, suggesting that the Levy will not change the behaviour of those who can afford the sugary drinks and decide to buy them. As one participant responded: "Buying sugar items is a choice one makes irrespective of the tax on the item". Another participant agreed, stating that "price increase for or in sweetened drinks won't make people drink or eat healthy. If you can afford it, you will buy it, no matter the price".

Burden on the economy and being over-taxed

The financial constraint of the Levy on consumers was highlighted, particularly in the context of high living costs and the unemployment rate in South Africa. One participant described the experience, writing, "We are already paying a lot of tax. Healthy food is expensive. Living cost is terribly high. By paying more tax we can't survive a month". Supporting this view, another participant remarked, "I feel that taxpayers are already stretched to the limit financially". Some respondents expressed frustration with the overall tax burden on consumers, with one participant stating, "You already pay tax on everything … your income and then in the end in actual case you pay tax three times on something you buy as a consumer".

Impact on industry and employment concerns

This theme refers to the potential negative consequences of the Levy on manufacturers and employment in the beverage industry. In line with the theme of fairness, one participant stated, "The impact on manufacturers and the potential for job losses in the beverage industry is unfair".

7.2.1.3 Uncertainty regarding the Levy and its fairness

A total of 66 respondents (38.37%) answered "Unsure" to the question whether they perceive the current design of the Levy to be fair. Twenty-six respondents gave a reason for their perception of uncertainty. One participant (0.58%) did not answer the question. Two main themes emerged from the respondents' reasons.

Lack of awareness about the Levy

The first theme reflects that some respondents are unfamiliar with the Levy, either because of insufficient information, or a lack of exposure to the Levy, or its purpose. Highlighting the lack of awareness, one respondent commented, "Because I never heard anything about the word Health Promotion Levy", and another respondent stated, "Not aware of the Health Promotion Levy".

Uncertainty about the details of the Levy

The second theme indicates that respondents are uncertain regarding the specific features of the Levy, including its purpose and design. This was often due to limited knowledge about the Levy, which can be seen from comments like, "Not exactly sure what the Health Promotion Levy entails", "Not sure what this entail" and "I am not clued with levy issues". As one participant expressed the reason for the uncertainty, "Because the fairness of the Health Promotion Levy design depended on various factors including its intended purpose, implementation and impact on different stakeholders".

7.2.1.4 Positive perceptions regarding the efficiency of the Levy

Out of 172 responses, 47 respondents (27.33%) answered "Yes" to the question whether they perceive the current design of the Levy to be efficient, and 25 respondents provided reasons. The main themes that emerged from reasons for the "Yes" responses are discussed next.

Health benefits

The role of the Levy to promote health by reducing sugar-related diseases such as obesity, diabetes and tooth decay was highlighted by the respondents. One respondent indicated that, "it can help in decreasing many health issues caused by sugar". Another expressed the concern that, "sugar is really killing the nation. I know firsthand".

Change in consumer behaviour and decision making

The impact of the Levy on consumer behaviour was emphasised and the role of the Levy to encourage informed choices when buying beverages was highlighted. Reflecting the importance of consumer behaviour, one participant stated, "it will help consumers to make good decisions when coming to buying soft drinks". Supporting this, a participant responded, "if it stops consumers from purchasing more sugar-sweetened beverages, then it is efficient".

Increased awareness

This theme reflected the Levy's ability to raise awareness regarding the health risks of excessive sugar consumption. One participant stated that "it reduces sugary drinks consumption, and it increases awareness". This view was shared by another participant who predicted that, "people who buy the sugar-sweetened beverages would be less as people are going to be aware of the risks".

7.2.1.5 Negative perceptions regarding the efficiency of the Levy

A total of 62 respondents (36.04%) answered "No" to the question whether they perceive the current design of the Levy to be efficient, and 36 respondents provided a reason why they perceive the Levy not to be efficient. The main themes that emerged from these responses are presented below.

Insufficient change in consumer behaviour

Scepticism was expressed regarding the Levy's ability to change consumer behaviour or reduce sugar-related health issues. The belief was conveyed that the consumption of sugary products is a personal choice, and the Levy does not hinder those committed to their preferences. In line with this theme, one participant stated: "I fail to see any difference this levy is making in the use of sugar". Providing a similar perspective, another participant wrote: "I don't think people consider this when making their choices. They buy what they like to drink/use". Another participant noted that, "obesity, diabetes etc are still a huge problem in spite of health

promotion levy". This sentiment is echoed by another participant: "People are still obese, and sugar tax has been with us for a while". Highlighting the complexity of the situation, a participant commented: "To change the behaviour of using less sugar, a 'culture' change is needed. This cannot be achieved by more tax".

Lack of public awareness

The lack of public awareness and education was pointed out. It was suggested that better communication from government is needed. As one participant explained:

> There is absolutely no public education from government side on the sugar tax. It was in the news when it was implemented in 2018, I believe, but since then people are absolutely not aware that a sugar tax is included on a product. Government should force a warning label sticker on the products, exactly like what is being done with cigarettes. The general public still does not have any idea how harmful excessive sugar intake is, especially for children.

Reflecting the importance of awareness, one participant wrote, "more should be done to inform the users of these products about the sugar content in the product and advise on what an allowable quantity is".

Low tax rate

The rate at which the Levy is imposed was criticised for being too low to significantly impact consumer behaviour. A potential increase was suggested, as can be seen from one participant's comment: "I think the percentage of the levy is still little to have an impact on consumer behaviour. It is however a good start by the government and should continue to increase for parents and consumers in general to start getting discouraged to buy." This view was supported by another participant who indicated that "the tax rate is too low and does not deter current behaviour".

Availability of cheaper sugary alternatives

The availability and affordability of other beverages containing sugar compared to healthier alternatives was highlighted by the respondents. One participant believed that "people still buy the sugary drinks and food because it is cheaper than healthy food, my experience is that the tax did not change people's behaviour". Another participant expressed the following concern: "I do not think behaviour has changed. Consumers just switched to cheaper brands".

Distrust in government

A lack of trust in the government's intentions was reflected in the responses. There was a perception that the Levy is used as a revenue-generating mechanism rather than a health initiative. Supporting this view, one participant commented: "We currently only see the sugar tax as another means for SARS/Government to take more money from us, it has nothing to do with educating people about sugar and the link to declining health". Another participant expressed the concern, "I feel like our government doesn't care for our people".

Addiction and habits

It was suggested that sugar consumption is driven by addiction or ingrained habits, making the Levy inefficient as a mechanism to change behaviour. As one participant expressed it: "People who are addicted to a product will buy it. They will make sacrifices on other things". Providing a similar perspective, one participant wrote: "Everyone still consumes and purchase the more expensive sugar products in the same amount as before, it just resulted in less money to spend on other things".

7.2.1.6 Uncertainty regarding the efficiency of the Levy

A total of 61 respondents (35.47%) answered "Unsure" to the question whether they perceive the current design of the Levy to be efficient. A total of 19 respondents gave a reason for their perception of uncertainty. Two respondents (1.16%) did not answer the question. Two main themes emerged from the respondents' reasons.

Uncertainty regarding the impact

The respondents expressed doubts regarding the efficiency of the Levy in achieving its goal to reduce sugar consumption. As one participant wrote: "I do not know what the impact is. I still buy sweetened drinks irrelevant to the Levy". Supporting this perception, another participant noted: "I have not seen the results of it yet".

Lack of awareness about the Levy

Many respondents were unaware of the specific attributes of the Levy's design or implementation. This is indicated by comments like, "not sure what the current design of the Health Promotion Levy entails", "I am not sure if the tax has been implemented correctly", and "not familiar with it".

7.2.1.7 Positive perceptions regarding the government's transparency and accountability

Out of 172 responses, 27 respondents (15.69%) answered "Yes" to the question whether they believe the government is accountable and transparent regarding the revenue received from the Health Promotion Levy, and 15 respondents provided a reason. The main themes that emerged from reasons for the "Yes" responses are presented below.

Clear tax rules

It was pointed out that clear tax rules and regulations help to ensure transparency and build trust in the government's management of the Levy. In support of this, one participant commented that "the tax rules are clear", a similar comment stated, "clear tax rules", and another participant wrote: "The government is accountable regarding the revenue received because even the rates and taxes are discussed from there and all the rules and regulations".

Communication and engagement

The government's efforts to involve stakeholders in discussions about the Levy was reflected by comments like: "They attempt to communicate through the correct channels", and "The government engage stake holder like NGO's and private sector".

Healthcare funding and social support

Although the revenue of the Levy is not earmarked, two respondents indicated that they believe the government is accountable and transparent "because we can get healthy care" and that "the revenue received is used to assist in some significant issues like food subsidies, food parcels, grants and many more".

7.2.1.8 Negative perceptions regarding the government's transparency and accountability

A total of 79 respondents (45.93%) answered "No" to the question whether they believe the government is accountable and transparent regarding the revenue received from the Health Promotion Levy, and 44 respondents provided a reason why they perceive the government not to be accountable and transparent. The main themes that emerged from these responses are presented below.

Corruption and distrust

This theme highlights the distrust in the government's accountability due to corruption, fraud, or poor management of public funds. A broad frustration with governance was expressed. One

participant voiced the concern that "the government does not have the best track record when it comes to accountability and transparency". Supporting the perception of corruption, one participant commented, "due to the current situation in the country regarding corruption and the wasting of taxpayers' money in the health care sector there is no reason to trust the government that they are or will be transparent on issues like this". Echoing similar sentiments, a participant wrote: "Trust in the local government is scarred due to high level of corruption and fraud. The public is not educated properly on the Health Promotion Levy. If they are not sure what it is, how can they trust that the government is accountable and transparent?"

Lack of communication from government

The government was criticised for not providing information and feedback on how the revenue received from the Levy is spent. A demand for clear and accountable management of revenue received from the Levy was expressed. One participant wrote that he/she "have not seen quality feedback yet". Another participant agreed, stating, "how the government utilises the revenue generated from the levy, whether it's invested back into health programs is not made public". Reflecting the importance of transparency, one participant commented, "I have never seen reports of what they actually do with this money". One participant described his/her experience, "I could have missed/been ignorant on this, but I have not really heard any feedback from government about what the revenue generated from the Health Promotion Levy is used to fund".

Lack of awareness about the Levy

The respondents' unfamiliarity with the Levy and its purpose was highlighted. This indicates that the public is not well informed about the Levy or its use. Illustrating this perception, one participant commented that "not many people know about this levy" and another participant stated, "this is the first time I find out about health promotion and there are a lot of people like me". As one participant expressed it, "They don't bother themselves to make parents aware".

Mismanagement of revenue

Concerns were raised that the revenue received from the Levy is not specifically earmarked for health promotion purposes. A participant expressed the concern that "some of the revenue received by the government is used to benefit only the rich people who are high in government". In line with this concern, a participant commented, "The revenue is not sufficiently disclosed and should go towards medical expenditures and awareness drives

dealing with obesity, diabetes and tooth decay". Another participant expressed the opinion that "the tax is supposed to be used to promote healthy behaviour, which it is not used for currently".

7.2.1.9 Uncertainty regarding the government's transparency and accountability

A total of 62 respondents (36.05%) answered "Unsure" to the question on whether they believe the government is accountable and transparent regarding the revenue received from the Health Promotion Levy. A total of 18 respondents gave a reason for their uncertainty. Four respondents (2.33%) did not answer the question. Three main themes emerged from the responses.

Uncertainty regarding lack of communication from government

Concerns were raised about government's failure to provide transparent information or detailed disclosures regarding the revenue received from the Levy. One participant stated, "I am not sure because they don't separate it when they give speech. They don't disclose the full information". Another participant responded, "Evaluating government accountability and transparency regarding revenue from the HPL requires access to detailed information".

Uncertainty whether government can be trusted

General scepticism regarding the government's honesty and accountability was highlighted by comments like "can't trust the government", "as we all know, our government is not transparent about anything" and "not sure if they are honest about anything".

Lack of awareness

Uncertainty due to the lack of knowledge among respondents regarding the Levy, its implementation and how revenue is managed was identified by comments such as, "I have not heard anything about it", "I don't know anything about this" and "I have not read or heard anything about it".

7.2.1.10 Concluding comments on the open-ended questions

Chapter Three discussed the principles of a good tax and evaluated the Levy's compliance with a good tax system from a theoretical perspective. The three open-ended questions in the questionnaire were designed to test the views of participants regarding whether the Levy is a good tax. The responses are set out in Table 7.1.

Table 7.1 Summary of responses to the open-ended questions in the questionnaire

ASPECT OF A GOOD TAX SYSTEM	YES %	NO %	UNSURE %	NO ANSWER %
Fairness of the Levy	33,14	27,91	38,37	0,58
Efficiency of the Levy	27,33	36,04	35,47	1,16
Government transparency and accountability	15,69	45,93	36,05	2,33

Source: Own formulation

The small proportion of "yes" responses reflected in Table 7.1 indicates that, in the opinion of most respondents, the Levy does not comply with the principles of a good tax policy. The general conclusion in Chapter 3 regarding whether, from a theoretical perspective. the Levy is a good tax policy, was that from the perspective of consumers, manufacturers and the government, the Levy is mostly compliant with the principle of fairness, but it is to great extent not compliant with the principle of efficiency, and only partially compliant regarding transparency and accountability. The responses of the participants, therefore, appear to mirror the concerns expressed in Chapter Three.

7.3 ANALYSIS OF THE INTERVIEW DATA

The data from the transcribed interviews were thematically analysed using the six phases developed by Braun and Clarke (2006). According to Braun and Clarke (2006, p.6), thematic analysis is a method for identifying, analysing, and presenting themes within qualitative data. The authors explained that it offers a structured approach to organise and describe a dataset in detailed and meaningful ways. Thematic analysis is an appropriate approach for exploring different research participants' perceptions to highlight both similarities and differences to uncover unexpected insights (Braun & Clarke, 2006; Nowell, *et al*., 2017, p.2).

Phase 1: Familiarising yourself with the data

The interview recordings were transcribed by the researcher into a written form. A "verbatim" account was captured of all verbal responses. Riessman (1993, cited in Braun & Clarke, 2006, p.17) indicated that the process of transcription "can be an excellent way to start familiarising yourself with the data". The researcher then immersed herself in the interview transcripts by repeated reading to ensure that she had a thorough understanding of the scope and detail of its content. The researcher made notes and highlighted sections to start getting ideas for coding.

The researcher approached the analysis as a faithful observer and, while engaging with the data, remained transparent and vigilant about her own perspectives, assumptions and beliefs (Starks & Trinidad, 2007, p.1376).

Phase 2: Generating initial codes

Codes recognise aspects of the data in basic segments that the researcher finds interesting (Braun & Clarke, 2006, p.18). Through the process of coding, data are grouped into meaningful categories (Tuckett, 2005, pp. 80 – 83). The process of coding was done manually by the researcher by writing notes on the transcripts, using highlighters and coloured pens. Relevant elements and interesting aspects of data were identified that might form the basis of repeated patterns throughout the interview transcripts. The researcher identified nine codes during this phase and data extracts were paired with the relevant codes.

Phase 3: Searching for themes

The third phase involves an examination of the codes to identify patterns and then organise, consolidate and streamline the data around central themes (Starks & Trinidad, 2007, p.1375). The researcher considered how the codes identified in phase 2 could be combined to form a unifying theme and initially developed six themes.

Phase 4: Reviewing themes

Braun and Clarke (2006, p.20) suggested that the initially developed set of themes should now be refined and revised. As advised by the authors, the themes were reviewed and refined to ensure that the themes accurately represent the interview data and to determine whether they are meaningful in relation to the research goals. During this phase the researcher realised that some of the themes could be combined, resulting in four main themes.

Phase 5: Defining and naming themes

This step involves identifying the essence of each theme and determining which elements of the data are captured by each theme (Braun & Clarke, 2006, p.22). Each theme was named and defined, and the researcher ensured that each theme had a clear purpose and focus.

Phase 6: Producing the report

This phase involves the final analysis and the write-up of the research findings. Braun and Clarke (2006, p.23) recommended that the narrative of the data should be presented in a way

that will convince the reader of the value and credibility of the analysis. The authors' advice was that it should be logical, concise, interesting and non-repetitive.

The thematic analysis process, as developed by Braun and Clarke (2006), set the foundation for the next stage, which is to narrate the themes to address the research goals. Coding was performed manually by reviewing the interview transcripts line by line to ensure a systematic and thorough approach. Initial codes were generated based on meaningful sections of text and these codes were then organised into themes. The development of themes was guided by both the coded transcripts and the interview questions, to ensure that the analysis remained aligned with the goals of the study. Figure 7.1 provides an illustration of the themes and codes resulting from the process.

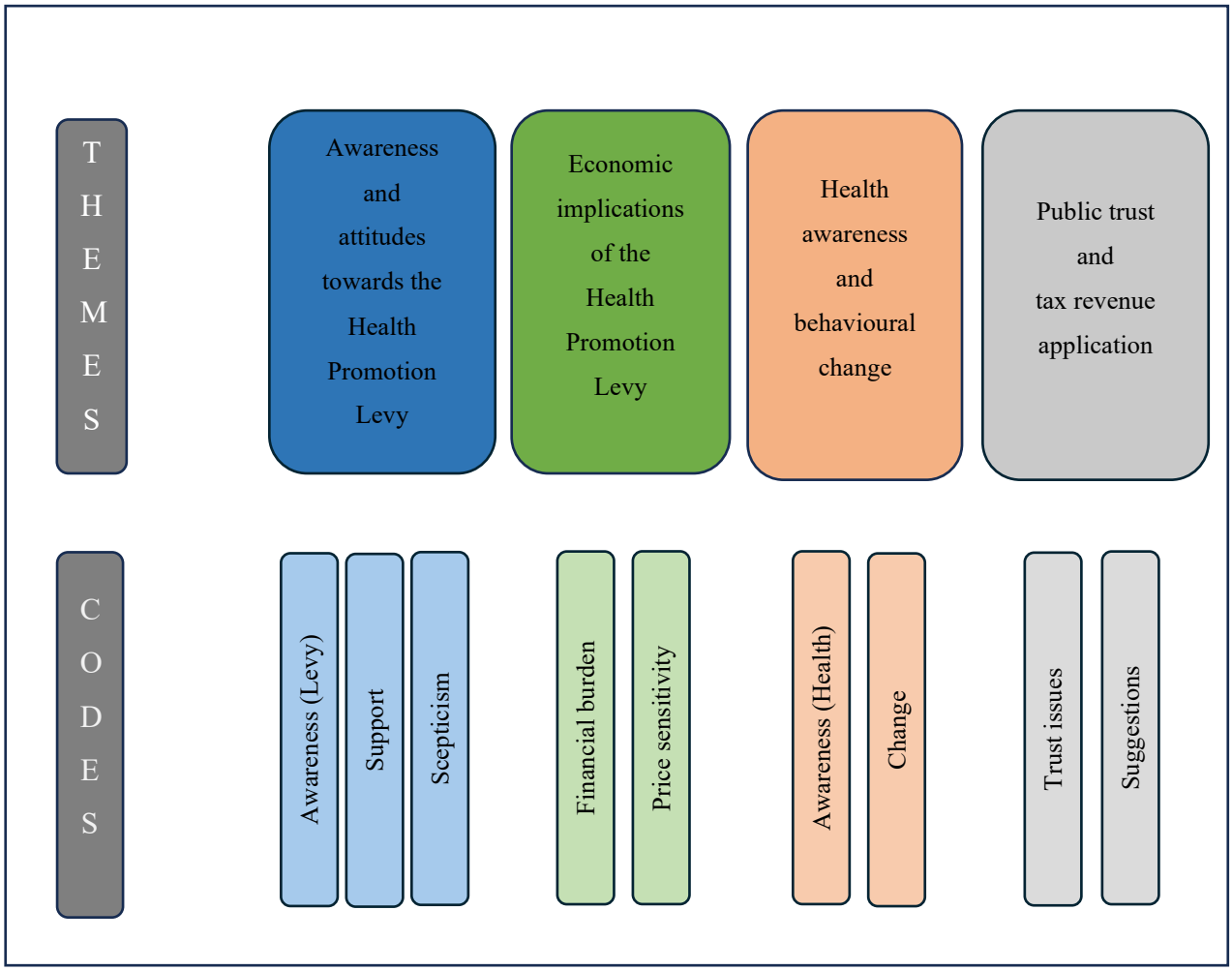

Figure 7.1 Illustration of themes and codes

Source: Own formulation

7.3.1 Awareness of and attitudes regarding the Health Promotion Levy

This theme captures parents' knowledge, perceptions and attitudes about the Levy and their perceptions of its effectiveness. Codes that contributed to this theme are awareness (of the Levy), support and scepticism. Participants showed varying levels of awareness of the Levy. Some participants only became aware of the Levy after becoming involved in the research study. One participant indicated that, "I am now since I took part in the study. I was not aware of it though, but I am now" [Participant A]. Other participants expressed a limited knowledge of the Levy, stating that, "I am a little bit familiar. I know it as a sugar tax" [Participant E], or "I think I am not so on top of it that I would love to be. So, I think I know very little" [Participant J]. A few participants showed a higher level of awareness. As one participant expressed it, "Yes, I've heard about it, and I've also read about it, and yeah, I am quite familiar with it" [Participant D]. Another participant said, "I know that a couple of years ago it was introduced. So, if you're referring to the sugar tax, yes, I'm aware of it" [Participant B].

