

# The Eligibility of Tax Imposed On Sugar-Sweetened Beverages: A Literature Study

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**Abstract-** Tax policies can be formulated and implemented to prevent adverse health and social impacts on the community, especially on sweetened beverage products. It can be designed by designing a tax imposition model for products containing added sugar content. The writing of this article through a literature study can recommend to design a value added tax policy model for sugar-sweetened beverage products because it can have the eligibility to be applied by determining the definition of products containing sweetened beverages or referring to the classification of international standardization, determining the basis of taxation as an indirect tax on consumption, determine threshold levels of sweetened drinks in determining tariff levels in order to reduce consumption behaviour of sweetened drinks for consumers, and formulate levels of added sugar content for producers. Sweetened beverage tax revenues can be allocated to subsidize improved access to clean water in the area of a city/region with the highest consuming population of consumers, advocate for behaviour to reduce consumption of sweetened drinks, and become a source of tax revenue for the central government or local government which has the benefit of increasing the economy, social and public health.

**Index Terms-** Value Added Tax, Sugar-Sweetened Beverages, Policy Formulation

## I. INTRODUCTION

Additional sugar including Sugar-Sweetened Beverages has caused a negative impact on health, such as obesity, type 2 diabetes, cardiovascular diseases, cancer and adverse dental health (Powel, et.al, 2021). The sweetened beverages consist of 90% of water and the rest consist of additives, such as sweeteners, artificial colours, CO<sub>2</sub>, and/or preservatives. The sweeteners used in soft drinks are grouped into two categories, such as nutritive sweeteners consisting of granulated sugar, liquid sugar, liquid invert sugar, High Fructose Corn Sugar (HFCS) and dextrose as well as synthetic sweeteners (non-nutritive) (Rosyada & Ardiansyah, 2018).

Indonesia is in the third position in consuming the Sugar-sweetened Beverages within 20.23 litres/person of consumption in the Southeast Asian. A high consumption on Sugar-sweetened Beverages had contributed to high mortality and morbidity rates as a result of overweight, obesity, non-communicable diseases like diabetes and cardiovascular disease, and had increased the medical expenditures. However, the governance regulation in Indonesia did not create a regulation system to reduce high consumption on the Sugar-sweetened Beverages products (Fanda, et.al, 2020).

In 2018, the sweetened-beverages in Indonesian consumed at least once a week by 62% of children, 72% of teenagers and 61% of adults by a ready-to-drink tea became the great and rapidly growing Sugar-sweetened Beverages (SSB). A great market to sell unhealthy beverages has scattered in various places, such as schools, supermarkets and some hospitals (Morena, 2009; Moira Smith, et.al, 2019). A survey result with questionnaires on children's meal frequencies disclosed that 815 of them have consumed commercial snacks and 40% of them have consumed sweetened beverages one day prior to the survey conducted (Green, et.al, 2019). The data published by the Agency of Indonesian Health Research and Development (*Balitbangdes*) in 2014 disclosed that the daily consumption on carbonated beverages amounted to 2.4 millilitres (ml) per person.

The highest consumption was found in a group of 13 – 18 years old i.e., 4.7 ml/day (Mutaqin, 2018). In 2014, the total sales on SSB were 3.894 billion litres, in which the carbonated beverages contributed 944 million litres (24.2%), 167 million litres (16%) of juices, for a little more than 250 million people. Sales on SSB annual per capita in Indonesia was about 16 litres in 2014 compared to Singapore in which was more than 70 litres (Bourke, E.J & Veerman, J.L, 2018).

In accordance with the World Health Organization (WHO, 2016), it was necessary for the government to establish a fiscal policy to maintain the public consumption trend that can impact on diabetes. The research conducted by Escobar, et.al (2013), Eykelenboom, et.al (2019), Redondo, et.al, (2018), and Lumbreras (2018) described that tax on SSB could increase the tax amount and the tax on SSB also could become a fiscal policy to reduce a calorie and sugar overconsumption as well as increased a behaviour trend to consume the

healthier products. Tax on the sweetened beverages had a potency to reduce a calorie and sugar consumption and increased an intention to do a reducing consumption behaviour in the future at least increased by 20%.