The support that most of the respondents expressed for the Levy was linked to health benefits and promoting better dietary habits. Reflecting the importance of health consciousness, one participant stated, "Yes, because it's going to decrease the possibility of diabetes, obesity, all those things. Maybe make us more aware of what we are consuming" [Participant G]. Echoing similar sentiments, another participant stated, "I think we need to be very much more health conscious, and I think sugar is one of the worst things that we add to our lives, and we are not, I don't think people are totally aware of how bad this is" [Participant J]. Despite the support, a notable number of participants expressed concerns regarding the Levy. A participant [Participant F] pointed out her concern, stating:

> Yes, for health benefits, definitely. I do think that South Africa, if you look at the majority, especially with young kids, I think there is a problem, sugar wise, with the kids, so looking at the health benefit, definitely I am, because I think a lot of people will be able to think twice before they buy something. But I don't know if South Africa is able to take more tax than what they are already getting. So, I would lean more to yes, I am for it, but financially I think there's going to be more people that are going to struggle with it.

Another participant's concern related to the administration of the Levy. In response to the question on support for the Levy, the participant explained: "Yes, if it's administered correctly, I think it can make a big difference. But I think it should not be the only way that government

tries to address bad eating and drinking habits. I think it must be part of a larger programme driving that goal" [Participant C].

In contrast to this, one participant did not support the Levy, and argued, "I think the people in South Africa is already taxed enough, so any additional thing that is more expensive makes it more difficult for them to keep head above water in their household with the groceries" [Participant E].

Due to the addictive nature of sugar, some participants expressed scepticism about the effectiveness of the Levy. During the interview, Participant A elaborated:

> I think when people want to purchase something, I know some addicts that are addicted to coke or whatsoever, they will still purchase it irrespective of the price. I think it's got the same to do with levies on alcohol and cigarettes. So, if that is what you use, that's what you enjoy, the price might not be such a deterrent.

Supporting this view, another participant [Participant C] remarked:

> Given how addictive sugar is, I do not know if increasing the tax thereon will necessarily prohibit or reduce the usage of the product. I think it's the same with cigarettes. It's irrelevant how many taxes each year is added. If you're addicted to cigarettes, there's probably a chance that you will pay for it.

It became clear from this theme that the driving force behind the support for the Levy is the effect of sugar on people's health.

7.3.2 Economic implications of the Health Promotion Levy

Responses from participants highlighted parents' concerns about the economic impact on households caused by the Levy and reflected that they consider product cost when making purchasing decisions. Codes under the theme of the economic implications were the financial burden and price sensitivity of the Levy. One participant explained that the Levy imposes an additional financial strain on households: "the Levy means more money taken from the consumer, you know, the end user" and then elaborates, "In a sense it will be a good thing, because then manufacturers will use less sugar, but on the other hand it means the cost is passed on to the consumer" [Participant K]. Another participant expressed the concern that, "I think people in South Africa is already taxed enough, so any additional thing that is more expensive makes it more difficult for them to keep head above water in their household with the groceries" [Participant E].

Participants expressed a sensitivity towards the change in the price of a product when making purchasing decisions. One participant emphasised this point: “If it’s too expensive, I’m definitely not going to buy it. So, if whatever I normally buy, increases by five or ten rand, I will most likely go for a substitute” [Participant A]. Supporting this view, another participant remarked, “At the end of the day, the price is the one that’s mostly considered” [Participant E]. In line with this, one participant stated, “Well, as a single parent, money is a concern” [Participant D]. Participant F described her experience: “I think we all turn rands and cents around, so, yes, I look at the price. But, because I know what I am buying, I’ve been buying it all along, so I know what’s in it. But the majority of the time I look at the price.”

Two participants did not seem to be price sensitive regarding food products, indicating that they consider ingredients above price when deciding which items to purchase. As one participant expressed it, “I consider the ingredients of the product more. But I realise it’s not everybody, but for me, yes, I look at the ingredients” [Participant I].

Clearly consumers are sensitive to and responsive to price changes, which suggests that the consumption of sugar-sweetened beverages might decrease if the rate of the Levy increases sufficiently.

7.3.3 Health awareness and behavioural change

This theme revealed how parents’ understanding of health risks that are linked to sugar consumption and their awareness of the Levy influence their purchasing behaviour regarding sugar-sweetened beverages for their children. This theme includes the codes of awareness (health) and change. All the respondents indicated that they are aware of links between health conditions and the consumption of sugary beverages. During the interview, participant D elaborated, “I believe if my child can consume less, especially because she is ADD, less sugar consumption for her will be better, and will help that her medication will work better”. Reflecting on their journey the participant also commented: “My ex-husband used to drink two to four litres of Coca-Cola, the sugar version, per day and there was a stage where his sugar went up to between 20 and 24. So the minute he stopped using the sugar version, he also paid less for that, and then his sugar came down to about eight.”

Participant J described her experience, saying:

> Oh, it’s total poison in my mind. I mean, diabetes, overweight, tooth decay, all sorts of things. I think we actually don’t know about them all, but it’s just very, very bad overall.

> And me, being a middle-aged women, it's not good for my hormones, it's not good for my menopausal state that I'm in, post-menopause, it's very bad, you sleep bad, you have hot flashes and that's all connected to the sugary intake, yes.

The interview responses reflect a high level of awareness regarding the health implications of the consumption of sugar-sweetened beverages.

A noteworthy finding is that only one participant indicated that the implementation of the Levy caused her to rather opt for low sugar or no sugar beverages. As the participant expressed it: "The consumption of the beverages didn't go down. What went down was, I mean what changed was the choices in terms of what kind of beverage I chose. So now I no longer buy the full sugar beverages" [Participant B].

The inflation rate and the overall increase in the prices of products caused another participant to spend less on "sugary stuff" during the last two to three years than previously, but this change was not due to the implementation of the Levy in 2018. The majority of participants, however, indicated that there was no change in the consumption pattern of providing sugary beverages for their children after the implementation of the Levy in 2018.

When asked about the change in consumption pattern, a participant noted, "I don't think it changed at all. I think, you know, especially when it refers to children, they copy what you are doing, so I think if you are a parent that really looks after the eating and drinking habits of your child and of yourself, then that will spill over" [Participant C]. Another reason why participants indicated that there was no change in consumption was because either their children never liked sugar-sweetened beverages, or they still consume the same amounts as before the implementation of the Levy. As one participant said, "We don't actually like it, so we don't really buy it. From time to time, we'll drink it, but not really. Except my daughter, she drinks coke when she gets the chance" [Participant E]. Providing a similar perspective, one participant said, "Well, we don't normally drink sugary drinks in our home. We normally drink, except for my son, but we normally drink 100% juice that I thin with water" [Participant I].

From the analysis it is apparent that the implementation of the Levy had a minimal impact on parents' purchasing behaviour of sugar-sweetened beverages for their children. In cases where there were changes in consumer behaviour, it was either due to financial constraints, or for health reasons. From the analysis it became clear that some children are still consuming sugar-sweetened beverages when they get the chance, even though the parents are not buying it for them.

7.3.4 Public trust and tax revenue application

This theme focused on parents' perceptions of the government's ability to use the revenue received from the Levy effectively and captured parents' suggestions on how the government should utilise the funds it generates. The supporting codes are trust issues and suggestions. It is notable that even though there was no direct question during the interviews on public trust in the government, three of the participants highlighted their distrust in the government's ability to effectively administer tax revenue. Participant G expressed the concern that, "I don't actually know what they are doing with the money. It goes into the national revenue tax fund but are we aware of what they are doing with those specific money that goes in?". Expressing frustration, one participant remarked, "You know, my trust in our government is so low, I actually don't want them to levy it at all, because it gets misused" [Participant E]. In agreement with this view, another participant stated, "I'm sorry, but I don't have much faith in the government at the moment so I don't know if it will work in South Africa because of the corruption in our country" [Participant I].

Ten of the eleven participants agreed that tax revenue received from the Levy should be used for health promotion purposes. One participant did not support the Levy at all, stating, "I think this is just unnecessary and stupid" [Participant E]. Out of the ten participants, three participants suggested that the revenue from the Levy ought to be directed towards general health promotion. As Participant C expressed this: "Absolutely, to promote general well-being of the population, and specifically just for that goal now. Yes, and I would, like I mentioned in the first question as well, is I would like to see it as part of a broader approach to increase the health of the population".

One participant recommended using the revenue for medical research, "for diabetes in children and health risks for children" [Participant D]. Three participants proposed that the revenue should be allocated to subsidise school nutrition programs. As one participant said, "Schools that are struggling, help them to grow their own gardens, their own fruit and give them the opportunity to do that at school" [Participant A]. Another participant suggested, "I feel you need nutritious meals for your brain to work and develop, so I would definitely hope it goes in that direction" [Participant H]. In addition to healthy food, Participant K also suggested that "clean and pure water" should be accessible in schools. According to Participant G, the money ought to be directed towards funding sports programs at schools. Participant G also suggested that "they should have that money separate so that we can see what is happening with that

money and that it goes into the health of the children". One respondent expressed the opinion that the tax revenue should be used for education, stating, "They must teach children from a very, very young age" [Participant J]. It was suggested by Participant F that the revenue should be utilised to subsidise weight loss programmes for people struggling with obesity.

This analysis highlights the distrust in the government due to corruption, fraud and poor management of public funds and underscores the importance of the principle of transparency and accountability. The lack of confidence in the government's ability to efficiently utilise tax revenue can hinder the effectiveness of the Levy, as the public may question or resist tax policies.

The concept of earmarking revenue received from the Levy plays a critical role in acceptance of the Levy. The importance of the principle of efficiency is also highlighted in these findings.

7.4 CONCLUSION

The introduction to the chapter referred to the mixed-method approach that was adopted to address the goal of the research. Chapter Six dealt with the quantitative phase of the research and the present chapter described the qualitative phase of the research. The thematic analysis of the responses to the three open-ended questions in the questionnaire was presented first. A discussion of the six steps of thematic analysis developed by Braun and Clarke (2006) was presented. Lastly the data obtained from the interviews were analysed, using these six steps. Having analysed the interview data using the first five steps, in the sixth step the analysis was refined as illustrated in Figure 7.1 to four themes with the associated codes.

The data from both the open-ended questions in the questionnaire and the interview responses revealed mixed perceptions on the fairness and efficiency of the Levy. Although some respondents perceived the Levy to be fair, the majority expressed negativity or uncertainty, raising concerns such as its disproportionate impact on low-income groups, financial constraints, particularly in the context of high cost of living and the unemployment rate in South Africa, and the adverse effects on manufacturers and employment in the beverage industry. Similarly, perceptions of the Levy's efficiency were predominantly negative or uncertain. Respondents questioned the effectiveness of the Levy in influencing consumer behaviour, due to factors such as the low tax rate, inadequate awareness about the Levy, the lack of consumer education, and the non-availability of cheaper sugary alternatives compared to healthier alternatives. A lack of significant changes in consumer behaviour as a result of the

implementation of the Levy and a notable distrust in the government's accountability and transparency were also highlighted.

Only a small percentage of respondents viewed the government as accountable, with most expressing scepticism due to issues such as corruption, poor management, lack of transparency, and perceived misuse of funds. These findings suggest that public trust in the government's management of revenue received from the Levy is essential to increase support for the Levy. Respondents identified that support for the Levy would increase significantly if the revenue is earmarked for health promotion purposes, thus highlighting the importance of transparency and dedicated funding for public health initiatives.

The analysis also revealed that respondents are price-sensitive and responsive to increases in sugar-sweetened beverage prices, indicating the potential for consumption to decline if the rate at which the Levy is applied is increased sufficiently.

In the next chapter, the main findings of both the quantitative and qualitative phases of the research are summarised and linked to findings flowing from the literature review.

CHAPTER 8

SUMMARY AND ANALYSIS OF THE RESULTS OF THE RESEARCH

8.1 INTRODUCTION

This study is underpinned by the goal to investigate the fairness and effectiveness of the Levy, in the context of its likely success in reducing the intake of sugar, specifically by children. The study is guided by the sub-goals which are to determine whether the Levy is a good tax, compare the Levy to similar taxes in selected countries, determine parents' awareness and perceptions of the Levy, and make recommendations regarding changes to the Levy. In this chapter, the quantitative and the qualitative data analyses are summarised and compared. The chapter presents tabular summaries of the demographical data, and the responses to the closed-ended questions in the questionnaire, linking the responses to the questions to literature. The chapter then provides summaries of the analysis of the open-ended questions included in the questionnaire, and the four themes developed from the interview data.

Summaries of the results of the research are followed by an interpretation of the results, applying the *Health Belief Model of Behavior Change* to demonstrate that the six constructs of the Model (perceived susceptibility, perceived benefits, perceived barriers, self-efficacy and cues to action) comprehensively explain these results.

The main findings are then contextualised in a summary of the themes.

8.2 SUMMARY OF THE QUANTITATIVE DATA ANALYSIS

The quantitative data analysis in Chapter Six dealt with the demographical data in the questionnaire, followed by the closed-ended questions. Table 8.1 below summarises the demographical data, and Table 8.2 summarises the responses to the closed-ended questions, with links to the literature.

8.2.1 Demographical data

Table 8.1 below summarises the demographical data.

The preponderance of females, mainly biological mothers between the ages of 31 – 50 years, and the number of respondents with post-grade 12 education, would indicate the likelihood that these respondents would be aware of the health risks of sugar-sweetened beverages and provide

their children with fewer of these beverages. The relatively small number of children at school would indicate smaller families with greater financial ability to provide their children with healthy alternatives. On the other hand, the relatively large proportion of families with earnings below R15 000 may mean that alternative beverages are not affordable.

Table 8.1 Demographical data

QUESTION	DATA							
Gender	Male: 17%	Female: 83%						
Ethnicity	Black African: 42%	White: 52%	Coloured: 4%	Indian: 1%	Other: 1%			
Age distribution	Up to 20 yrs: 0.58%	21 to 30 yrs: 10.47%	31 to 40 yrs: 29.07%	41 to 50 yrs: 42.44%	51 to 60 yrs: 8.14%	> 60 yrs: 0.58%	No answer: 8.72%	
Monthly household income	> R60 000: 18.6%	R45 001 – R60 000: 10.47%	R30 001 – R45 000: 12.21%	R15 001 – R30 000: 9.88%	< R15 000: 30.23%	No answer: 18.6%		
Education	Postgraduate: 31.98%	Undergraduate: 4.07%	Diploma: 12.79%	Certificate: 9.88%	Grade 12/ Matric: 26.16%	Grade 10/ Standard 8: 8.14%	Grade 7/ Standard 5: 6.4%	No answer: 0.58%
Relationship to child/children	Biological mother: 71.51%	Biological father: 11.63%	Aunt/Uncle: 5.23%	Grandmother: 1.74%	Stepmother/ Stepfather: 3.49%	Legal guardian: 0.58%	Other: 5.82%	
No. of children attending school	1: 30.23%	2: 51.16%	3: 11.63%	4: 6.40%	> 4: 0.58%			
Children's ages in years	5 – 9: 30%	10 – 13: 30%	14 – 18: 40%					

Source: Own formulation

8.2.2 Closed-ended questions

Table 8.2 summarises the responses to the closed-ended questions, providing links to the literature discussed in Chapters Two to Five.

Table 8.2 Summary of closed-ended questions

NO.	QUESTION	RESPONSES	LINK TO LITERATURE
1.	Are you aware what a non-communicable disease is?	Yes: 44.77% No: 36.63% Unsure: 18.02% No answer: 0.58%	World Health Organisation, 2022b, p.1 National Development Plan, 2012, p.333 National Department of Health, 2015, p.10
2.	Are you familiar with the term 'sugar tax'?	Yes: 62.21% No: 30.23% Unsure: 7.56%	National Treasury, 2016a, p.16
3.	Are you familiar with the term 'Health Promotion Levy'?	Yes: 44.19% No: 40.69% Unsure: 15.12%	Chapter VB of the Customs and Excise Act, No.91 of 1964 National Treasury, 2018b, p.47
4.	Has a tax on sugar-sweetened beverages been introduced in South Africa?	Yes: 55.23% No: 6.98% Unsure: 37.21% No answer: 0.58%	Chapter VB of the Customs and Excise Act, No.91 of 1964 Cawley, *et al*., 2019a, p.333 Wrottesley, *et al*., 2020
5.	Does the tuck shop of the school your child(ren) attend(s) sell sugar-sweetened beverages?	Yes: 78.49% No: 7.56% Unsure: 13.95%	
6.	Do you provide your child(ren) with money for the tuck shop where he/she/they could buy sugar-sweetened beverages?	Yes: 68.02% No: 31.98%	
7.	I provide my child(ren) with money for the tuck shop where he/she/they can buy sugar-sweetened beverages on the following basis:	Never: 26.16% Less than once a week: 28.49% Once a week: 22.68% Twice a week: 8.14% More than twice a week: 4.65%	

		Daily: 9.88%	
8.	I, myself, consume the following amount of sugar-sweetened beverages on a weekly basis:	None: 18% 0 – 1 litre: 46% 1 – 2 litres: 23% 2 – 3 litres: 5% 3 – 4 litres: 3% More than 4 litres: 5%	
9.	Do you perceive the current design of the Health Promotion Levy to be fair?	Yes: 33.14% No: 27.91% Unsure: 38.37% No answer: 0.58%	Barnhill & King, 2013, p.117 Cawley, *et al*., 2019a, p.320 Falbe, 2020, p.3 Lombard & Koekemoer, 2020, p.68 Ruan, 2021, p.511 Véliz, *et al*., 2019
10.	Do you perceive the current design of the Health Promotion Levy to be efficient?	Yes: 27.33% No: 36.04% Unsure: 35.47% No answer: 1.16%	Bird & Wilkie, 2012, p.9 Francis, Marron, and Rueben, 2016 Studdert, Flanders & Mello, 2015, p.5
11.	Do you believe the government is accountable and transparent regarding the revenue received from the Health Promotion Levy?	Yes: 15.69% No: 45.93% Unsure: 36.05% No answer: 2.33%	Davis Tax Committee, 2016, p.14 Holtzman, 2007, p.418 Mirrlees, 2011, p.34 Murphy and Baker, 2023, p.1 Rawlins, 2008, p.16
12.	Frequent consumption of sugar-sweetened beverages increases the risk of cavities in children's teeth.	Strongly disagree: 1.17% Disagree: 2.92% Neutral: 4.68% Agree: 36.26% Strongly agree: 54.97%	Rogers, *et al*., 2023a South African Paediatric Association, 2017, p.1

13.	Frequent consumption of sugar-sweetened beverages increases the risk of obesity.	Strongly disagree: 1.75% Disagree: 1.17% Neutral: 6.43% Agree: 34.51% Strongly agree: 56.14%	Association for Dietetics in South Africa, 2017, p.1 South African Paediatric Association, 2017, p.1 World Health Organisation, 2015, p.1
14.	Frequent consumption of sugar-sweetened beverages increases the risk of diabetes.	Strongly disagree: 0.58% Disagree: 2.93% Neutral: 6.43% Agree: 36.84% Strongly agree: 53.22%	South African Paediatric Association, 2017, p.1 World Health Organisation, 2015, p.1
15.	In my opinion, other parents make decisions about drinks they buy for their children based on the ingredients rather than the price of the drink.	Strongly disagree: 7.02% Disagree: 26.31% Neutral: 27.49% Agree: 32.16% Strongly agree: 7.02%	
16.	In my opinion, other parents make decisions about drinks they buy for their children based on the price rather than the ingredients of the drink.	Strongly disagree: 2.34% Disagree: 11.70% Neutral: 21.05% Agree: 50.29% Strongly agree: 14.62%	Hofman, *et al*., 2021, p.5
17.	In my opinion, other parents buy sugar-sweetened beverages for their children without realizing the long-term impact of the consumption on their health.	Strongly disagree: 0.59% Disagree: 6.43% Neutral: 11.11% Agree: 50.29% Strongly agree: 31.58%	Cawley, 2004, p.120
18.	In my opinion, the announcement (before the actual implementation) of the Health Promotion Levy prompted other parents to purchase fewer sugar-sweetened drinks for their children.	Strongly disagree: 7.60% Disagree: 23.98% Neutral: 36.84% Agree: 27.49% Strongly agree: 4.09%	Wrottesley, *et al*., 2020
19.	In my opinion, the implementation of the Health Promotion Levy prompted other parents to purchase fewer sugar-sweetened drinks for their children.	Strongly disagree: 4.68% Disagree: 24.56% Neutral: 33.33% Agree: 30.41% Strongly agree: 7.02%	

20.	In my opinion, the introduction of the Health Promotion Levy had no impact on how many sugar-sweetened beverages other parents buy for their children.	Strongly disagree: 2.34% Disagree: 14.03% Neutral: 30.99% Agree: 40.94% Strongly agree: 11.70%	
21.	I make decisions about drinks I buy for my child(ren) based on the ingredients in the drink.	Strongly disagree: 1.75% Disagree: 16.96% Neutral: 18.13% Agree: 42.69% Strongly agree: 20.47%	
22.	I make decisions about drinks I buy for my child(ren) based on the price of the drink.	Strongly disagree: 4.68% Disagree: 20.47% Neutral: 20.47% Agree: 43.27% Strongly agree: 11.11%	Hofman, *et al*., 2021, p.5
23.	The announcement (before the actual implementation) of the Health Promotion Levy prompted me to purchase fewer sugar-sweetened drinks for my child(ren).	Strongly disagree: 9.36% Disagree: 35.09% Neutral: 27.48% Agree: 22.22% Strongly agree: 5.85%	Wrottesley, *et al*., 2020
24.	The implementation of the Health Promotion Levy prompted me to purchase fewer sugar-sweetened drinks for my child(ren).	Strongly disagree: 7.6% Disagree: 30.99% Neutral: 22.22% Agree: 32.75% Strongly agree: 6.44%	
25.	The announcement (before the actual implementation) of the Health Promotion Levy prompted me to purchase more drinks like diet soda, pure fruit juice, milk or water for my child(ren).	Strongly disagree: 8.72% Disagree: 36.04% Neutral: 19.19% Agree: 24.42% Strongly agree: 11.63%	Wrottesley, *et al*., 2020
26.	The implementation of the Health Promotion Levy prompted me to purchase more drinks like	Strongly disagree: 7.6% Disagree: 32.17% Neutral: 19.88% Agree: 30.99% Strongly agree: 9.36%	

	diet soda, pure fruit juice, milk or water for my child(ren).		
27.	The introduction of the Health Promotion Levy had no impact on how many sugar-sweetened beverages I buy for my child(ren).	Strongly disagree: 4.65% Disagree: 21.51% Neutral: 18.61% Agree: 41.28% Strongly agree: 13.95%	
28.	I believe that, by imposing a sugar tax on sugar-sweetened beverages, the government limits taxpayers' rights to make their own choices.	Strongly disagree: 6.98% Disagree: 16.86% Neutral: 32.56% Agree: 31.97% Strongly agree: 11.63%	Cawley, *et al*., 2019a, p.320 Véliz, *et al*., 2019, p.23
29.	Currently, the South African government is not earmarking the revenue received from the levy for health promotion purposes but is using the revenue for the country's general budget. Considering this, I support the implementation of the Health Promotion Levy regardless of how the revenue received is being used by the government.	Strongly disagree: 18.6% Disagree: 20.35% Neutral: 24.42% Agree: 26.16% Strongly agree: 10.47%	Association of Chartered Certified Accountants, 2011, p.6 Green & Pilane, 2019 Eykelenboom, *et al*., 2019, p.2
30.	I will only support the implementation of the Health Promotion Levy IF the total tax revenue will be earmarked for health promotion purposes.	Strongly disagree: 2.34% Disagree: 8.19% Neutral: 16.37% Agree: 43.86% Strongly agree: 29.24%	Campbell, 2018, p.372 Sarda, *et al*., 2022, p.3249 Walker, 2021
31.	Recent research indicates that the current rate of the Health Promotion Levy does not have a meaningful effect in preventing tooth decay, obesity, and diabetes. If the government was to propose an increase in the Health Promotion Levy, it will result in a 20% increase in the retail	Strongly disagree: 15.2% Disagree: 21.05% Neutral: 21.64% Agree: 27.49% Strongly agree: 14.62%	Association for Dietetics in South Africa Chatelan, *et al*., 2022 Healthy Living Alliance, 2024b Mbalati, 2021 Saxena, *et al*., 2019 South African Paediatric Association, 2017, p.2

	price of sugar-sweetened beverages. This means that a 2-liter soda drink which costs R27 before the increase will cost R32.40 after the increase of the Health Promotion Levy. Considering this, I support an increase in the Health Promotion Levy.		
32.	I will only support an increase in the Health Promotion Levy on condition that the total tax revenue is earmarked for health promotion purposes.	Strongly disagree: 3.53% Disagree: 8.82% Neutral: 14.12% Agree: 45.88% Strongly agree: 27.65%	Sarda, *et al*., 2022, p.3249 Le Bodo, *et al*., 2022, p.588 Thow, *et al*., 2022

Source: Own formulation

8.3 SUMMARY OF THE QUALITATIVE DATA ANALYSIS

The qualitative data analysis in Chapter Seven dealt first with the responses to the three open-ended questions in the questionnaire, followed by the responses to the semi-structured interviews. Table 8.3 below summarises the analysis of the open-ended questions, and Table 8.4 sets out the four themes, each with its own codes, into which the data from the interviews were summarised, and the responses of interviewees analysed under the codes.

8.3.1 Open-ended questions

Table 8.3 summarises the analysis of the open-ended questions.

Table 8.3 Summary of open-ended questions

THEME	RESPONSES	POSITIVE THEMES	NEGATIVE THEMES
Perceptions regarding the fairness of the Levy	57 respondents (33.14%) answered "Yes" 48 respondents (27.91%) answered "No"	• Fair, as the Levy is based on consumption • Encourages healthier alternatives • Focuses on children's health • Reduces the burden of diseases	• Impact on low-income groups • Ineffective impact on consumer behaviour • Burden on the economy and being over-taxed • Impact on industry and employment
Uncertainty regarding the Levy and its fairness	66 respondents (38.37%) answered "Unsure" 1 participant (0.58%) did not answer	• Lack of awareness about the Levy • Uncertainty about the details of the Levy	
Perceptions regarding the efficiency of the Levy	47 respondents (27.33%) answered "Yes" 62 respondents (36.04%) answered "No"	• Health benefits • Change in consumer behaviour and decision making • Increased awareness	• Insufficient change in consumer behaviour • Lack of public awareness • Low tax rate • Availability of cheaper sugary alternatives • Distrust in government • Addiction and habits
Uncertainty regarding the efficiency of the Levy	61 respondents (35.47%) answered "Unsure" 2 respondents (1.16%) did not answer	• Uncertainty regarding the impact • Lack of awareness about the Levy	
Perceptions regarding the government's transparency and accountability	27 respondents (15.69%) answered "Yes", the government is transparent and accountable	• Clear tax rules • Communication and engagement • Healthcare funding and social support	• Corruption and distrust • Lack of communication from government • Lack of awareness about the Levy

	79 respondents (45.93%) answered "No"		• Mismanagement of revenue
Uncertainty regarding the government's transparency and accountability	62 respondents (36.05%) answered "Unsure" 4 respondents (2.33%) did not answer	• Uncertainty regarding lack of communication from government • Uncertainty whether government can be trusted • Lack of awareness	

Source: Own formulation

8.3.2 Analysis of interview responses

Table 8.4 sets out the four themes, each with its own codes, and responses of the interviewees, analysed according to the codes.

Table 8.4 Summary of interview responses

THEMES	CODES	RESPONSES
Awareness and attitudes towards the Health Promotion Levy	• Awareness • Support • Scepticism	Varying levels of awareness Support of the majority linked to health benefits and better dietary habits A number of interviewees expressed concerns, including ➢ financial burden, ➢ administrative problems, ➢ it should be part of a larger programme to address bad eating and drinking habits, ➢ people are over-taxed, and ➢ the addiction to sugar will cause people to continue buying sugary beverages
Economic implications of the Health Promotion Levy	• Financial burden • Price sensitivity	The Levy imposes an additional financial strain on households

		Participants expressed a sensitivity towards the change in the price of a product when making purchasing decisions
Health awareness and behavioural change	• Health awareness • Change	A high level of parent awareness regarding the health implications of the consumption of sugar-sweetened beverages was reflected The implementation of the Levy had a minimal impact on parents' purchasing behaviour of sugar-sweetened beverages for their children. In cases where there were changes in consumer behaviour, it was either due to financial constraints, or for health reasons
Public trust and tax revenue application	• Trust issues • Suggestions	It is notable that even though there was no direct question during the interviews on public trust in the government, three of the participants highlighted their distrust in the government's ability to effectively administer tax revenue Ten of the eleven participants agreed that tax revenue received from the Levy should be used for health promotion purposes, for example: ➢ general health promotion ➢ medical research focused on children ➢ subsidising school nutrition programmes ➢ access to clean water in schools ➢ funding sports programs at schools ➢ health education from a young age ➢ weight loss programmes

Source: Own formulation

8.4 CONSOLIDATION OF THEMES FROM ALL PHASES OF THE RESEARCH

In this section the themes emerging from all the phases of the research are compared and consolidated.

8.4.1 Sugar tax in selected countries

Studies by Azaïs-Braesco, *et al*. (2017) and Chatelan, *et al*. (2022) in Belgium, as well as a study by Hernández, *et al*. (2023) in Mexico, where tax on sugar-sweetened beverages is based on volume and not added sugar content, supported the study of Francis, Marron, and Rueben (2016) who argued that taxing sugar-sweetened beverages based on sugar content rather than volume is the most effective tax design if the purpose of the tax policy is to promote public health, as it will encourage manufacturers to reformulate their products, and result in reduced sugar consumption. The amendment of the French soda tax to calculate the tax liability based on the content of added sugar in soft drinks rather than on volume, supports this argument. The literature established that a sugar tax is best supported by the public if the revenue from the tax is earmarked to provide affordable healthy food alternatives, or for other health initiatives. In South Africa, the Levy is based on the amount of added sugar content in a drink rather than tax based on the volume of a drink, which is therefore effective from a tax design perspective. The Levy might not be perceived as effective, however, as the tax rate of 2.21cents/gram of the sugar content that exceeds 4 grams/100ml is too low, and the revenue collected from the Levy is not earmarked for health purposes but used for the general budget.

From the discussion of sugar tax in the selected countries, it was clear that although lower sugar tax rates do reduce purchases of sugar-sweetened beverages and may reduce diet-related diseases, the tax rate imposed should increase the price of sugary beverages by at least 20% to have the maximum impact on the fight against non-communicable diseases.

In Table 8.2, regarding the question whether respondents would support an increase in the effective price of sugar-sweetened beverages by 20% (Item 31), 42% either agreed or strongly agreed, 36% either disagreed or strongly disagreed, the remainder being neutral. In Table 8.4, in relation to awareness of and attitudes towards the Levy, interviewees referred to the financial burden on consumers and the fact that people are over-taxed. In relation to the economic impact, the interviewees expressed the concern that the Levy imposes an additional financial strain on households. It appears that there is only a moderate acceptance of an increase in the Levy.

In Table 8.2 regarding the question of support for an increase in the Health Promotion Levy on condition that the total tax revenue is earmarked for health promotion purposes (Item 32), respondents expressed strong support, with 74% either agreeing or strongly agreeing. As was clear from the literature and the responses to the questionnaire, the earmarking of the Levy revenue is important to consumers.

8.4.2 Principles of a good tax system

Adam Smith (1776) in his work *An Inquiry into the Nature and Causes of the Wealth of Nations,* sets out four canons of taxation, namely, equity, certainty, convenience, and economy. Mirrlees (2011, p.22), Alley and Bentley (2005), and Lombard and Koekemoer (2020) suggested amendments to these principles. Based on these amendments, the following tax principles were adopted for the present research: equity and fairness; certainty and simplicity; efficiency and low administration costs; and transparency and accountability.

Equity and fairness

In correcting market failures, equity and fairness can be defensible from the perspective of the government. Currently, the Levy is only applicable to sugar-sweetened beverages, excluding unsweetened milk products and 100% fruit juices. The literature suggests that taxing only a specific category and not all food items containing sugar is perceived as unfair by consumers and the sugar industry.

To the closed-ended question in the questionnaire in Table 8.2, "Do you perceive the current design of the Health Promotion Levy to be fair?" (Item 9), 33% answered "yes", 28% answered "no", and the others were neutral, with a few having failed to answer. In Table 8.3, which documented the open-ended questions in the questionnaire, the reasons for the positive responses were "fair, as the Levy is based on consumption", "encourages healthier alternatives", "focuses on children's health", and "reduces the burden of diseases". The reasons for the negative responses were "impact on low-income groups", "ineffective impact on consumer behaviour", "burden on the economy and being over-taxed", and "impact on industry and employment". The reasons for the uncertain responses were "lack of awareness about the Levy" and "uncertainty about the details of the Levy".

There were clearly mixed responses by participants regarding the equity and fairness of the Levy.

Certainty and simplicity

The levy is self-assessed monthly using an excise return and paid to SARS via e-filing. Technology and the existing infrastructure are used, which promotes simplicity and certainty. The principles of certainty and simplicity are not relevant from the perspective of consumers, as they only pay the higher price of the sugar-sweetened beverages.

There were no questions in the questionnaire relating to the certainty and simplicity of the Levy, and no respondents or interviewees raised this point.

Efficiency and low administration costs

Although the Levy uses existing infrastructure, which promotes low administration costs, and the Levy based on added sugar content promotes efficiency, the pass-through tax rate of 7.7% is too low to make a meaningful impact on consumer behaviour. By taxing only a specific category of beverage, consumers might be encouraged to substitute a taxed item with another nutrient-free non-taxed item, which will jeopardise the principle of efficiency. The Levy is not earmarked for healthcare initiatives, which further jeopardises the principle of efficiency as it will negatively influence consumers' support for the Levy (refer also to the discussion of transparency and accountability below, and Items 29 and 30 in Table 8.2).

Table 8.2 (Item 10) sets out the responses to the question "Do you perceive the current design of the Health Promotion Levy to be efficient?" "Yes" responses amounted to 28%, "no" responses 36%, "unsure" responses 36%, and no answer 1%.

As reflected in Table 8.3, reasons for positive responses were "health benefits", "change in consumer behaviour and decision making", and "increased awareness". Reasons for negative responses were "insufficient change in consumer behaviour", "lack of public awareness", "low tax rate", "availability of cheaper sugary alternatives", "distrust in government", and "addiction and habits". Reasons for uncertain responses were "uncertainty regarding the impact" and "lack of awareness about the Levy". Interviewees did not raise a concern relating to the efficiency of the Levy.

There were mixed responses to the question of the efficiency of the Levy, with negative responses outweighing the positive responses, and with many respondents being unsure.

Transparency and accountability

Transparency and accountability are achieved when expenditure budgets are clear, and taxpayers can see where the tax revenue is being spent. Revenue raised by the Levy is not earmarked for health initiatives and there is no transparency or accountability regarding where the money is being spent.

Table 8.2 (Item 11) provides the responses to the closed-ended question in the questionnaire "Do you believe the government is accountable and transparent regarding the revenue received from the Health Promotion Levy?" There were 16% "yes" answers, 46% "no" answers, 36% were unsure, and 2% did not answer. Item 29 documents the support for the implementation of the Health Promotion Levy regardless of how the revenue received is being used by the government. Thirty-seven percent of the respondents agreed or strongly agreed that they would support the levy, 39% disagreed or strongly disagreed, with 24% remaining neutral. The responses to the question "Would you support the implementation of the Health Promotion Levy IF the total tax revenue will be earmarked for health promotion purposes" (Item 30) indicated that 73% of the respondents agreed or strongly agreed, 11% disagreed or strongly disagreed, and 16% were neutral.

In Table 8.3, the open-ended questions in the questionnaire, the reasons for the positive response to the concern of transparency and accountability were "clear tax rules", "communication and engagement", and "healthcare funding and social support". The reasons for the negative responses were "corruption and distrust", "lack of communication from government", "lack of awareness about the Levy", and "mismanagement of revenue". There were 62 (36%) responses in relation to "uncertainty regarding the government's transparency and accountability", and the reasons were "uncertainty regarding lack of communication from government", "uncertainty whether government can be trusted", and "lack of awareness".

The interview responses reflected in Table 8.4 highlighted a lack of public trust in the government and the application of tax revenue. Although there was no direct question on public trust in the government in the interview schedule, three of the participants voiced their distrust in the government's ability to effectively administer tax revenue, and ten of the eleven participants agreed that tax revenue received from the Levy should be used for health promotion purposes.

The analysis of the data revealed a strong distrust in the government. Issues raised were the lack of transparency of the process in introducing the Levy, doubt regarding government's

ability to effectively administer the Levy, scepticism regarding accountability for how the Levy funds are spent, and perceptions of corruption in government. There was strong support for the Levy, if the funds were earmarked for health-related programmes.

8.4.3 Other themes

The themes developed from responses to questions in the questionnaire and interviewee responses are summarised below.

Awareness of what a non-communicable disease is, and the effect of sugar-sweetened beverages

The analysis in Table 8.2 of the responses to the closed ended question in the questionnaire (Item 1): "Are you aware what a non-communicable disease is?", indicated that 55% of respondents were unsure or responded "no", with only 45% stating "yes". Despite the majority not understanding the term "non-communicable disease", Items 12 to 14 in the table reflected almost total agreement that the consumption of sugary sweetened beverages leads to tooth decay in children, obesity and an increased risk of diabetes. The responses of interviewees (Table 8.4) revealed a high level of awareness regarding the health implications of the consumption of sugar-sweetened beverages.

In Table 8.2 (Item 17), to the statement "In my opinion, other parents buy sugar-sweetened beverages for their children without realizing the long-term impact of the consumption on their health", 82% of respondents agreed or strongly agreed. This implies that respondents believe that other parents are not aware of the adverse health implications.

Familiarity with the terminology and whether a sugar tax has been introduced

Items 2 to 4 in Table 8.2 revealed that 62% of respondents were familiar with the term "sugar tax", while only 44% were familiar with the term "Health Promotion Levy". Only 55% of the respondents were aware that a tax on sugar-sweetened beverages had been introduced in South Africa. The lack of awareness may point to poor communication by government when the Levy was introduced. The fact that 45% of respondents to the questionnaire were unaware of the imposition of the tax may be a reason for the relatively small change in the behaviour regarding the consumption of these beverages.

Consumption of sugar-sweetened beverages

The responses summarised in Items 5 to 8 in Table 8.2 reveal that:

- Most of the school tuck shops sell sugar-sweetened beverages, and most parents/guardians provide their children with money to be spent at the tuck shop, but 77% of the respondents provide money to be spent only once a week or less.
- Sixty-four percent of parents or guardians themselves consume one litre or less of sugar-sweetened beverages weekly.

From the responses it appears that family consumption of sugar-sweetened beverages is relatively low.

Purchases of sugar-sweetened beverages

Sixty-three percent of respondents claimed that they make decisions about drinks they buy for their child(ren) based on the ingredients in the drink, but 55% of respondents indicated that they make decisions about drinks they buy for their child(ren) was based on the price of the drink (Items 21 and 22 in table 8.2). These responses appear to be contradictory.