A lot of countries such as Mexico, France, Hungary, Finland, Norwegian, Belgium, Chile and Barbados have imposed tax on Sweetened Sugar Beverages (SSB) as a fiscal action to reduce the sugar consumption from beverages (Jones, et.al, 2017). In Seattle, as one of the federated states of the United States of America has imposed tax policy on the sugar-sweetened beverages that were classified to the size and the type (Powel, et.al, 2021). Meanwhile, the United Kingdom, Ireland and South Africa were classified as the countries that propose the tax on sugar-sweetened beverages (Jones, et.al, 2017). Tax on Sugar-sweetened beverages were much more implemented in lots of countries as a policy tool proposed to reduce its consumption. This tax was usually implemented on sodas, fruits, sport and energy beverages, and sweet teas/coffees. The tax has not been implemented to a kind of sweet milks/flavours with additional sugar and to non-sugar beverages such as juices or teas/coffees with sugar added separately by the consumers (Powel, et.al, 2021).

As observed in the implementation of tax policy on sweetened beverages that applied in Sri Lanka, most citizens who consumed the sweetened beverages were the poor and the middle class, therefore their country imposed 15% of VAT on the sweetened beverages. This scheme was expected to be able to reduce their lost income and spent money when they were sick (WHO, 2018). In Mexico, after imposing 10% for tax on the sweetened beverages, this country has succeeded in reducing 6% of the sweetened beverages that the entire population consumed (Alvarez-Sanches, et.al, 2018). In the UK, the tax has encouraged a leading sweetened beverages industry to reformulate. The industry has reduced the level of sugar added to their products by half (Roache S.A & Gostin, 2017).

Intervention outside the health care system could significantly impact the health of a country as recognised as a framework of WHO called 'health-in-all-policies' (Leppo, et.al, 2013). As reviewed from Indonesian administration system and taxation policies, it was also recognised taxes on other consumptions, such as Value Added Tax (VAT), Luxury Goods Sales Tax (LGST) or Local Tax. Hence, in this journal will be conducted a literature study related to the eligibility of VAT imposed on the sweetened beverages in Indonesia. This journal aims to describe the factors determining the eligibility of VAT imposed on sweetened beverage products in Indonesia through a literature study.

## II. LITERATURE STUDY

### Tax Imposition Model on Sweetened Beverages

In formulating a tax imposition model on sweetened beverages, there was a main consideration required by policy makers – that is determining the tax base. It means, determining specific products that would be subject to tax. In terms of sweetened beverages, the public health goals to reduce sugar consumption by suggesting a tax imposition on all sweetened beverages, including water-based sweetened beverages (carbonated beverages, energy beverages, sport beverages/isotonic, juice and fruit or vegetable beverages), sugar-sweetened coffee, coffee substitute, tea and herbal infusion drinks (tea/coffee), sugar-sweetened milk and milk-based beverage products (sugar-sweetened milk/flavour and yoghurt), and concentrate, powder, and syrup used to make sweetened beverage products by adding water or carbonated water. Even though flavour or sweetened milks were significant contributors for consumption of sweetened beverages for the children which were generally not classified to the beverage tax base (Pan American Health Organization, 2020).

As observed from taxation, tax on sweetened beverages has been implied with a single rate, either based on volume (tax as specific) or based on product value (*ad valorem*) which a tax base covered all beverage products that were subject to tax using a single rate. Even though, single *ad valorem* customs or volume-based specific customs possessed an important virtue in implementation that not gave incentive to the customers to turn to non-sweetened beverage products or to the beverage industries reformulate the products to reduce sugar contents in every sweetened beverage product packaging (Pan American Health Organization, 2020).

Tax on sweetened beverages can be designed with separated layers based on the threshold which tax rate varies (for example Chile, Peru and the UK) or can be based on continuum (not a separated layer) of sugar content in a sweetened beverage product.