Regarding respondents' opinions about other parents (Items 15 and 16), about one-third believed that other parents make decisions about drinks they buy for their children based on the ingredients rather than the price of the drink, one-third were neutral, and one-third disagreed. For the statement "in my opinion, other parents make decisions about drinks they buy for their children based on the price rather than the ingredients of the drink", the majority responded positively. The two sets of responses are again somewhat contradictory.

Change in behaviour of parents and guardians

Regarding the change in behaviour of parents and guardians (Item 24 of Table 8.2), an equal percentage of respondents agreed or disagreed that the implementation of the Health Promotion Levy prompted them to purchase fewer sugar-sweetened drinks for their children.

The interviewees' responses classified under the theme "health awareness and behavioural change" in Table 8.4, indicated that the implementation of the Levy had a minimal impact on parents' and guardians' purchasing behaviour of sugar-sweetened beverages for their children. In cases where there were changes in consumer behaviour, it was either due to financial constraints, or for health reasons. This seems to confirm the responses to the questionnaire regarding a change in behaviour, where positive and negative responses to the questionnaire were almost equal.

Announcement and implementation of the Health Promotion Levy

Almost half of the respondents disagreed that the announcement (before the actual implementation) of the Health Promotion Levy prompted them to purchase fewer sugar-sweetened drinks for their children (Item 23 of Table 8.2), and almost half disagreed that the announcement (before the actual implementation) of the Health Promotion Levy prompted them to purchase more drinks like diet soda, pure fruit juice, milk or water for their children" (Item 45). Once the Levy was introduced, an equal number of respondents agreed or disagreed that the implementation of the Health Promotion Levy prompted them to purchase fewer sugar-sweetened drinks for their children (Item 24). And an equal number of respondents agreed or disagreed that the implementation of the Health Promotion Levy prompted them to purchase more drinks like diet soda, pure fruit juice, milk or water for their children (Item 27)

In response to the statement "In my opinion, the announcement (before the actual implementation) of the Health Promotion Levy prompted other parents to purchase fewer sugar-sweetened drinks for their children" (Item 18 of Table 8.2), an equal number of respondents agreed or disagreed. An almost equal number of respondents agreed or disagreed that the implementation of the Health Promotion Levy prompted other parents to purchase fewer sugar-sweetened drinks for their children (Item 19). More than half of the respondents agreed that the introduction of the Health Promotion Levy had no impact on how many sugar-sweetened beverages other parents buy for their children (Item 20).

The announcement and actual implementation of the Levy, in the opinion of the respondents to the questionnaire, appears to have only marginally prompted them and other parents to reduce their purchases of sugar-sweetened drinks for their children.

Table 8.4 revealed that interviewees believed that the implementation of the Levy had a minimal impact on parents' purchasing behaviour of sugar-sweetened beverages for their children; in cases where there were changes in consumer behaviour, it was either due to financial constraints, or for health reasons.

Limit to taxpayers' rights

Finally, the statement "I believe that, by imposing a sugar tax on sugar-sweetened beverages, the government limits taxpayers' rights to make their own choices" (Item 28), received 24% disagree or strongly disagree responses, 44% agree or strongly agree, and 32% neutral.

8.4.4 Associations

Section 6.4 of Chapter Six discussed three groups of associations between variables, identified using a Chi-square test.

Associations with awareness of non-communicable diseases

- A statistically significant association was found between awareness of non-communicable diseases and gender. The demographic analysis also indicated that female respondents demonstrated higher levels of awareness compared to males.
- A statistically significant association was found between awareness of non-communicable diseases and income suggesting that individuals earning higher levels of income demonstrated increased awareness.
- A statistically significant association was found between awareness of non-communicable diseases and levels of education. According to the demographic analysis, respondents with higher education levels showed increased awareness.

Associations with respondents' own consumption levels of sugar-sweetened beverages

- A statistically significant association was found between respondents' own consumption of sugar-sweetened beverages and providing children with money for the tuck shop. This association is to be expected, as respondents consuming larger quantities of sugar-sweetened beverages are more likely to provide their children with money to be spent in the school tuck shop, possibly to be spent on sugar-sweetened beverages.
- A statistically significant association was found between respondents' own consumption of sugar-sweetened beverages and gender. Responses to the questionnaire indicated that males consumed a greater quantity of sugar-sweetened beverages than females.
- A statistically significant association was found between respondents' own consumption of sugar-sweetened beverages and race. According to the questionnaire responses, population groups other than the white group consumed a larger quantity of sugar-sweetened beverages.
- A statistically significant association was found between respondents' own consumption of sugar-sweetened beverages and levels of income. According to the demographic analysis a relatively high proportion of respondents earn a fairly high monthly income.

Association with respondents' perceptions of the efficiency of the Levy and their change in purchasing behaviour

- A statistically significant association was found between respondents' perceptions of the Levy and their change in purchasing behaviour. According to the analysis in Tables 8.2 and 8.4 above, the perceptions of the respondents and interviewees regarding whether the Levy is a "good" tax, were weak.

8.5 INTERPRETATION OF THE RESULTS

Tables 8.2, 8.3 and 8.4 provide summaries of the responses of participants to the closed-ended questions in the questionnaire, the open-ended questions in the questionnaire and the responses of the interviewees. These responses are interpreted in terms of the six constructs of the *Health Belief Model of Behavior Change* (Alyafei & Easton-Carr, 2024, pp.1-7).

8.5.1 The six constructs of the *Health Belief Model of Behavior Change*

The six constructs and the explanation of the constructs (Alyafei & Easton-Carr, 2024: p.2) are as follows:

> **Perceived susceptibility:** assessing the probability of acquiring an illness.
>
> **Perceived severity:** understanding the severity of the illness [or] condition and what would happen if no additional action is taken.
>
> **Perceived benefits:** how the effectiveness of various available actions to reduce the risk of illness are perceived.
>
> **Perceived barriers:** obstacles to performing a recommended health action that may stop one from doing what is recommended.
>
> **Self-efficacy:** an individual's belief in their capacity to perform a specific behaviour or task effectively. It is also related to the likelihood of a person engaging in a desired behaviour.
>
> **Cues to action:** whether from one's surroundings or subjective experiences**;** specific cues can influence the actions one takes … stimuli that initiate the decision-making process to embrace a recommended health intervention … either internal or external.

The *Health Belief Model of Behavior Change* provides a framework for understanding how parents and guardians may respond to the threat posed by their or their children's consumption of sugar-sweetened beverages. The constructs of the *Health Belief Model of Behavior Change* could therefore apply as follows:

- Perceived susceptibility: parents and guardians who consume sugar-sweetened beverages may perceive that they or their children for whom they provide these beverages may suffer the associated health problems or undesirable outcomes resulting from consuming high levels of sugar.
- Perceived severity: parents and guardians may understand the severity of non-communicable diseases and the relationship between these diseases and the consumption of sugar-sweetened beverages.
- Perceived benefits: parents and guardians may understand that there are benefits from ceasing to consume sugar-sweetened beverages.
- Perceived barriers: parents and guardians may believe that there are obstacles that prevent them from reducing their consumption of sugar-sweetened beverages or their children's consumption of these beverages.
- Self-efficacy: parents and guardians may doubt their ability and their capacity to adhere to the goal of consuming or providing their children with fewer sugar-sweetened beverages.
- Cues to action: parents and guardians may react to internal or external cues by reducing their or their children's consumption of sugar-sweetened beverages.

The constructs of the *Health Belief Model of Behavior Change* are therefore used investigate whether parents or guardians perceive the health benefits of ceasing to consume sugar-sweetened beverages or providing their children with these beverages, and to interpret the results of the study in terms of the responses of the participants in the research.

8.5.2 In the context of the imposition of the Levy

The fact that a Levy has been introduced that has encouraged manufacturers to reduce the sugar content of their beverages, together with parents' and guardians' perceptions of the adverse consequences of consuming sugar-sweetened beverages and the benefits of reducing their consumption, may encourage parents and guardians to provide these newly reformulated beverages for their children. The increase in price resulting from the Levy may encourage them to provide their children with alternative healthier beverages. Parents and guardians may, however, be discouraged by perceived obstacles to a change in behaviour, such as the price of

alternative beverages or even the fact that sugar-sweetened beverages are freely available to children in school tuckshops.

8.5.3 Interpretation of the results

Table 8.5 below presents an interpretation of the responses of the participants to the questionnaire and the interviews, based on the constructs of the *Health Belief Model of Behavior Change*.

Table 8.5: Interpretation of the quantitative and qualitative results

HEALTH BELIEF MODEL OF BEHAVIOR CHANGE	PARTICIPANT REPONSES	INTERPRETATION
Perceived susceptibility	Table 8.2, Item 12: Frequent consumption of sugar-sweetened beverages increases the risk of cavities in children's teeth	36.26% of participants agree; 54.97% strongly agree. This indicates the **almost complete awareness** of the risk of this outcome.
	Table 8.2, Item 13: Frequent consumption of sugar-sweetened beverages increases the risk of obesity.	34.51% of participants agree; 56.14% strongly agree. This indicates the **almost complete awareness** of the risk of this outcome.
	Table 8.2, Item 14: Frequent consumption of sugar-sweetened beverages increases the risk of diabetes.	36.84% agree; 53.22% strongly agree. This indicates the **almost complete awareness** of the risk of this outcome.
	Table 8.2, Item 17: In my opinion, other parents buy sugar-sweetened beverages for their children without realising the long-term impact of the consumption on their health.	50.29% agree; 31.58% strongly agree. Most participants appear to believe that other parents **do not** perceive the susceptibility of their children to the impact of their actions on their children's health.
	Table 8.4, Interview responses.	There was a **high level of awareness** regarding the health implications of the consumption of sugar-sweetened beverages.
Perceived severity	No question was posed regarding this construct.	Although no question was posed regarding this construct, the overwhelmingly positive response to the perceived susceptibility of the likely outcome of these conditions, indicates the likely perceptions of the severity of the outcome.
Perceived benefits	Table 8.2, Item 15: In my opinion, other parents make decisions about drinks that they buy for their children based on the ingredients rather that the price of the drink.	There were mixed responses to this question indicating that participants held the view that other parents have a **weak perception** of the benefits of their actions on their children's health.

HEALTH BELIEF MODEL OF BEHAVIOR CHANGE	PARTICIPANT REPONSES	INTERPRETATION
Perceived benefits	Table 8.2, Item 16: In my opinion, other parents make decisions about drinks that they buy for their children based on the price rather that the ingredients of the drink.	50.29% agree; 14.62% strongly agree. This indicates that participants held the view that other parents have a **fairly strong perception** of the benefits of their actions.
	Table 8.2, Item 21: I make decisions about drinks I buy for my child(ren) based on the ingredients in the drink.	42.69% agree; 20.47% agree strongly. As two-thirds of participants agreed, this indicates a **fairly strong awareness of the perceived benefits** of their actions for their children's health.
	Table 8.2, Item 22: I make decisions about the drinks I buy for my child(ren) based on the price of the drink.	43.27% agree; 11.11% agree strongly. Just more than 50% of participants agree. Again, this indicates a **measure of unawareness of the perceived benefits** of their actions for their children's health.
	Table 8.2, Item 23: The announcement (before the actual implementation) of the Health Promotion Levy prompted me to purchase fewer sugar-sweetened drinks for my child(ren).	22.22% agree; 5.85 strongly agree. This indicates a **very weak perception** of the health benefits of the Levy.
	Table 8.2, Item 24: The implementation of the Health Promotion Levy prompted me to purchase fewer sugar-sweetened drinks for my child(ren).	32,75% agree; 6.44% strongly agree. This indicates a **slightly stronger, but still fairly weak perception** of the benefits of the health benefits of the Levy.
	Table 8.2, Item 25: The announcement (before the actual implementation) of the Health Promotion Levy prompted me to purchase more drinks like diet soda, pure fruit juice, milk or water for my child(ren).	24.42% agree; 11.63% strongly agree. This indicates a **fairly weak perception** of the health benefits of alternative drinks.
	Table 8.2, Item 26: The implementation of the Health Promotion Levy prompted me to purchase more drinks like diet soda, pure fruit juice, milk or water for my child(ren).	30.99% agree; 9.36% strongly agree. Again, this indicates a **fairly weak perception** of the health benefits of alternative drinks.

HEALTH BELIEF MODEL OF BEHAVIOR CHANGE	PARTICIPANT REPONSES	INTERPRETATION
Perceived benefits	Table 8.2, Item 27: The introduction of the Health Promotion Levy had no impact on how many sugar-sweetened beverages I buy for my child(ren).	41.28% agree; 13.95% strongly agree. This (contradictory) response indicates a **moderate negative perception** of the perceived benefit of reducing the provision of sugar-sweetened beverages for their child(ren).
	Table 8.2, Item 18: In my opinion, the announcement (before the actual implementation) of the Health Promotion Levy prompted other parents to purchase fewer sugar-sweetened drinks for their children.	27.49% agree; 4.09% strongly agree. This indicates a **weak perception** of other parents' perceptions of the health benefits of the Levy.
	Table 8.2, Item 19: In my opinion, the implementation of the Health Promotion Levy prompted other parents to purchase fewer sugar-sweetened drinks for their children.	30,41% agree; 7,02% strongly agree. This indicates a **weak perception** of other parents' perceptions of the health benefits of the Levy.
	Table 8.2, Item 20: In my opinion, the introduction of the Health Promotion Levy has no impact on how many sugar-sweetened beverages other parents buy for their children.	40.94% agree; 11.7% strongly agree. This indicates a **moderate perception** of other parents' perceptions of the benefits of the Levy.
Perceived barriers	Table 8.2, Item 9: Do you perceive the current design of the Health Promotion Levy to be fair?	33.14% answered "yes"; 27.91% answered "no"; and 30.375 were unsure. The **relatively weak perception of the fairness of the design** of the Levy may indicate a resistance to a change in purchasing behaviour.
	Table 8.2, Item 10: Do you perceive the current design of the Health Promotion Levy to be efficient?	27.33% answered "yes"; 36.04% answered "no"; and 35.37% were unsure. Again, the **relatively weak perception of the efficiency of the design** of the Levy may indicate a resistance to a change in purchasing behaviour.

HEALTH BELIEF MODEL OF BEHAVIOR CHANGE	PARTICIPANT REPONSES	INTERPRETATION
Perceived barriers	Table 8.2, Item 11: Do you believe the government is accountable and transparent regarding the revenue received from the Health Promotion Levy?	15.69% answered "yes"; 45.93% answered "no"; and 36.05% were unsure. This **very weak** "yes" response indicates a lack of trust in the government, and a possible barrier to a change in purchasing behaviour.
	Table 8.3: Open-ended questions in the questionnaire related to whether the Health Promotion Levy was perceived as a "good" tax – fairness, efficiency and government accountability.	The responses were **mixed,** except for responses regarding the government's transparency and accountability, where responses were mainly negative or unsure. These perceptions may again pose a barrier to a change in purchasing behaviour.
	Table 8.4: Interview responses	Various concerns were raised regarding the financial burden on consumers, administrative problems with the Levy, the fact that people are already over-taxed, and a lack of public trust in the government. These concerns could all represent barriers to a change in purchasing behaviour.
	Table 8.2, Item 28: Imposing a sugar tax by the government limits taxpayers' rights to make their own choices.	31.97% agree; 11.63% strongly agree; and 32.56% are neutral. Infringing taxpayers' rights is only perceived to **pose a moderate barrier** to changing purchasing habits.
	Table 8.2, Item 29: Support for the Health Promotion Levy is supported regardless how the revenue is used by government.	Respondents' levels agreement and disagreement are virtually the same (40.63% and 38.95% respectively), with 24.42% remaining neutral. The way in which revenue from the Levy is used by the government **poses only a moderate barrier** to changing purchasing behaviour.
	Table 8.2, Item 30: I will only support the implementation of the Health Promotion Levy IF the total tax revenue will be earmarked for health promotion purposes.	There was a 73.10% agreement or strong agreement with this statement, 16.37% remaining neutral, and only10.53% disagreeing or strongly disagreeing. This response indicates that not earmarking the revenue from the Levy **poses a strong barrier** to changing purchasing behaviour.

HEALTH BELIEF MODEL OF BEHAVIOR CHANGE	PARTICIPANT REPONSES	INTERPRETATION
Perceived barriers	Table 8.2, Item 31: Support for the Health Promotion Levy if the rate at which it applies results in a 20% increase in the retail price of sugar-sweetened beverages?	42.02% agreed or strongly agreed; 36.25% disagreed or strongly disagreed; and 21.64% remained neutral. The result indicated the increase of 20% in the retail price would be **pose only a weak barrier** to the change in purchasing behaviour.
	Table 8.2, Item 32: I will only support an increase in the Health Promotion Levy on condition that the total tax revenue is earmarked for health promotion purposes.	73.53% agreed or strongly agreed; 12.35% disagreed or strongly disagreed; with 14.12% remaining neutral. This indicates that not earmarking the tax revenue for health promotion purposes **poses a strong barrier** to changing purchasing behaviour.
	Table 8.4, Interview responses	Participants expressed a sensitivity towards the change in the price of a product when making purchasing decisions. Participants also highlighted their lack of trust that the government had the ability to effectively administer the tax revenue.
Self-efficacy	Table 8.2, Items 5, 6 and 7: these questions relate to tuck shops at schools selling sugar-sweetened beverages, whether children are provided with money to spend at the tuck shop and the amount of money provided.	The high number of "yes" answers could indicate that due to availability of sugar-sweetened beverages, parents and guardians have **limited capacity to change** their children's consumption of sugar-sweetened beverages.
	Table 8.2, Item 8: I consume the following quantity of sugar-sweetened beverages on a weekly basis.	82% of respondents consume some sugar-sweetened beverages on a weekly basis, with the majority (46%) consuming less than a litre. This indicates **a measure of self-efficacy**.
	Table 8.4: Interview responses	The implementation of the Levy has a minimal impact on purchasing behaviour regarding providing sugar-sweetened beverages for the children of parents or guardians. In cases where there were changes, it was either due to financial constraints or for health reasons.

HEALTH BELIEF MODEL OF BEHAVIOR CHANGE	PARTICIPANT REPONSES	INTERPRETATION
Cues to action	Table 8.2, Item 1: Are you aware of what a non-communicable disease is?	44.77% responded "yes"; 36,63% responded "no", and 18,02% were unsure (**a mixed response**). This indicates that the government has not sufficiently publicised the dangers of sugar-sweetened beverages and the objectives of the Health Promotion Levy.
	Table 8.2, Item 2: Are you familiar with the term "sugar tax"?	62.21% answered "yes"; 30.23 answered "no" and 7.56% were unsure. This is a **slightly better response** but is not an indication of awareness of the Levy.
	Table 8.2, Item 3: Are you familiar with the terms "Health Promotion Levy"?	44.19% answered "yes" 40.69% answered "no"; and 15.12% were unsure (again **a mixed response**). Fewer respondents were familiar with the Health Promotion Levy than the term "sugar tax", indicating that the Levy was not adequately publicised by the government.
	Table 8.2, Item 4: Has a tax on sugar-sweetened bever ages been introduced in South Africa?	55.23% answered "yes"; 6.98% answered "no"; and 37,21% were unsure. This **moderate affirmative response** indicates that the introduction of the Levy was not sufficiently publicised.
	Table 8.2, Items 18 – 20, and 23 – 27: the announcement and introduction of the Health Promotion Levy.	The **moderate to weak** perceptions of the effect of the Levy on the purchasing behaviour of parents may also indicate that the Levy and its benefits were not effectively conveyed to the citizens.

Source: Own formulation

The interpretation of the results in Table 8.5 above reflects the ability of the *Health Benefit Model of Behavior Change* to predict the responses of parents and guardians to the questions in the research instruments. This is discussed in section 8.5.3 below.

8.5.4 Summary

In Table 8.5 above, the responses of participants were analysed against the framework of the *Health Belief Model of Behavior Change*. A brief overview of the analysis follows.

- **Perceived susceptibility:** In their responses to closed-ended questions in the questionnaire and in the interviews, participants expressed an almost complete awareness of the risk of the various health concerns associated with the consumption of sugar sweetened beverages but did not perceive that other parents recognised these risks.
- **Perceived severity:** There were no questions dealing with the perceived severity of the health problems associated with consuming sugar-sweetened beverages, but the overwhelmingly positive response to the susceptibility to the health risks involved seem to indicate that participants recognised the severity of the health risks.
- **Perceived benefits:** There was a weak perception of respondents to the questionnaire of the benefits of a change in purchasing behaviour when the introduction of the Levy was announced and a slightly stronger, but still weak, perception once it had been implemented. Respondents expressed similar views regarding the purchasing behaviour of other parents before and after the implementation of the Levy.
- **Perceived barriers:** Responses to the closed-ended questions in the questionnaire identified a moderate perception that limiting the taxpayers' rights to determine their purchasing behaviour posed a barrier to a change in purchasing behaviour, a moderate to strong perception that the unwillingness of the government to earmark the revenue from the Levy posed a barrier, and a weak perception that an increase of 20% in the price of sugar-sweetened beverages would pose a barrier.

  In the interviews, concerns were raised regarding the government's administrative problems with the Levy, the fact that consumers are already over-taxed and the lack of public trust in the government, all pointing to barriers to a change in consumer behaviour. The open-ended questions in the questionnaire were designed to test respondents' perceptions of the fairness and efficiency of the design of the Levy and government accountability transparency regarding the Levy (the principles of a good tax). The weak response to these questions suggests that this poses a barrier to a change in purchasing behaviour.

- **Self-efficacy:** Respondents referred to the fact that tuck shops at schools sell sugar-sweetened beverages, and this may have made it difficult for parents and guardians to change their purchasing behaviour. Regarding their own consumption, however, 82% revealed that they did consume some sugar-sweetened beverages, with the majority consuming less than 1 litre a week. Whether this indicates a change in the purchasing of these beverages, or whether respondents had not consumed these beverages prior to the introduction of the Levy is uncertain. Interviewees were of the view that the Levy had little effect on the purchasing behaviour of consumers and, where it had some effect, this was due to financial constraints or for health reasons.
- **Cues to action:** There were mixed responses to whether respondents are aware of what a non-communicable disease is, a slightly more positive response to whether they are familiar with the terms "sugar tax" and "Health Promotion Levy", and a moderate affirmative response to whether a sugar tax had been introduced in South Africa. These responses indicate that the Government did not sufficiently publicise the risks of the consumption of sugar-sweetened beverages, or the reasons for and benefits of the introduction of the Health Promotion Levy. The moderate to weak perceptions of the effect of the Levy on the purchasing behaviour of parents may also indicate that the Levy and its benefits were not effectively conveyed to the citizens.

Based on the responses of participants in this study, it appears that the introduction of the Levy had a very limited impact on their purchasing behaviour in relation to sugar-sweetened beverages or providing these beverages to their children.

8.6 CONCLUSION

Summaries of the results of the analysis of the responses to the questionnaire and the interviews were presented in the chapter. The results of the quantitative data analysis were summarised in tabular form – Table 8.1 summarised the demographical data and Table 8.2 summarised the findings from the closed-ended questions in the questionnaire and linked these findings to the literature. The results of the qualitative data analysis were also presented in two tables – Table 8.3 summarised the responses to the open-ended questions in the questionnaire, and Table 8.4 summarised the interview responses.

All the themes emerging from all the phases of the research and presented in the tables were then consolidated and summarised, including the findings from the analysis of sugar taxes levied in the selected countries. The responses to the open-ended questions probing the extent

to which the Levy complies with a "good" tax system were included. Themes from the open-ended questions and interviews, together with the associations established in the study were consolidated and summarised.

The chapter then applied constructs of the *Health Belief Model of Behavior Change* to interpret the responses to the questionnaire and the interviews. It was revealed that participants and respondents had strong perceptions of the health risks associated with sugar-sweetened beverages as well as the severity of the conditions, however, this did not translate into significant changes in purchasing behaviour. The interpretation of the responses of participants demonstrated that perceptions of the benefits of a change in behaviour were weak, and several perceived barriers to a change in behaviour were identified, including concerns about government transparency, administrative problems, and the lack of earmarking of the revenue received from the Levy. Although perceptions of self-efficacy were limited by factors such as the availability of sugar-sweetened beverages in school tuck shops, most participants and respondents reported that their own consumption is low. The analysis confirmed that participants' awareness of the Levy and its intended benefits are moderate to weak, suggesting inadequate cues to action in the form of communication to the public.

Lastly, the chapter revealed that the implementation of the Levy had a minimal impact on parents' purchasing decisions regarding sugar-sweetened beverages for their children and concluded that a substantial increase in the tax rate, combined with improved transparency and earmarking of funds for health promotion purposes, could enhance both the effectiveness and public support of the Levy.

The next chapter concludes the study and presents recommendations regarding changes to the Levy.

CHAPTER 9

CONCLUSION AND RECOMMENDATIONS

9.1 INTRODUCTION

South Africa is facing a health crisis due to the increasing prevalence of non-communicable diseases, and it is imperative that policies and procedures put in place by legislators are effective in curbing the prevalence of these diseases. One such policy, the Health Promotion Levy (the Levy), was implemented on 1 April 2018 in South Africa, and is levied on sugar-sweetened beverages. The aim of the Levy is to reduce excessive sugar consumption, which significantly increases the risk of developing non-communicable diseases. The research question was therefore whether the Levy is fair and effective in achieving its purpose.

The goal of the research was to investigate the fairness and effectiveness of the Levy, in the context of its likely success in reducing the intake of sugar, specifically by children. The goal of the research was addressed by the following sub-goals:

- determine whether the Levy adheres to the principles of a "good" tax system;
- compare the Levy to similar taxes in selected countries to assess its fairness and effectiveness;
- determine parents' awareness of the Levy and its purpose, and whether the Levy will induce parents to change their behaviour regarding providing their children with sugary beverages;
- interpret the results of the study in terms of the principles of a "good" tax and the *Health Belief Model of Behavior Change*; and
- based on the findings of the research, make recommendations regarding changes to the Levy and the rate at which it is imposed.

Having summarised and analysed all the research findings in Chapter Eight, the present chapter presents only a brief overview of the chapters and a summary of the main themes and findings flowing from the research. Recommendations are provided regarding the improvement of the current design and application of the Levy. Finally, the chapter describes the contribution of the research, its limitations, and suggests opportunities for future research.

9.2 OVERVIEW OF THE CHAPTERS

Chapter One provided the context in which the Health Promotion Levy was introduced, as a fiscal measure with the aim to reduce sugar consumption and improve public health. The chapter examined initial reactions to the proposed levy, highlighting different perspectives among stakeholders, with public health advocates mainly supportive and industry groups expressing concerns about the economic implications of the Levy. The chapter discussed the implementation process and design of the Levy, followed by an analysis of industry responses after the introduction of the Levy, such as the impact on employment and the response of industry in the form of product reformulation. The chapter analysed reactions to a planned increase in the Levy, emphasising the tension between health objectives and economic considerations. Lastly, the chapter assessed the impact of the COVID-19 pandemic, which introduced additional challenges to the effectiveness of the Levy, noting its influence on consumer behaviour.

Chapter Two focused on the development of the research question by examining key factors influencing the Health Promotion Levy. The analysis firstly considered whether the Levy was primarily implemented as a public health intervention or as an instrument to generate revenue for government. The chapter then examined the impact of the Levy on the consumption of sugar-sweetened beverages in terms of the literature to demonstrate behavioural changes among consumers. The chapter discussed equity and ethical considerations, specifically in relation to the disproportionate effect of the Levy on lower-income households, and the fairness of the policy introduced to improve public health. Factors were highlighted that promote public support for the Levy, and the chapter discussed the effectiveness of similar taxes on sugar-sweetened beverages in a number of countries. The limited research involving children revealed a gap in the literature dealing with understanding the impact of the Levy on children. The chapter analysed the influence of income levels and education on consumption behaviour and responsiveness to a tax on sugar-sweetened beverages. The research question: “Is the Levy a ‘good’ tax that is likely to be successful in its aim to reduce the intake of sugar, specifically in children?” was formulated based on the literature study, which was then translated into the main research goal and a set of sub-goals guiding the study. Finally, the chapter discussed the two theories that underpinned the research.

Chapter Three described the research methodology applied in the study. It was established that the study is situated within the post-positivist paradigm, which supports a mixed method

approach. The methodology involved a sequential mixed method approach, consisting of a questionnaire and interviews, which was considered the most suitable approach to achieve the research goals. The chapter explained the data collection processes followed in the mixed method approach adopted by the study. The population and sampling methods were discussed, and the data analysis and interpretation techniques were explained. The relevant ethical considerations of the study were set out. The manner in which the validity and reliability of the study were promoted was described.

Chapter Four explained the principles of good tax policy and described the key elements of a tax system. The Levy was compared to the principles of a good tax system to determine whether the imposition of the Levy satisfies these principles. The conclusion, based on the comparison, was that the Levy is, to a certain extent, compliant with the principles of a good tax policy. Reduced sugar consumption will lead to overall health improvements, but it might be perceived as unfair not to tax all food items containing sugar. The method of application of the Levy promotes certainty. The Levy involves low administration costs but is not compliant with the principle of efficiency, as the pass-through rate is too low to make a meaningful impact on consumers' purchasing behaviour. Although the process from inception to implementation of the Levy was transparent to stakeholders other than consumers of the beverage, and the Levy is regularly reviewed, the revenue raised by the Levy is not earmarked for health initiatives, and there is no transparency or accountability regarding how the funds are being spent.

Chapter Five investigated the imposition of a tax or levy on sugar-sweetened beverages in Belgium, France, the United Kingdom and Mexico. Evidence-based research findings in Belgium, France and Mexico revealed that there were changes in the consumption of sugar-sweetened beverages after the implementation of the excise duty, but these were not significant in certain countries. Suggestions were made by authors to increase the purchase price of sugary drinks by at least 20%, to earmark the tax revenue for public health or social programmes or to subsidise healthy food, and to change the tax design to tax beverages based on sugar content to encourage manufacturers to reformulate their products.

The amendment of the design of the soda tax in France, and the decision to earmark the revenue from the tax, contributed greatly to the increased acceptance of the tax by citizens of France. Authors argued that earmarking of tax revenues and the fact that the true purposes of the tax were clearly communicated to the public are two critical aspects of the success of France's soda tax. In the United Kingdom the Soft Drinks Industry Levy, with a pass-through rate to the

retail price of about 33.3% led to a 34% reduction in the availability of soft drinks with more than 5 grams of added sugar per 100 ml over a period of five years, contributing to improved health conditions. Researchers revealed that although government indicated that the money raised from the levy would be earmarked, the revenue received is not earmarked as communicated but used for the general budget. Reductions in consumption in Belgium and Mexico were not significant.

Evidence from the comparison between the countries suggests that the most effective tax rate or levy is one that leads to a 20% increase in the sugary drink's purchase price, and to prevent the consumption of untaxed energy dense substitute food items, the tax or levy should include more items containing sugar. Chapter Five highlighted the unequivocal agreement that a sugar tax is best supported by consumers if the income generated by the tax is used for health promotion purposes or to subsidise healthier food options. Chapter Five concluded that the most effective tax design to reduce sugar consumption is where the tax is based on the sugar content of the beverage.

Chapters Six and Seven analysed and interpreted the data. The analysis and interpretation of the quantitative phase of the research study, comprising closed-ended questions in a questionnaire administered to parents of learners in a selected sample of schools, was set out in detail in Chapter Six. The qualitative phase of the research study, which involved the analysis of the open-ended questions in the questionnaire and the data obtained from interviews conducted with parents who indicated on the questionnaire that they were willing to be interviewed, was described in Chapter Seven.

Chapter Eight presented summaries of the findings in the quantitative and qualitative analyses phases of the research and consolidated the main themes. The chapter applied the *Health Belief Model of Behavior Change* as the theoretical framework to analyse responses to the questionnaire and interviews. The main concerns revealed were:

- the rate of the Levy is too low to make a significant impact on the consumption of sugar-sweetened beverages;
- the Levy is not earmarked for health care initiatives;
- increased awareness of the Levy and its purpose would significantly influence consumers' decisions regarding the consumption of sugar-sweetened beverages;
- the Levy is not fully compliant with the principles of transparency and accountability, and there is widespread distrust in the government's ability to manage funds effectively; and

- support for the Levy and a possible increase in the rate at which the Levy is imposed depends on increased awareness of the impact of sugar on health, and accountability in terms of how the revenue will be used.

It was clear from the analyses that the implementation of the Levy had a limited impact on parents' purchasing decisions of sugary drinks for their children and that a possible reason for this limited impact is the fact that the current tax rate of the Levy is too low to correct market failures. It was emphasised that one way to significantly increase public trust and support is to earmark the revenue from the Levy for health promotion purposes.

In the next section the main themes and findings that emerged from the quantitative and qualitative phases of the research study are discussed.

9.3 SUMMARY OF THE KEY THEMES AND FINDINGS

The key themes that emerged from all phases of the research are discussed in this section. Areas of similarity, differences and new insights that emerged are highlighted.

Sugar tax in selected countries

The comparative analysis of the tax on sugar sweetened beverages in Belgium, France, Mexico, the United Kingdom and South Africa revealed that Belgium and Mexico levy the tax on volume and not sugar content, while France, the United Kingdom and South Africa levy the tax on sugar content. The literature established that sugar content is the most effective basis for the tax. The WHO recommended an increase of at least 20% in the price of sugar sweetened beverages, while the rate applying in Belgium, France, Mexico and South Africa, was lower than this recommended rate. The authors referred to in the literature all raised the concern that the revenue generated by the tax should be earmarked for health-related interventions, which is only the case in France.

Respondents in the present study strongly supported the earmarking of the revenue from the Levy, but there was a mixed response to an increase of 20% in the price of sugar sweetened beverages. Support by respondents for the increase was conditional upon earmarking of the revenue.

Principles of a good tax system

It was found in the comparison of the Levy with the principles of a good tax system, that the Levy is only partially compliant. The literature suggested that taxing only a specific category

and not all food items containing sugar is perceived as unfair by both consumers and the sugar industry. The response by the sugar industry in South Africa was that the Levy is inequitable and unfair, mainly due to the impact on employment. Mixed responses were received to the aspects of the equity and fairness of the Levy in the questionnaire and the interviews. Positive responses included "the Levy is based on consumption", "encourages healthier alternatives", "focuses on children's health", and "reduces the burden of diseases". Negative responses were "impact on low-income groups", "ineffective impact on consumer behaviour", "burden on the economy and being over-taxed", and "impact on industry and employment". Uncertain responses were "lack of awareness about the Levy" and "uncertainty about the details of the Levy".

The levy is self-assessed by manufacturers on a monthly basis using an excise return and paid to SARS via e-filing. Technology and the existing infrastructure are used, which promotes simplicity and certainty. There were no responses to the questionnaire or the interviews regarding the simplicity or certainty of the Levy.

Although the Levy uses existing infrastructure, involving low administration costs, and the Levy based on added sugar content promotes efficiency, the pass-through tax rate of 7.7% in South Africa is too low to make a meaningful impact on consumer behaviour. There were mixed responses to the question in the questionnaire regarding the efficiency of the Levy, with negative responses outweighing the positive responses, and with many respondents being unsure. Positive responses were "health benefits", "change in consumer behaviour and decision making", and "increased awareness"; negative responses were "insufficient change in consumer behaviour", "lack of public awareness", "low tax rate", "availability of cheaper sugary alternatives", "distrust in government", and "addiction and habits"; and uncertain responses were "uncertainty regarding the impact" and "lack of awareness about the Levy". Interviewees did not refer to the efficiency of the Levy.

Revenue raised by the Levy is not earmarked for health initiatives and there is no transparency or accountability regarding how the money is being spent. Negative and unsure responses to the questionnaire predominated. Negative responses included "corruption and distrust", "lack of communication from government", "lack of awareness about the Levy", and "mismanagement of revenue". The few positive responses were "clear tax rules", "communication and engagement", and "healthcare funding and social support". Uncertain responses were "uncertainty regarding lack of communication from government", "uncertainty

whether government can be trusted", and "lack of awareness" regarding the Levy. Interview responses highlighted a lack of public trust in the government and the administration of tax revenue, and ten of the eleven participants agreed that tax revenue received from the Levy should be used for health promotion purposes.

Awareness of what a non-communicable disease is, and the effect of sugar-sweetened beverages

Responses to the closed ended question in the questionnaire: "Are you aware what a non-communicable disease is?", indicated that 55% of respondents were unsure or responded "no", with only 45% stating "yes". Despite the majority not understanding the term "non-communicable disease", there was almost total agreement that the consumption of sugary sweetened beverages leads to tooth decay in children, obesity and an increased risk of diabetes. The responses of interviewees also revealed a high level of awareness regarding the health implications of the consumption of sugar-sweetened beverages.

To the statement "In my opinion, other parents buy sugar-sweetened beverages for their children without realizing the long-term impact of the consumption on their health", 82% of respondents agreed or strongly agreed, implying that respondents believe that other parents are not aware of the adverse health implications.

Familiarity with the terminology and whether a sugar tax has been introduced

Sixty-two percent of respondents to the questionnaire were familiar with the term "sugar tax", while only 44% were familiar with the term "Health Promotion Levy". Only 55% of the respondents were aware that a tax on sugar-sweetened beverages had been introduced in South Africa. The lack of awareness may point to poor communication by government when the Levy was introduced. The fact that most of the respondents to the questionnaire were unaware of the imposition of the tax may be a reason for the relatively small change in the behaviour regarding the consumption of these beverages.

Consumption of sugar-sweetened beverages

Respondents to the questionnaire indicated that most of the school tuck shops sell sugar-sweetened beverages, and most parents or guardians provide their children with money to be spent at the tuck shop. However, most of the respondents provide money to be spent only once a week or less frequently. Sixty-four percent of parents or guardians themselves consume one

litre or less of sugar-sweetened beverages weekly. From the responses it appears that family consumption of sugar-sweetened beverages is relatively low.

Purchases of sugar-sweetened beverages

Sixty-three percent of respondents claimed that they make decisions about drinks they buy for their child(ren) based on the ingredients in the drink, but 55% of respondents indicated that they make decisions about drinks they buy for their child(ren) based on the price of the drink. These responses appear to be contradictory.

About one-third of respondents believed that other parents make decisions about drinks they buy for their children based on the ingredients rather than the price of the drink, about one-third were neutral and about one-third disagreed. For the statement "in my opinion, other parents make decisions about drinks they buy for their children based on the price rather than the ingredients of the drink", the majority responded positively. The two sets of responses are again somewhat contradictory.

Change in behaviour of parents and guardians

An equal percentage of respondents agreed or disagreed that the implementation of the Health Promotion Levy prompted them to purchase fewer sugar-sweetened drinks for their children. Interviewees' responses under the theme "health awareness and behavioural change", indicated that the implementation of the Levy had a minimal impact on parents' and guardians' purchasing behaviour of sugar-sweetened beverages for their children. In cases where there were changes in consumer behaviour, it was either due to financial constraints, or for health reasons. This seems to confirm the responses to the questionnaire regarding a change in behaviour, where positive and negative responses to the questionnaire were almost equal.

Announcement and implementation of the Health Promotion Levy

The announcement and actual implementation of the Levy appear to have only marginally prompted participants in the study and other parents to reduce their purchases of sugar-sweetened drinks for their children.

Almost half of the respondents disagreed that the announcement (before the actual implementation) of the Health Promotion Levy prompted them to purchase fewer sugar-sweetened drinks for their children, and almost half disagreed that the announcement prompted them to purchase more drinks like diet soda, pure fruit juice, milk or water for their children.

Once the Levy was implemented, an equal number of respondents agreed or disagreed that the implementation of the Health Promotion Levy prompted them to purchase fewer sugar-sweetened drinks for their children, and an equal number of respondents agreed or disagreed that the implementation of the Health Promotion Levy prompted them to purchase more drinks like diet soda, pure fruit juice, milk or water for their children. Interviewees were of the opinion that the implementation of the Levy had a minimal impact on parents' purchasing behaviour of sugar-sweetened beverages for their children; in cases where there were changes in consumer behaviour, it was either due to financial constraints, or for health reasons.