Meanwhile, the layered tax approach has attracted an increasing interest to the policy makers globally although still had inquiries pertaining to the determination of an appropriate tax threshold in terms of impact on consumption, reformulation, and income earned from taxes. When considering it, a tax design of sweetened beverages in layers can depict an actual distribution of most commonly consumed sweetened beverages based on sugar content which can assist in informing the threshold options in accordance with a layered tax structure (Pan American Health Organization, 2020).

Consumption of sweetened beverages in urban areas of low- and middle-income countries tends to increase. One of the policy tools expected to reduce the consumption on sweetened beverages is tax, which is conducted by valorising the sweetened beverages in a certain region, that can be a city, a federated state or a country. A tax implementation on sweetened beverages is seen as effective and able to gain success in changing the consumption trend of sweetened beverages, so that it was necessary for the policy actors to formulate (Collin & Hill, 2019).

In designing a tax on sweetened beverages, it could be developed the various simple indicators to obtain heterogeneity at tax design of a country. It performed an evaluation if the tax complied on a uniform or tiered design. If the level of sugar was utilised as a tax basis, and whether it applied on bottled water to distinguish the sweetened beverages and non-sweetened beverages. Ultimately, the assessment is if the definition of a taxable product including sweet milk, energy beverage, and powder, concentrate, or syrup that used to make the Sugar-Sweetened Beverages (SSB) by adding water or carbonated water, to evaluated if every tax applies on the wide or gap-covered range of Sugar-Sweetened Beverages (SSB), giving an incentive on undesirable substitution, and performing a tax evasion (Sandoval, 2021).

The countries that had imposed tax on the sweetened beverages defined the taxable products in different ways. As observed from every country, Caribbean and some Latin American countries (dominantly in Central America) used the rate codes that aligned with the international standard nomenclature to classify the traded products in determining the taxable products, though it has a various rate tier range. The most important point is the rate tier aligned with the definition of the sweetened beverages based on sugar added. For example, Ecuador has imposed certain amounts of tax to the Sugar-Sweetened Beverages (SSB) with sugar concentrate above a specified threshold and *ad valorem* tax on the SSB under a specified threshold. All energy beverages regardless of sugar concentration would be subject to *ad valorem* tax.

As for *ad valorem* tax, the tax basis is defined as a tax product value that is able to assess at various stages of the value chain, such as producer's product applied in Barbados, Brazil, Dominica, Mexico and Paraguay. *Ad valorem* tax rate was applied at the lesser value, reducing tax impact on the ending retail price. Besides that, the components of *ad valorem* also can be used with tax basis of the beverages that are produced locally that are determined later at the value chain closer to the ending retail price (Sandoval, 2021).

One of tax imposition models that is able to generate income can be viewed in the United States of America, with income from tax on soft drinks amounted to 70 billion US Dollar per year. The income from tax can be used to support various obesity reduction programmes, nutrition programmes at school, or to fund the foundations that advocate for health, including a continuous reduction of sweetened beverages consumption. Income from tax also can be used to subsidise a region that consumes the sweetened beverages and has no access to clean water – it can be refurbished the access on piping to clean water (Escobar, et.al, 2013).

### III. EXPLANATION

#### **The Effectiveness of Tax Policy on Sweetened Beverages**

Tax imposition on sweetened beverages has a positive impact on purchasing and consumption, and was seen as effective in reducing the purchasing and the consumption of sweetened beverages (Moise, et.al, 2011; Isett, Laugesen, & Cloud, 2015; Nixon, et.al, 2015; Francis, et.al., 2017). Generally, this confidence was raised from a confidence that the price was an important factor in purchasing decisions (Chan, et.al, 2009). Nevertheless, Tamir, et.al (2018) explained that a scepticism pertaining to the political acceptability of an effect of reducing the consumption among legislators, policy makers, and regulators has been raised. Furthermore, there was another study that explained the decreasing in the prices of sweetened beverages has raised as a result of the tax would not impact on the purchasing and the consumption of sweetened beverages (Chan, et.al, 2009; Thomas-Meyer, Mytton, & Adams, 2017; Tamir, et.al., 2018; Ortega-Avila, Papadaki, & Jago, 2018; Swift, et.al, 2018).