An equal number of respondents agreed or disagreed that the announcement of the Health Promotion Levy prompted other parents to purchase fewer sugar-sweetened drinks for their children. An almost equal number of respondents agreed or disagreed that the implementation of the Health Promotion Levy prompted other parents to purchase fewer sugar-sweetened drinks for their children.

Limit to taxpayers' rights

Finally, most of the respondents were of the view that, by imposing a sugar tax on sugar-sweetened beverages, the government limits taxpayers' rights to make their own choices.

Table 9.1 below provides a link between the findings in the study and findings in literature.

Table 9.1 Linking study findings with literature

THEMES EMERGING FROM THE STUDY	STUDY FINDINGS	FINDINGS FROM LITERATURE
Sugar tax in selected countries: • **taxing sugar-sweetened beverages based on sugar content rather than volume;**	No findings.	Studies by Azaïs-Braesco, *et al*. (2017), Chatelan, *et al*. (2022), Hernández, *et al*. (2023), and Francis, Marron, and Rueben (2016): taxing sugar-sweetened beverages based on sugar content rather than volume is the most effective tax design.
• **a sugar tax is best supported by the public if the revenue from the tax is earmarked to provide affordable healthy food alternatives, or for other health initiatives.**	Respondents expressed **strong agreement** that the funds generated by the Levy should be earmarked for health promotion purposes, and **strong support** for an increase in the Health Promotion Levy on condition that the total tax revenue is earmarked for health promotion purposes.	Le Bodo, *et al*. (2022, p.588) found that public perception and support of tax on sugar-sweetened beverages tend to increase when the revenue generated from the tax is allocated to public health initiatives.
Is the Levy a "good" tax? • **Equity and fairness**	• Equity and fairness: **mixed responses** - Positive responses were "fair, as the Levy is based on consumption", "encourages healthier alternatives", "focuses on children's health", and "reduces the burden of diseases"; negative responses were "impact on low-income groups", "ineffective impact on consumer behaviour", "burden on the economy and being over-taxed", and "impact on industry and employment"; uncertain responses were "lack of awareness about the Levy" and "uncertainty about the details of the Levy"	Principles of a "good" tax system: Adam Smith (1776), Mirrlees (2011), Alley and Bentley (2005), and Lombard and Koekemoer (2020). • Equity and fairness: taxing only a specific category and not all food items containing sugar is perceived as unfair by consumers and the sugar industry
• **Certainty and simplicity**	• Certainty and simplicity The principles of certainty and simplicity are not relevant from the perspective of consumers, as they only pay the higher price of the sugar-sweetened beverages.	

THEMES EMERGING FROM THE STUDY	STUDY FINDINGS	FINDINGS FROM LITERATURE
Is the Levy a "good" tax? • **Efficiency and low administration costs**	• Efficiency and low administration costs: **mixed responses** - Positive responses were "health benefits", "change in consumer behaviour and decision making", and "increased awareness"; negative responses were "insufficient change in consumer behaviour", "lack of public awareness", "low tax rate", "availability of cheaper sugary alternatives", "distrust in government", and "addiction and habits"; uncertain responses were "uncertainty regarding the impact" and "lack of awareness about the Levy". There were no responses relating to the efficiency of the Levy.	• Efficiency and low administration costs: Francis, Marron and Rueben (2016) concluded that in the case of a good sugar tax system with the goal to reduce sugar consumption, tax based on the amount of added sugar will promote efficiency. Studdert, Flanders and Mello (2015, p.5) warned that initiatives like a limit on soft drink size, low sugar tax and calorie labels are inadequate to change the behaviour of consumers.
• **Transparency and accountability**	• Transparency and accountability: responses were mainly **negative or unsure** – Reasons for the positive response were "clear tax rules", "communication and engagement", and "healthcare funding and social support"; reasons for the negative responses were "corruption and distrust", "lack of transparency and accountability", "lack of awareness about the Levy", and "mismanagement of revenue"; reasons for uncertainty were "uncertainty regarding transparency", "uncertainty whether government can be trusted", and "lack of awareness".	• Transparency and accountability: Transparent authorities are accountable for their decisions, statements and actions if these decisions, statements and actions are accessible to taxpayers to consider and evaluate (Rawlins, 2008, p.7). Accountability provides the opportunity for communication and debate between parties (Schedler, Diamond & Plattner, 1999, p.15).

THEMES EMERGING FROM THE STUDY	STUDY FINDINGS	FINDINGS FROM LITERATURE
Is the Levy a "good" tax? • **Transparency and accountability**	• Transparency and accountability: - Support for the implementation of the Health Promotion Levy regardless of how the revenue received is being used by the government: **mixed responses** - Support for the implementation of the Health Promotion Levy IF the total tax revenue will be earmarked for health promotion purposes": **strong positive response**.	• Le Bodo, *et al*. (2022, p.588) found that public perception and support of tax on sugar-sweetened beverages tend to increase when the revenue generated from the tax is allocated to public health initiatives. Thow, *et al*. (2022) highlighted the important role of earmarking the revenue collected for gaining political support and improving the effectiveness of sugar-sweetened beverage tax.
Awareness of what a non-communicable disease is	55% of respondents were unsure or responded "no", with only 45% stating "yes".	Awareness of diseases was not discussed in the literature review.
Awareness of the effect of sugar-sweetened beverages	There was **almost total agreement** that the consumption of sugary sweetened beverages leads to tooth decay in children, obesity and an increased risk of diabetes	The South African Paediatric Association (2017, p.1), confirmed that the prevalence of tooth decay, diabetes and obesity is rising among children in South Africa. The Association for Dietetics in South Africa (2017, p.1) submitted that the over-consumption of added sugars contributes to tooth decay and obesity, which in turn increases the risk of non-communicable diseases.
The opinion of participants, regarding whether other parents buy sugar-sweetened beverages for their children without realizing the long-term impact of the consumption on their health.	There was **almost total agreement**.	Other parents' opinions were not discussed in the literature review.

THEMES EMERGING FROM THE STUDY	STUDY FINDINGS	FINDINGS FROM LITERATURE
Familiarity with the terminology	62% of respondents were familiar with the term "sugar tax", while only 44% were familiar with the term "Health Promotion Levy".	Awareness of terminology was not discussed in the literature review.
Level of awareness that a tax on sugar sweetened beverages had been introduced in South Africa.	55% of the respondents were aware that a tax on sugar-sweetened beverages had been introduced in South Africa.	Awareness of the introduction of a sugar tax was not discussed in the literature review.
Consumption of sugar-sweetened beverages.	• Most of the school tuck shops sell sugar-sweetened beverages, the majority of parents/guardians provide their children with money to be spent at the tuck shop, but 77% of the respondents provide money to be spent only once a week or less. • Sixty-four percent of parents or guardians themselves consume one litre or less of sugar-sweetened beverages weekly.	The findings from studies conducted in various cities and countries suggest that the impact of tax on the consumption of sugar-sweetened beverages is not uniform across the cities and countries. For example, Rojas and Wang (2021, p.97) reported no significant reduction in sugar-sweetened beverage consumption in Berkeley, California, while Cawley, *et al*. (2019b) reported a reduction of 31% in the frequency of soda consumption among adults following the implementation of the tax in Philadelphia.
Purchases of sugar-sweetened beverages	• Sixty-three percent of respondents claimed that they make decisions about drinks they buy for their child(ren) based on the ingredients in the drink, but 55% of respondents indicated that they make decisions about drinks they buy for their child(ren) was based on the price of the drink. This appears to be **contradictory**. • There were mixed responses of participants that other parents make decisions about drinks they buy for their children based on the ingredients rather than the price of the drink. Most of participants believed that other parents make decisions about drinks they buy for their children based on the price rather than the ingredients of the drink, again somewhat **contradictory**.	Capacci, *et al*. (2019) established that there was a very limited decrease in soft drink purchases after the soda tax was put into effect in France. Hernández, *et al*. (2023) found that although purchases of sugar-sweetened beverages decreased after the implementation of the sugar tax, the impact was not as big in Mexico.

THEMES EMERGING FROM THE STUDY	STUDY FINDINGS	FINDINGS FROM LITERATURE
Change in behaviour	An **equal percentage** of respondents agreed or disagreed that the implementation of the Levy prompted them to purchase fewer sugar-sweetened drinks for their children. **Almost half** of the respondents **disagreed** that the announcement (before the actual implementation) of the Levy prompted them to purchase fewer sugar-sweetened drinks for their children. **Almost half** of the participants **disagreed** that the announcement (before the actual implementation) of the Levy prompted them to purchase more drinks like diet soda, pure fruit juice, milk or water for their children. Once the Levy was introduced, **an equal number** of respondents agreed or disagreed that the implementation of the Levy prompted them to purchase fewer sugar-sweetened drinks for their children. An **equal number** of respondents agreed or disagreed that the implementation of the Levy prompted them to purchase more drinks like diet soda, pure fruit juice, milk or water for their children.	The findings from studies conducted in various cities and countries suggest that the impact of tax on sugar-sweetened beverages on consumer behaviour is not uniform across the cities and countries. It was noted by Wrottesley, *et al*. (2020) that a decrease in the intake of sugar-sweetened beverages took place among 600 adults in Soweto between the time that the intention of the tax was announced and the time the Levy was implemented. Cawley, *et al*. (2020a) found no significant changes in overall consumption of sugar-sweetened beverages among either adults or children in Oakland, California following the implementation of the tax. Tsakos (2025) concluded that the Soft Drinks Industry Levy in the United Kingdom has successfully reduced sugar consumption, leading to improved health outcomes and declining health inequalities.

9.4 RECOMMENDATIONS

This section presents recommendations based on the findings and themes identified in this study.

- Although it was established that the rationale for only taxing sugar-sweetened beverages was based on the fact that sugar-sweetened beverages contain empty calories, whereas products such as milk and fruit juices contain nutrients, to promote simplicity and fairness, it is recommended that the tax base should be broadened to include other food items containing sugar. Only taxing a specific beverage category complicates the tax base and is perceived as unfair.
- From the findings in the study, it can be concluded that the current rate of the Levy that is passed through to the consumer is not high enough to produce a significant change in consumer behaviour. On the other hand, the impact of the Levy on employment in the sugar industry is a major concern. It is therefore recommended that the moratorium on the Levy's extension to other products, or an increase in the rate, should be extended until 2030 as requested by the South African Sugar Association, the South African Canegrowers Association and the South African Farmers Development Association, to allow for the Sugarcane Value Chain Master Plan processes to be completed, and to explore product diversification opportunities, after which date it is recommended that the tax rate of the Levy should be increased to result in a 20% increase in cost price to the consumer.
- It is assumed that increased awareness of the Levy and its purpose in combating non-communicable diseases should have a significant impact on consumers' decisions regarding the consumption of sugar-sweetened beverages. The limited level of understanding regarding the implementation of the Levy, however, highlights the need for improved public education and communication about the Levy and its purpose. Initiatives to address this need as well as comprehensive disease awareness programmes are therefore recommended.
- Due to the general availability of sugar-sweetened beverages in many school tuck shops, it is recommended that educational programmes should be developed specifically for children and built into the school curriculum to raise awareness about the health implications of sugar-sweetened beverages. Additionally, strict regulations regarding sugar consumption in schools and the availability of healthier, affordable options are encouraged.

- To improve the effectiveness of tax on sugar-sweetened beverages, it is recommended that policymakers should consider measures that reduce the burden on lower-income households such as introducing subsidies for healthier alternatives.
- To increase support for the Levy among all educational levels, it is recommended that nutrition awareness programmes should be targeted towards consumers with lower education levels to improve the understanding of health risks and encourage healthier dietary choices.
- Lastly, but most importantly, it is recommended that the tax revenue collected from the Levy should be earmarked for health care initiatives to promote the principles of fairness and efficiency as well as transparency and accountability. It is argued that this will increase taxpayers' support for the Health Promotion Levy.

9.5 LIMITATIONS OF THE STUDY

Although the findings of the study provide meaningful insights, the following limitations apply to the research.

One notable limitation is related to the scope of the research. The population from which the sample was selected was limited to parents of children attending school in Bloemfontein, Mangaung municipality, in South Africa. Although the population is not representative of all schools in the country, it is still broadly representative because children attending schools in Mangaung include families from low, middle- and high-income groups, the sugar consumption of children in Mangaung is assumed to be representative of children across South Africa, and sugar-sweetened beverages are as readily available in Mangaung as they are elsewhere in South Africa.

A source of potential bias could potentially be present and constitute a limitation of the study, as the participants may have given responses that are socially acceptable regarding their children's sugar consumption. The responses of participants to the questions dealing with what they think other parents' perceptions are did not reveal a significant difference between their personal responses and their perception of other parents' perceptions. This may indicate only a limited measure of bias.

Although different race groups were involved in the data collection process, English was the language used in the research instruments, which may have limited participation to respondents

who understand and can communicate in English. The views of the population for the study may therefore not represent the views of the general population.

The study sample included a large proportion of White participants compared to Black participants, and limited representation of respondents from Coloured, Indian and "Other" race groups. The research findings may therefore not represent the views of these population groups.

9.6 CONTRIBUTIONS OF THE STUDY

This study contributed to existing research by providing a structured evaluation of the Levy against the principles of a good tax system. This ensures that the critique of the Levy is based on well-established principles.

The study compared the Levy with sugar taxes applying in selected countries and provides a comparative perspective and insight into how the Levy aligns with taxes imposed in these countries.

The study made a further contribution by interpreting the findings in terms of the *Health Benefit Model of Behavior Change,* a model previously used in health sciences.

9.7 OPPORTUNITIES FOR FUTURE RESEARCH

The present study was limited to Bloemfontein, Mangaung municipality in the Free State, South Africa. A similar study could be undertaken amongst parents of children attending schools throughout South Africa to make the findings more representative.

Should the rate at which the Levy is imposed be increased, or extended to other food items containing sugar, that could present an opportunity to future researchers to study the impact of the changes.

9.8 CONCLUDING REMARKS

The effectiveness of the Levy as a mechanism to reduce consumption of sugar-sweetened beverages is contingent on addressing public concerns regarding the fairness, efficiency, and transparency of the Levy, and the accountability of the government regarding the use of the funds generated by the Levy. Increased awareness and understanding of the Levy's design and intended purpose, together with evidence of responsible management of tax revenue, are critical to improve public support and achieve meaningful health outcomes.

Throughout this research journey I have developed a deep appreciation for the complexity of tax policy. To craft an optimal tax policy, where the requirements of the principles of a good tax system must be balanced with the diverse economic and societal needs and challenges in a country, is by no means an easy task.

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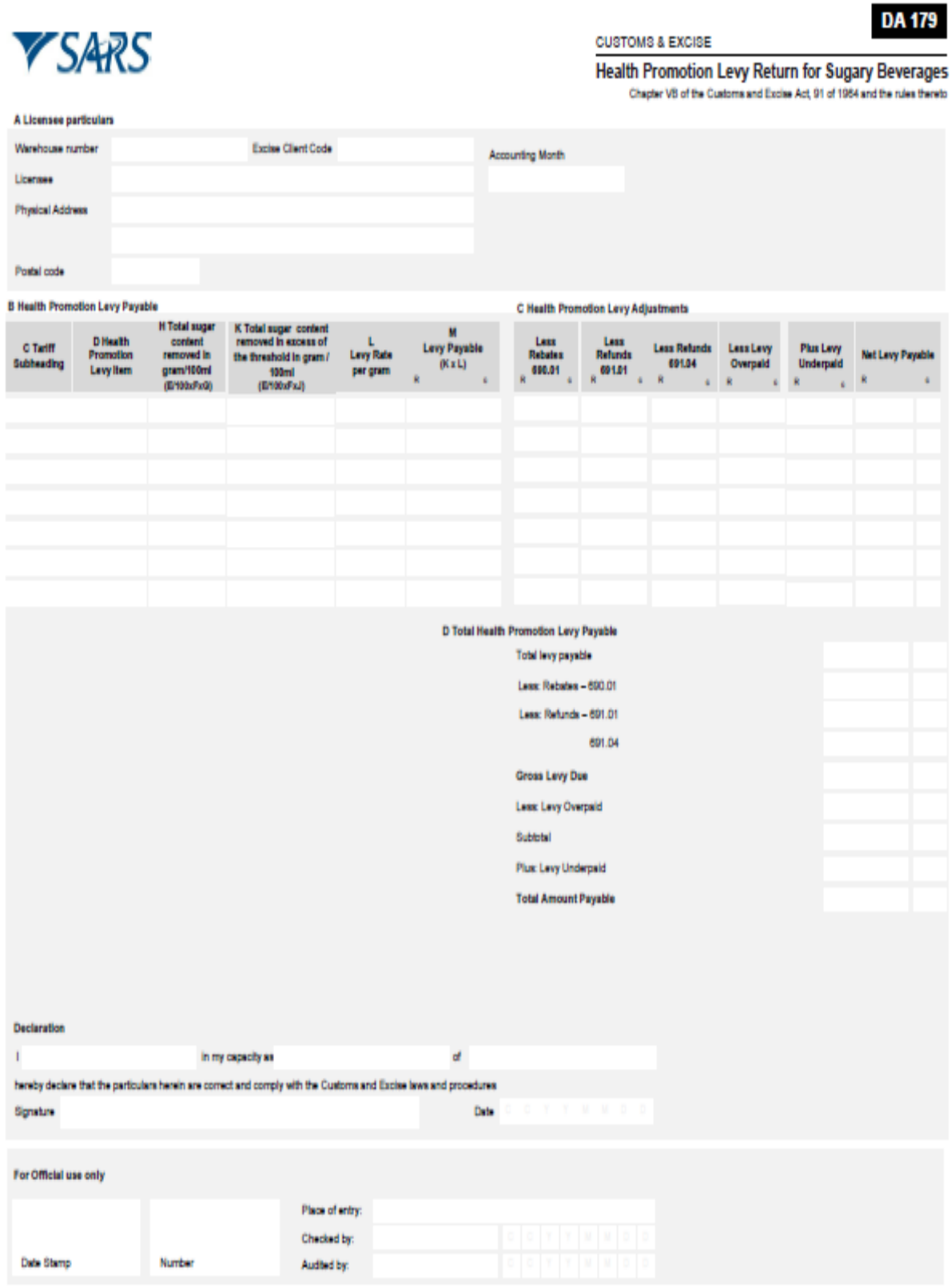
APPENDICES

Appendix A



SARS

DA 179

CUSTOMS & EXCISE

Health Promotion Levy Return for Sugary Beverages

Chapter VB of the Customs and Excise Act, 91 of 1964 and the rules thereto

A Licensee particulars

Warehouse number | Excise Client Code | Accounting Month

Licensee

Physical Address

Postal code

B Health Promotion Levy Payable

C Tariff Subheading	D Health Promotion Levy Item	H Total sugar content removed in gram/100ml (E/100xFxG)	K Total sugar content removed in excess of the threshold in gram / 100ml (E/100xFxJ)	L Levy Rate per gram	M Levy Payable (K x L) R c

C Health Promotion Levy Adjustments

Less Rebates 690.01 R c	Less Refunds 691.01 R c	Less Refunds 691.04 R c	Less Levy Overpaid R c	Plus Levy Underpaid R c	Net Levy Payable R c

D Total Health Promotion Levy Payable

Total levy payable	
Less: Rebates – 690.01	
Less: Refunds – 691.01	
691.04	
Gross Levy Due	
Less: Levy Overpaid	
Subtotal	
Plus: Levy Underpaid	
Total Amount Payable	

Declaration

I | in my capacity as | of

hereby declare that the particulars herein are correct and comply with the Customs and Excise laws and procedures

Signature | Date C C Y Y M M D D

For Official use only

Date Stamp | Number | Place of entry: | Checked by: C C Y Y M M D D | Audited by: C C Y Y M M D D

SARS

CUSTOMS & EXCISE

DA 179

Continuation Sheet

A Licensee particulars

Warehouse number		Excise Client Code	
Licensee			Accounting Month
Physical Address			
Postal code			

B Health Promotion Levy Payable

C Health Promotion Levy Adjustments

C Tariff Subheading	D Health Promotion Levy Item	H Total sugar content removed in gram/100ml (E/100xFxG)	K Total sugar content removed in excess of the threshold in gram / 100ml (E/100xFxJ)	L Levy Rate per gram	M Levy Payable (K x L) R c	Less Rebates 690.01 R c	Less Refunds 691.01 R c	Less Refunds 691.04 R c	Less Levy Overpaid R c	Plus Levy Underpaid R c	Net Levy Payable R c

Total to be carried forward and included in the Total Levy Payable on the DA179

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NOTES

COMPLETION NOTES FOR THE DA 179 HEALTH PROMOTION LEVY RETURN, DA 179 CONTINUATION SHEET AND DA 179.01 SCHEDULE OF ITEMS REMOVED (CSV - FILE)

Particulars to be specified: These notes must be read in conjunction with the DA 179 - "Completion Manual" (available on the SARS website)

The return information must be submitted via SARS eFiling on the EXD 01 return. The completed and signed DA 179 - return hard copy and its supporting documents must be kept for record purposes [Refer to rule 119A.R101A (10)(d) (a - g)]

The Levy Payable, Nett Levy Payable and Total Health Promotion Levy Payable amounts on the DA 179 – return, DA 179 Continuation sheet and DA 179.01 (CSV - file) respectively, must all be indicated in Rand (R) and Cent (C).

All leviable sugary beverages removals must be captured on the DA 179.01 (CSV - file) and summarised on the DA 179 - return. The individual line items on the DA 179.01 (CSV-file) must be consolidated per Tariff Subheading and captured on the DA 179 - return. (Note should be taken of the various packaging types of the same product which must be reflected separately on the DA 179.01 (CSV - file) but consolidated on the DA 179 - return under the relevant Tariff Subheading).

The DA 179.01 (CSV - file) must be attached to the DA 179 - return and kept in a safe place for record purposes.

Explanation of the fields on the DA 179 - return and DA 179 continuation sheet only:

Section A. Licensee particulars.

- Warehouse number: The relevant warehouse number allocated to the licensed warehouse for Excise.
- Excise Client Code: The Excise code issued to the licensee/registrant for Excise.
- Licensee: The official business name of the licensee as registered with the Registrar of Companies.
- Physical Address: The street address of the licensed warehouse.
- Postal Code: The postal area code of the licensed warehouse.
- Accounting Month: The month in which sugary beverages levy goods were removed from the licensed warehouse. A month starts on the 1st day and ends on the last day of that month, or part of a month, when the company started the removals of sugary beverages levy goods, or when the company ceased to trade.

Section B. Health Promotion Payable on the DA 179 - return and DA 179 continuation sheet:

- Column C: Tariff Subheading - The relevant 8-digit Tariff Subheading code as per Schedule 1 Part 1.
- Column D: Health Promotion Levy Item - The 7-digit levy item as per Schedule 1 Part 7A.
- Column H: Total sugar content removed in g/100ml (E/100 x F x G) - The total sugar content removed in g/100 ml as per Column H on the CSV - file.
- Column K: Total sugar content removed in excess of the threshold in g/100ml (E/100 x F x J) - The total sugar content removed in excess of 4 grams per 100ml for the accounting month as per Column K on the CSV - file. The amount will be the sugar content **LESS** the 4 grams per 100ml threshold.
- Column L: Levy Rate per gram - The applicable levy rate, as per Schedule 1 Part 7A, must be inserted per line.
- Column M: Levy Payable (K x L) - Sugar content removed in excess of 4 grams per 100ml multiplied by the levy rate.

Section C. Health Promotion Levy Adjustments as on the DA 179 - return and DA 179 continuation sheet

- Less Rebates: Item 690.01 - Goods lost or destroyed in the VM warehouse in circumstances of vis major.
- Less Refunds: Item 691.01 - Proven removals to BLNS countries as defined in Rebate Item 691.01 of Schedule 6 (only if proof of exit from the Republic was obtained - SAD 500 form with required acquittal documentation within thirty (30) days of export).

  Note: Exports are declared and set-off on the DA 179 – return as a non-levy removal and therefore cannot be claimed again subsequently.
- Less Refunds: Item 691.04 - Proven direct VM exports beyond the BLNS countries as defined in Rebate Item 691.04 of Schedule 6 (only if proof of exit from the Republic was obtained - SAD 500 form with required acquittal documentation within thirty (30) days of export).

  Note: Exports are declared and set-off on the DA 179 – return as a non-levy removal and therefore cannot be claimed again subsequently.
- Less Levy Overpaid: If an amount was overpaid on a previous return the amount must be deducted from the Gross Levy Due amount.
- Plus: Levy Underpaid: If an amount was underpaid on a previous return the amount must be added to the Gross Levy Due amount.
- Nett Levy Payable: The Levy Payable in Column M less the rebates, refunds and overpayment plus the underpayment reflected in Section C.

Section D. Total Health Promotion Levy Payable on the DA 179 - return only:

- Total levy payable: The total amount reflected in Column M.
- Less Rebates: Item 690.01 - Goods lost or destroyed in the VM warehouse in circumstances of vis major.

- Less Refunds: Item 691.01 - Proven removals to BLNS countries as defined in Rebate Item 691.01 of Schedule 6 (only if proof of exit from the Republic was obtained – SAD 500 form with required acquittal documentation within thirty (30) days of export).
- Less Refunds: Item 691.04 - Proven direct VM exports beyond the BLNS countries as defined in Rebate Item 691.04 of Schedule 6 (only if proof of exit from the Republic was obtained - SAD 500 form with required acquittal documentation within thirty (30) days of export).
- Gross Levy Due: The total minus the rebates/refunds set-off amounts must be inserted here.
- Less Levy Overpaid: If an amount was overpaid on a previous return the amount must be deducted from the Gross Levy Due amount.
- Subtotal: The Gross Levy Due amount minus the over payment made on a previous return.
- Plus Levy Underpaid: If an amount was underpaid on a previous return the amount must be added to the Gross Levy Due amount.
- Total Amount Payable: The Subtotal plus the underpayment made on a previous return.

Declaration: The licensee or his duly appointed, by proxy, public officer must complete their personal particulars and signature with date of completion of the DA 179 - return.

For Official Use Only: This section is for official use only and therefore should not be attended to in any way by the licensee or the public officer.

Explanation of the fields of the DA 179.01 (CSV - file) only (This document/file MUST be completed for all removals of sugary beverages levy products removed from the VM warehouse. The various product packaging sizes must be reflected seperately on its own line).

1. Licensee particulars

- Warehouse number: The relevant warehouse number allocated to the licensed warehouse for Excise.
- Excise Client Code: The Excise code issued to the licensee/registrant for Excise.
- Taxpayer e-mail address: Licensee to insert the e-mail address.
- Accounting Month: The month in which sugary beverages levy goods were removed from the licensed warehouse. A month starts on the 1st day and ends on the last day of that month, or part of a month, when the company started the removals of sugary beverages levy goods, or when the company ceased to trade.

2. Declaration in respect of sugary beverages products removed:

- Column A: Client Product Code - This is the specific product's identification code normally printed on the product packaging.
- Column B: Client Product Description - This is the specific product's trade name also printed on the packaging.
- Column C: Tariff Subheading - This is the relevant Tariff Subheading as reflected in Schedule 1 Part 1.
- Column D: Health Promotion Levy Item - This is the relevant Health Promotion Levy Item as reflected in Schedule 1 Part 7A.
- Column E: Unit volume or the diluted / mixed volume in ml - This is the specific volume in millilitre of one unit of the product type. For ready-mixed sugary beverages, it would be the volume of the packaging in which one unit of the product is put up for retail sale, e.g. 330ml. For powder and liquid concentrates or preparations for the making of sugary beverages, it would be the total volume of the prepared beverage when one unit of such concentrate or preparation, in the packaging in which the product is put up for retail sale, is mixed or diluted according to the manufacturer's product specifications.
- Column F: Number of Units removed - This is the total number of units of a specific product and specific packaging removed from the VM.
- Column G: Sugar content g/100ml – This is the sugar content as certified on a test report obtained and retained from a testing laboratory accredited with and using methodology recognised by the South African National Accreditation System (SANAS) or the International Laboratory Accreditation Cooperation (ILAC) . If the said certificate is not available upon the completion of this DA179.01 (CSV - file), the client must use the deemed sugar content of the sugary beverage that is assumed to constitute 20grams per 100ml. For powder and liquid concentrates or preparations for the making of sugary beverages, the sugar content must be determined based on the total volume of the prepared beverage when mixed or diluted according to the manufacturer's product specifications.
- Column H: Total sugar content removed g/100ml (E/100 x F x G) - To calculate this amount the following formula must be used (Column E divide by100 multiply by Column F multiply by Column G).
- Column I: The threshold Sugar content in g/100ml as prescribed - This threshold is reflected in Schedule 1 Part 7A.
- Column J: Sugar Content Leviable (G - I) - To calculate this amount the following formula must be used (Column G minus Column I).
- Column K: Total sugar content removed in excess of the threshold in g/100ml (E/100 x F x J) - To calculate this amount the following formula must be used (Column E divide by 100 multiply by Column F multiply by Column J).
- Column L: Levy Rate per gram - This rate is reflected in Schedule 1 Part 7A.
- Column M: Levy payable (K x L) - To calculate this amount the following formula must be used (Column K multiply by Column L).

SARS

DA 179.01

CUSTOMS & EXCISE

Schedule of Health Promotion Levy Items In Respect of Manufactured Products Removed from the Licensed Premises

1. Licensee particulars

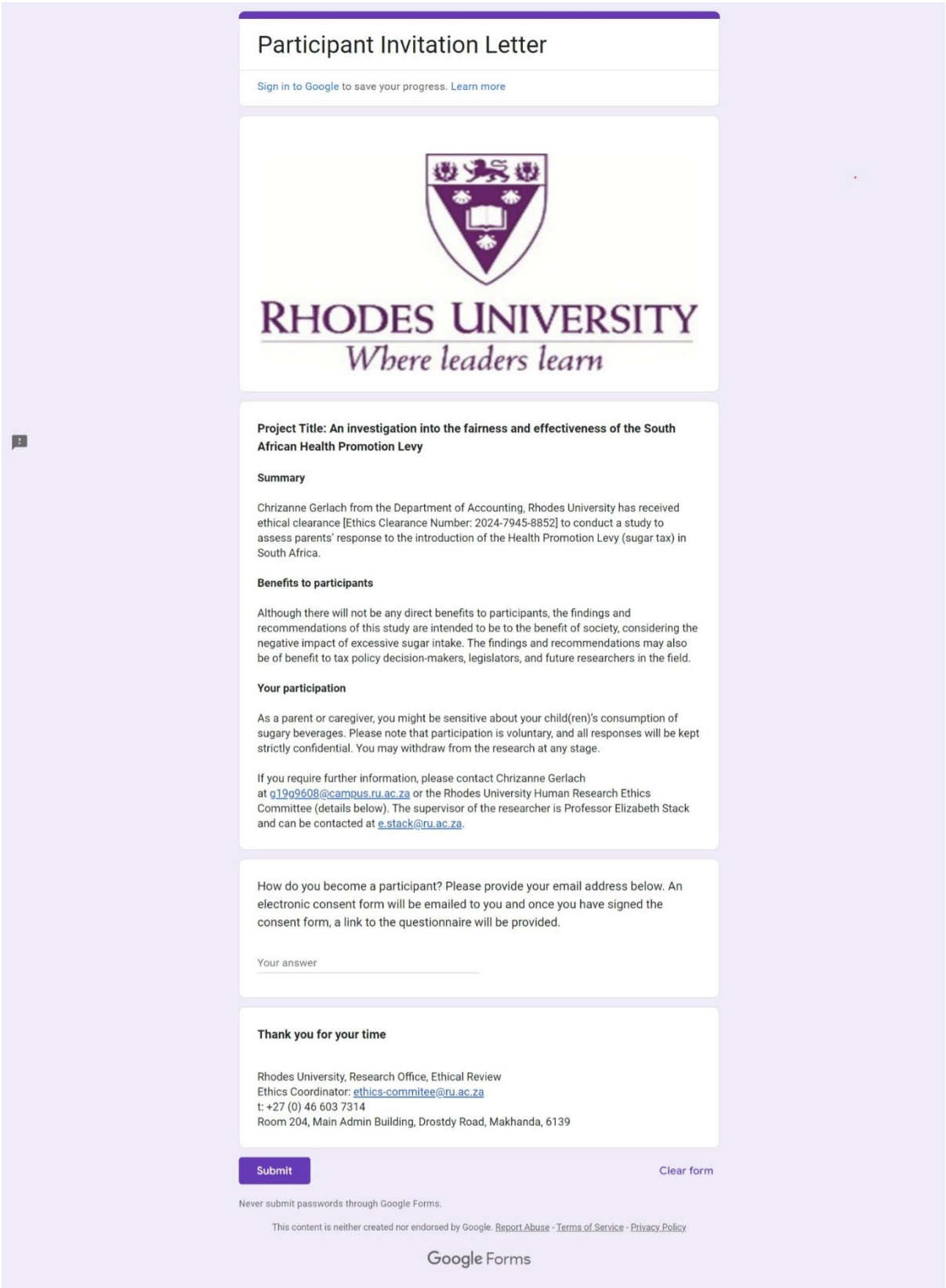
Warehouse number		Excise Client Code	
Client email address		Accounting Month	

2. Declaration in respect of sugary beverage products removed

A Client Product Code	B Client Product Description	C Tariff Subheading	D Health Promotion Levy Item	E Unit volume or the diluted/mixed volume in ml	F Number of Units removed	G Sugar content g/ 100ml	H Total sugar content removed g/ 100ml (E/100xFxG)	I Threshold Sugar content g/100ml prescribed	J Sugar Content Leviable (G-I)	K Total sugar content removed in excess of the threshold in grams / 100ml (E/100xFxJ)	L Levy Rate per gram	M Levy Payable (K x L) R	c
Total													

3. Totals per tariff subheadings to be consolidated and carried forward to the respective columns on the DA179

Appendix B



Participant Invitation Letter

Sign in to Google to save your progress. Learn more

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Project Title: An investigation into the fairness and effectiveness of the South African Health Promotion Levy

Summary

Chrizanne Gerlach from the Department of Accounting, Rhodes University has received ethical clearance [Ethics Clearance Number: 2024-7945-8852] to conduct a study to assess parents' response to the introduction of the Health Promotion Levy (sugar tax) in South Africa.

Benefits to participants

Although there will not be any direct benefits to participants, the findings and recommendations of this study are intended to be to the benefit of society, considering the negative impact of excessive sugar intake. The findings and recommendations may also be of benefit to tax policy decision-makers, legislators, and future researchers in the field.

Your participation

As a parent or caregiver, you might be sensitive about your child(ren)'s consumption of sugary beverages. Please note that participation is voluntary, and all responses will be kept strictly confidential. You may withdraw from the research at any stage.

If you require further information, please contact Chrizanne Gerlach at g19g9608@campus.ru.ac.za or the Rhodes University Human Research Ethics Committee (details below). The supervisor of the researcher is Professor Elizabeth Stack and can be contacted at e.stack@ru.ac.za.

How do you become a participant? Please provide your email address below. An electronic consent form will be emailed to you and once you have signed the consent form, a link to the questionnaire will be provided.

Your answer

Thank you for your time

Rhodes University, Research Office, Ethical Review
Ethics Coordinator: ethics-commitee@ru.ac.za
t: +27 (0) 46 603 7314
Room 204, Main Admin Building, Drostdy Road, Makhanda, 6139

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Appendix C

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An investigation into the fairness and effectiveness of the South African Health Promotion Levy.

Rhodes University has given ethical clearance to this research project (2024 – 7945 – 8852) and you may request to see the clearance certificate by contacting the Ethics Coordinator (ethics-committee@ru.ac.za)

The purpose of the research project is to assess parents' response to the introduction of the Health Promotion Levy.

Please take this survey if you are the parent or legal guardian of a child/children attending a public school in Bloemfontein, Mangaung.

By participating in this research project, you will be contributing towards important and relevant research on the Health Promotion Levy's effectiveness after enactment in 2018. The findings and recommendations of this study are intended to be to the benefit of society, considering the negative impact of excessive sugar intake. The findings and recommendations may also be of benefit to tax policy decision-makers, legislators, and future researchers in the field.

Your participation in this project will involve completing an electronic questionnaire administered to you and, if you are willing, taking part in a semi-structured interview.

Your participation is entirely voluntary and should you not wish to participate, close this window now and do not click on the button below.

You will not be compensated for participating in the research.

The following risks are associated with your participation: The risk to the participants is identified as a low-level risk of harm, as parents may feel embarrassed if their children are still consuming sugary beverages. Should you experience any of the above, please be take note that the risk is mitigated by the information relating to anonymity and confidentiality in the consent form.

The research results of this project will be published in the form of a PhD Thesis and academic article(s) in approved academic journal(s). However, confidentiality and anonymity of records will be maintained, and your name and identity will not be revealed.

Ethics Coordinator, Rhodes University Research Office,
Room 204, Main Admin Building, Drostdy Road, Grahamstown, 6139
ethics-commitee@ru.ac.za t: +27 (0) 46 603 7314

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In terms of the Protection of Personal Information Act (No. 4 of 2013) you have the right to request the Researcher to provide you with a detailed explanation of exactly how confidentiality and anonymity of the data you provide will be achieved. You may also request to know exactly how your personal information will be stored securely, and for how long it will be stored.

Data collected from you for this research project will not be used by the researcher in a follow up study.

In terms of the POPI Act, you possess the right to receive feedback about this research. If you require feedback, please request that from Chrizanne Gerlach at g19g9608@campus.ru.ac.za.

Any further questions that you have regarding the nature of the research and/or your participation in it will be answered by Chrizanne Gerlach at g19g9608@campus.ru.ac.za.

By clicking on the link below I confirm that I have read the information above, and fully understand the purposes of the research and what is expected of me.

I have not been pressurised in any way and I voluntarily agree to participate in the project.

LINK TO THE QUESTIONNAIRE:
https://cut.questionpro.com/t/AMq0cZ2qnv

Ethics Coordinator, Rhodes University Research Office,
Room 204, Main Admin Building, Drostdy Road, Grahamstown, 6139
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Appendix D

RHODES UNIVERSITY
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PARTICIPANT INFORMED CONSENT DECLARATION

(To be signed by research participant/s)

Project Title: ***An investigation into the fairness and effectiveness of the South African Health Promotion Levy.***

Chrizanne Gerlach from the Department of Accounting, Rhodes University has requested my permission to participate in the above-mentioned research project.

The nature and the purpose of the research project and of this informed consent declaration have been explained to me in a language that I understand.

I am aware that:

1. The purpose of the research project is to assess parents' response to the introduction of the Health Promotion Levy.

2. Rhodes University has given ethical clearance to this research project (2024 – 7945 – 8852) and I may request to see the clearance certificate by contacting the Ethics Coordinator (ethics-committee@ru.ac.za)

3. By participating in this research project, I will be contributing towards important and relevant research on the Health Promotion Levy's effectiveness after enactment in 2018. The findings and recommendations of this study are intended to be to the benefit of society, considering the negative impact of excessive sugar intake. The findings and recommendations may also be of benefit to tax policy decision-makers, legislators, and future researchers in the field.

4. I will participate in the project by completing an electronic questionnaire administered to me and, if I am willing, take part in a semi-structured interview.

5. My participation is entirely voluntary and should I at any stage wish to withdraw from participating further, I may do so without any negative consequences.

6. I understand that I have the right to refuse to respond to any question that I would prefer not to answer.

7. I will not be compensated for participating in the research.

8. The following risks are associated with my participation: The risk to the participants is identified as a low-level risk of harm, as parents may feel embarrassed if their children are still consuming sugary beverages. This is mitigated by the information relating to anonymity and confidentiality in the consent form.

9. The Researcher intends to publish the research results in the form of a PhD Thesis and academic article(s) in approved academic journal(s). However, confidentiality and anonymity of records will be maintained, and my name and identity will not be revealed to anyone who has not been involved in the conducting of the research.

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10. In terms of the Protection of Personal Information Act (No. 4 of 2013) it remains my right to request the Researcher to provide me with a detailed explanation of exactly how confidentiality and anonymity of the data I provide will be achieved. I may also request to know exactly how my personal information will be stored securely, and for how long it will be stored.

11. Data collected from me for this research project will not be used by the researcher in a follow up study.

12. In terms of the POPI Act, I possess the right to receive feedback about this research. This will take the form of and electronic copy of the completed PhD Thesis, unless ***I elect not to receive this feedback.***

13. Any further questions that I might have regarding the nature of the research and/or my participation in it will be answered by Chrizanne Gerlach at g19g9808@campus.ru.ac.za.

14. By signing this informed consent declaration, I am not waiving any legal claims, rights, or remedies. A copy of this informed consent declaration will be given to me, and the original will be kept on record by the Researcher.

15. Should I elect to participate in a follow-up interview, I **agree** to the Researcher's use of voice recording of my comments and opinions during interviews, the purpose of which is to ensure the accurate recording of my views/responses. Furthermore, I have the right to request a copy of the interview transcriptions to confirm that my opinions are accurately recorded

I, ..., have read the above information / confirm that the above information has been explained to me in a language that I understand, and I am aware of this document's contents. I have asked all questions that I wished to ask, and these have been answered to my satisfaction. I fully understand what is expected of me during the research.

I have not been pressurised in any way and I voluntarily agree to participate in the above-mentioned project.

....

Participant's signature **Date**

Rhodes University, Research Office, Ethical Review
Ethics Coordinator: ethics-commitee@ru.ac.za
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Appendix E

RHODES UNIVERSITY
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ASSESSING PARENTS' RESPONSE TO THE INTRODUCTION OF THE HEALTH PROMOTION LEVY

EXPLORATORY QUESTIONNAIRE

Dear Participant,

The purpose of the research is to assess parents' response to the introduction of the Health Promotion Levy. Your participation is entirely voluntary and should you at any stage wish to withdraw from participating further, you may do so.

The researcher intends to publish the questionnaire results as part of a doctoral thesis and article(s) in accredited academic journal(s). The confidentiality and anonymity of your name and identity will be maintained and will not be revealed to anyone who has not been involved in conducting the research. To ensure your anonymity, please DO NOT INDICATE YOUR NAME ON THIS QUESTIONNAIRE.

In terms of the POPI Act, you possess the right to receive feedback about this research. If you require feedback, please request that from Chrizanne Gerlach at g19g9608@campus.ru.ac.za.

Any further questions that you might have regarding the research will be answered by Chrizanne Gerlach at g19g9608@campus.ru.ac.za.

Please complete the following questionnaire, which will take you approximately 20 minutes to complete. There are no right or wrong answers – please provide your honest response.

1

INSTRUCTIONS: Please place a tick in the appropriate block or write/type your answer in the space provided

PART A

DEMOGRAPHICAL INFORMATION

1. What is your gender identity?

Male	
Female	
Other	
Prefer not to say	

2. What is your race?

Black African	
White	
Coloured	
Indian	
Asian	
Other	

2.1 If you selected "Other", please indicate your race below:

3. What is your age?

years

4. What is your household income per month?

Less than R15 000 pm	
Between R15 001 and R30 000 pm	
Between R30 001 and R45 000 pm	
Between R45 001 and R60 000 pm	
More than R60 000 pm	
Prefer not to answer	

5. **What is your highest level of education?**

Primary level up to grade 7 (standard 5)	
Secondary level up to grade 10 (standard 8)	
Finished high school (grade 12/matric)	
Certificate	
Diploma	
Undergraduate degree	
Postgraduate degree	
Other	

5.1 If you selected "Other", please indicate your highest level of education below:

6. **What is your relationship to the child or children currently attending school?**

You can tick more than one block.

Biological mother	
Biological father	
Aunt	
Uncle	
Grandmother	
Grandfather	
Stepmother	
Stepfather	
Legal guardian	
Other	

6.1 If you selected "Other", please indicate your relationship below:

7. **How many children in your household are currently attending school (Grade R to Grade 12)?**

1 child	
2 children	
3 children	
4 children	
More than 4 children	

8. **What are the age(s) of the child or children currently attending school? Tick the appropriate block for each child.**

In case of more than four children, please answer the next question for only the four eldest children:

	Ages 5 - 9	Ages 10 - 13	Ages 14 - 18
Child 1			
Child 2			
Child 3			
Child 4			

PART B

QUESTIONS ON THE HEALTH PROMOTION LEVY

In order to complete this part of the questionnaire, please note the following definitions:

Health Promotion Levy: tax on sugar sweetened beverages (sugar tax).

Sugar sweetened beverages include the following: soft drinks, sweetened fruit drinks, sport and energy drinks, vitamin water drinks, sweetened ice-teas, sweetened milk drinks. **Excluded** from the definition: unsweetened milk products and pure fruit juices.

Please place a tick in the appropriate block for the following questions:

1. **Are you aware what a non-communicable disease is?**

Yes	
No	
Unsure	

2. **Are you familiar with the term 'sugar tax'?**

Yes	
No	
Unsure	

3. **Are you familiar with the term 'Health Promotion Levy'?**

Yes	
No	
Unsure	

4. **Has a tax on sugar sweetened beverages been introduced in South Africa?**

Yes	
No	
Unsure	

5. **Does the tuck shop of the school your child(ren) attend(s) sells sugar sweetened beverages?**

Yes	
No	
Unsure	

6. **Do you provide your child(ren) with money for the tuck shop where he/she/they could buy sugar sweetened beverages?**

Yes	
No	

7. **I provide my child(ren) with money for the tuck shop where he/she/they can buy sugar sweetened beverages on the following basis:**

Never	
Less than once a week	
Once a week	
Twice a week	
More than twice a week	
Daily	

8. **I, myself, consume the following amount of sugar sweetened beverages on a weekly basis:**

None	
0 – 1 litre	
1 – 2 litres	
2 – 3 litres	
3 – 4 litres	
More than 4 litres	

In order to answer the next statement, please note the following definition:

A fair tax: A fair tax is a tax where taxpayers who earn more than others pay more tax.

9. Do you perceive the current design of the Health Promotion Levy to be fair?

Yes	
No	
Unsure	

9.1 Please provide a reason for your answer above:

In order to respond to the next statement, please note the following definition:

An efficient tax: An efficient sugar tax design makes a meaningful impact on consumer behaviour to curb the prevalence of obesity, tooth decay and diabetes while keeping compliance and administration costs to a minimum.

10. Do you perceive the current design of the Health Promotion Levy to be efficient?

Yes	
No	
Unsure	

10.1 Please provide a reason for your answer above:

11. Do you believe the government is accountable and transparent regarding the revenue received from the Health Promotion Levy?

Yes	
No	
Unsure	

11.1 Please provide a reason for your answer above:

Please select (with a X) the most appropriate option for each of the statements below:

12. Frequent consumption of sugar sweetened beverages increases the risk of cavities in children's teeth.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

13. Frequent consumption of sugar sweetened beverages increases the risk of obesity.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

14. Frequent consumption of sugar sweetened beverages increases the risk of diabetes.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

15. In my opinion, other parents make decisions about drinks they buy for their children based on the ingredients rather than the price of the drink.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

16. In my opinion, other parents make decisions about drinks they buy for their children based on the price rather than the ingredients of the drink.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

17. In my opinion, other parents buy sugar sweetened beverages for their children without realizing the long-term impact of the consumption on their health.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

18. In my opinion, the announcement (before the actual implementation) of the Health Promotion Levy prompted other parents to purchase fewer sugar sweetened drinks for their children.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

19. In my opinion, the implementation of the Health Promotion Levy prompted other parents to purchase fewer sugar sweetened drinks for their children.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

20. In my opinion, the introduction of the Health Promotion Levy had no impact on how many sugar sweetened beverages other parents buy for their children.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

21. I make decisions about drinks I buy for my child(ren) based on the ingredients in the drink.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

22. I make decisions about drinks I buy for my child(ren) based on the price of the drink.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

23. The announcement (before the actual implementation) of the Health Promotion Levy prompted me to purchase fewer sugar sweetened drinks for my child(ren).

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

24. The implementation of the Health Promotion Levy prompted me to purchase fewer sugar sweetened drinks for my child(ren).

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

25. The announcement (before the actual implementation) of the Health Promotion Levy prompted me to purchase more drinks like diet soda, pure fruit juice, milk or water for my child(ren).

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

26. The implementation of the Health Promotion Levy prompted me to purchase more drinks like diet soda, pure fruit juice, milk or water for my child(ren).

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

27. The introduction of the Health Promotion Levy had no impact on how many sugar sweetened beverages I buy for my child(ren).

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

28. I believe that, by imposing a sugar tax on sugar sweetened beverages, the government limits taxpayers' rights to make their own choices.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

29. Currently, the South African government is not earmarking the revenue received from the levy for health promotion purposes but is using the revenue for the country's general budget. Considering this, I support the implementation of the Health Promotion Levy regardless of how the revenue received is being used by the government.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

30. I will only support the implementation of the Health Promotion Levy IF the total tax revenue will be earmarked for health promotion purposes.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

31. Recent research indicates that the current rate of the Health Promotion Levy does not have a meaningful effect in preventing tooth decay, obesity, and diabetes. If the government was to propose an increase in the Health Promotion Levy, it will result in a 20% increase in the retail price of sugar sweetened beverages. This means that a 2-liter soda drink which costs R27 before the increase will cost R32.40 after the increase of the Health Promotion Levy. Considering this, I support an increase in the Health Promotion Levy.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

32. I will only support an increase in the Health Promotion Levy on condition that the total tax revenue is earmarked for health promotion purposes.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

THANK YOU FOR YOUR PARTICIPATION

Appendix F

Dear Participant

Your willingness to participate in a short semi structured interview as part of my research study on the Health Promotion Levy is highly appreciated. Please keep in mind that your participation is entirely voluntary and should you at any stage wish to withdraw from participating further, you may do so at any time.

I have set out time for interviews from Monday, 14 October until Friday, 25 October 2024. Please bear in mind that the interview will take approximately 30 minutes and will be recorded. The interview questions will be emailed to you beforehand once participation has been confirmed.

Will you kindly reply to this email indicating which time during the abovementioned period will be suitable to you? The interview will be conducted on the premises of the Central University of Technology unless you wish to conduct it at place more suitable to you.

Confidentiality and anonymity of records will be maintained, and your name and identity will not be revealed to anyone who has not been involved in the conducting of the research.

Please feel free to contact me regarding any queries.

Kind Regards
Chrizanne Gerlach

Appendix G

RHODES UNIVERSITY
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PARTICIPANT INFORMED CONSENT DECLARATION

(To be signed by research participant/s)

Project Title: ***An investigation into the fairness and effectiveness of the South African Health Promotion Levy.***

Chrizanne Gerlach from the Department of Accounting, Rhodes University has requested my permission to participate in the above-mentioned research project.

The nature and the purpose of the research project and of this informed consent declaration have been explained to me in a language that I understand.

I am aware that:

1. The purpose of the research project is to assess parents' response to the introduction of the Health Promotion Levy.

2. Rhodes University has given ethical clearance to this research project (2024 – 7945 – 8852) and I may request to see the clearance certificate by contacting the Ethics Coordinator (ethics-committee@ru.ac.za)

3. By participating in this research project, I will be contributing towards important and relevant research on the Health Promotion Levy's effectiveness after enactment in 2018. The findings and recommendations of this study are intended to be to the benefit of society, considering the negative impact of excessive sugar intake. The findings and recommendations may also be of benefit to tax policy decision-makers, legislators, and future researchers in the field.

4. I will participate in the project by completing an electronic questionnaire administered to me and, if I am willing, take part in a semi-structured interview.

5. My participation is entirely voluntary and should I at any stage wish to withdraw from participating further, I may do so without any negative consequences.

6. I understand that I have the right to refuse to respond to any question that I would prefer not to answer.

7. I will not be compensated for participating in the research.

8. The following risks are associated with my participation: The risk to the participants is identified as a low-level risk of harm, as parents may feel embarrassed if their children are still consuming sugary beverages. This is mitigated by the information relating to anonymity and confidentiality in the consent form.

9. The Researcher intends to publish the research results in the form of a PhD Thesis and academic article(s) in approved academic journal(s). However, confidentiality and anonymity of records will be maintained, and my name and identity will not be revealed to anyone who has not been involved in the conducting of the research.

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10. In terms of the Protection of Personal Information Act (No. 4 of 2013) it remains my right to request the Researcher to provide me with a detailed explanation of exactly how confidentiality and anonymity of the data I provide will be achieved. I may also request to know exactly how my personal information will be stored securely, and for how long it will be stored.

11. Data collected from me for this research project will not be used by the researcher in a follow up study.

12. In terms of the POPI Act, I possess the right to receive feedback about this research. This will take the form of and electronic copy of the completed PhD Thesis, unless ***I elect not to receive this feedback.***

13. Any further questions that I might have regarding the nature of the research and/or my participation in it will be answered by Chrizanne Gerlach at g19g9608@campus.ru.ac.za.

14. By signing this informed consent declaration, I am not waiving any legal claims, rights, or remedies. A copy of this informed consent declaration will be given to me, and the original will be kept on record by the Researcher.

15. Should I elect to participate in a follow-up interview, I **agree** to the Researcher's use of voice recording of my comments and opinions during interviews, the purpose of which is to ensure the accurate recording of my views/responses. Furthermore, I have the right to request a copy of the interview transcriptions to confirm that my opinions are accurately recorded

I, ..., have read the above information / confirm that the above information has been explained to me in a language that I understand, and I am aware of this document's contents. I have asked all questions that I wished to ask, and these have been answered to my satisfaction. I fully understand what is expected of me during the research.

I have not been pressurised in any way and I voluntarily agree to participate in the above-mentioned project.

....

Participant's signature **Date**

Rhodes University, Research Office, Ethical Review
Ethics Coordinator: ethics-commitee@ru.ac.za
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Appendix H

ASSESSING PARENTS' RESPONSE TO THE INTRODUCTION OF THE HEALTH PROMOTION LEVY

INTERVIEW SCHEDULE

Dear Interviewee

Thank you for taking the time to be interviewed for my research. I have several questions I would like to ask you. Your responses are anonymous and will be kept confidential. You have the right not to participate in this interview and the right to withdraw from the interview at any stage.

1. Are you familiar with the Health Promotion Levy?
2. Are you in support of the Health Promotion Levy?
3. Are you in support of an increase in the Health Promotion Levy?
4. How does the price of a product influence your decision to buy it?
5. What was the consumption pattern of sugary beverages of your child before the implementation of the Health Promotion Levy on 1 April 2018?
6. What was the consumption pattern of sugary beverages of your child after the implementation of the Health Promotion Levy on 1 April 2018?
7. If there were any changes in consumption, what was the reason/s for the change?
8. Are you aware of links between health conditions and the consumption of sugary beverages?
9. How do you think the money received from the Health Promotion Levy should be applied by the government?

Chrizanne Gerlach
CA(SA), MCom (Taxation)

Contact details: g19g9608@campus.ru.ac.za

Chrizanne Gerlach

CA(SA), MCom (Taxation)

Contact details: g19g9608@campus.ru.ac.za

Appendix I

Rhodes University Human Research Ethics Committee
Main Admin Building, Drostdy Road, Makhanda, 6139, South Africa
PO Box 94, Makhanda, 6140, South Africa
t: +27 (0) 46 603 7314
e: ethics-committee@ru.ac.za
https://www.ru.ac.za/researchgateway/ethics/
NHREC Registration number: RC-241114-045

03 September 2024

Ms Chrizanne Gerlach

Email: g19g9608@campus.ru.ac.za

Review Reference: 2024-7945-8852

Dear Ms Gerlach,

Re: An investigation into the South African Health Promotion Levy and its potential effectiveness in raising parents' awareness of the health impact of sugary beverages

Researcher: Ms Chrizanne Gerlach

Supervisor(s): Prof Elizabeth (Lilla) Stack

This letter confirms that the above research proposal has been reviewed and **APPROVED** by the Rhodes University Human Research Ethics Committee (RU-HREC). Your Approval number is: 2024-7945-8852

Approval has been granted for 1 year. An annual progress report will be required in order to renew approval for an additional period. You will receive an email notifying you when the annual report is due.

Please apply for a protocol amendment should any substantive change(s) be made, for whatever reason, during the research process. This includes changes in investigators. Email your request to ethics-committee@ru.ac.za.

Please submit a brief report to the ethics committee on the completion of the research. The purpose of this report is to indicate whether the research was conducted successfully, if any aspects could not be completed, or if any problems arose that the ethical standards committee should be aware of.

If a thesis or dissertation arising from this research is submitted to the library's electronic theses and dissertations (ETD) repository, please notify the committee of the date of submission and/or any reference or cataloguing number allocated.

Sincerely,

Janet Hayward

Dr Janet Hayward

Chair: Rhodes University Human Research Ethics Committee (RU-HREC)

Appendix J

Central University of Technology, Free State

RESEARCH DEVELOPMENT & POSTGRADUATE STUDIES

24 May 2024

C Gerlach
Faculty: Management Sciences
Central University of Technology, Free State
BLOEMFONTEIN
E-mail: cdevilliers@cut.ac.za

Dear Ms Gerlach

AWARD FOR POSTGRADUATE STUDIES

1. We are pleased to inform you that the Research Grants and Scholarship Committee of the Central University of Technology, Free State has awarded you a grant for 2024 to the amount of R30 000 towards the completion of your Doctoral studies. This grant is from the DHET UCDG RD Grant (2024).

2. The grant must be expensed based on the budget in your application and **in line with CUT Procurement Procedures**. Please note that according to the grant scheme **no conference or tuition fees** can be funded from this grant. **The grant does not apply retrospectively. Please refer to Section 2.3 and 3 of the attached guidelines.**

3. The expenditure of the grant will be reviewed by end September 2024. The funding will be available as of 1 April 2024 and must be expensed by 30 November 2024 since no funding can be carried forward. Please note that all unspent funds will be forfeited by 30 December 2024. Should DHET approve the carry-forward of the grant to end March 2025, the grant extension will be communicated to the grant holders.

4. The release of your grant is conditional upon the acceptance of the grant and its conditions and your registration as a student. This letter must be returned within one month from the date when this letter was issued. Failure to do so will result in the cancellation of the award.

5. Your grant will be allocated as follows:

(a)	Project expenses	R30 000.00
	Total of Grant	**R30 000.00**

6. The amount specified under (a) above will remain within the centralised DHET account, as it will be managed by the Director: Research Development in collaboration with your Graduate Supervisor and Assistant Dean: Research Innovation and Engagement. Please note that you have to manage the project expenses in consultation with your supervisor. Should you over expense on your grant, then the money will be reimbursed by you.

7. The grant holder hereby grants the CUT/NRF/DHET or any other funding agency aligned with CUT permission in terms of the POPIA Act, to process personal information received from him/her for funding. For purposes of this sub-clause and any related provision herein, "process" and "processing" shall have meaning assigned to it in section 1 of the POPI Act."

We wish you success with your project.

MS KEM SEMPE
DIRECTOR: RESEARCH DEVELOPMENT

cc: Prof C Chipunza

Appendix K

Central University of Technology, Free State

RESOURCES AND OPERATIONS

28 January 2025

Rhodes University
Grahamstown

TO WHOM IT MAY CONCERN

This serves to confirm that per the Central University of Technology, Free State staff benefits, a bursary has been awarded to the following student for their studies during 2025 at your Institution. The Central University of Technology, Free State (CUT) is responsible for the payment of registration and tuition fees. Please note that the bursary applies to registration and tuition fees only, and excludes any other costs whatsoever related to their studies.

It is noted that the 2025 bursary does not cover fees related to re-writing/re-examination/repeating subjects and therefore this bursary excludes the costs associated with such subject(s)/module(s).

Details of Student

Initials and Surname:	C Gerlach
Staff Number:	13712
Division:	Teaching/Learning
Section/Unit:	Accounting/Auditing
Student Number:	19G9608
Qualification:	PhD in Commerce

Digitally signed by Dr. Reynell Van Der Ross
Date: 2025.01.29 09:09:58 +02'00'

DR. M.R. VAN DER ROSS
DEPUTY DIRECTOR: HR SPECIALIST SERVICES
HUMAN RESOURCES

Human Resources • Private Bag X20539 • Bloemfontein • SOUTH AFRICA • 9300 •
Tel: +27 051 507 3600 • E-mail: rjacobs@cut.ac.za • Website: www.cut.ac.za