Particularly, tax imposed on sweetened beverages was assumed to be ineffective to those who have addicted to the sweetened beverages (Chan, et.al, 2009; Krukowski, et.al, 2016; Thomas-Meyer, Mytton, & Adams, 2017; Ortega-Avila, Papadaki, & Jago, 2018), those who were less aware of the beverage prices (Giabbanelli, Adams, & Pillutla, 2016; Thomas-Meyer, Mytton, & Adams, 2017; Ortega-Avila, Papadaki, & Jago, 2018), those who were obesity, and the rich people, as well as the stubborn people (Krukowski, et.al, 2016).

In the studies that examined the political acceptance disclosed that tax on the sweetened beverages was seen as effective in increasing results related to the healthy, such as the obesity and the diabetes (Lloyd-Williams, et.al, 2014; Isett, Laugesen, & Cloud, 2015; Nixon, et.al, 2015; Signal, et.al, 2018). It tends to relate to the confidence on scientific evidence of a detrimental health effect from a sweetened beverage and an advantageous healthy effect from tax imposed on the sweetened beverages (Isett, Laugesen, & Cloud, 2015; Signal, et.al, 2018; Purtle, Langellier, & Le-Scherban, 2018). However, there were literatures that disclosed a scepticism on tax effectiveness in decreasing the result related to the health observed in the study about a public acceptance. Consequently, some researches among the society have reported a confidence that the tax imposed on the sweetened beverages could improve the health of the citizen (Nixon, et.al, 2015; Signal, et.al, 2018; Swift, et.al, 2018), while others disclosed that such policy did not cure anything (Giabbanelli, Adams, & Pillutla, 2016; Thomas-Meyer, Mytton, & Adams, 2017; Ortega-Avila, Papadaki, & Jago, 2018).

As reported in some studies, there was an assessment that the impact on the prices of sweetened beverages has experienced an anxiety (Giabbanelli, Adams, & Pillutla, 2016; Krukowski, et.al, 2016; Thomas-Meyer, Mytton, & Adams, 2017; Signal, et.al, 2018; Ortega-Avila, Papadaki, & Jago, 2018). It was raised from a confidence that the tax on sweetened beverages might not be distributed to the consumers due to industrial intervention and sweetened beverage vendors (Moretto, et.al, 2014; Giabbanelli, Adams, & Pillutla, 2016; Thomas-Meyer, Mytton, & Adams, 2017; Signal, et.al, 2018). Apart from that, the proposed tax rate was too low to make a big impact on the prices of sweetened beverages (Moretto, et.al, 2014; Krukowski, et.al, 2016; Thomas-Meyer, Mytton, & Adams, 2017; Ortega-Avila, Papadaki, & Jago, 2018). Hence, Moretto et.al (2014) and Krukowski et.al (2016) have expected 50% to 100% of tax rate in order to change the consumer behaviour profoundly enough.

As for encouraging the industry to reformulate the ingredients of sweetened beverages, Thomas-Meyer, Mytton, and Adams (2017) explained that the tax imposed would encourage industry to reformulate the ingredients of sweetened beverages they produced. As an illustration, a producer will reduce the amount of sugar as a result of tax that is viewed as a potential facilitator in the effectiveness of tax on sweetened beverages. Moreover, the tax on sweetened beverages was assessed as an intervention to cost savings that is useful to improve the public health nutrition and the obesity prevention (Lloyd- Williams, et.al, 2014; Giabbanelli, Adams, & Pillutla, 2016; Tamir, et.al, 2018).

#### **Eligibility of Tax Policy on the Sweetened Beverages**

In this context, the tax on sweetened beverages is viewed as an intervention strategy, an intervention target and the assumption of contribution of sweetened beverages on an overweight and obesity. Therefore, taxation is an intervention strategy. Moise et.al (2011) took samples in Mexico and European countries that there was a necessity for a government intervention to oppose the consumption of sweetened beverages.

The regulation instruments including taxation have become a suitable policy tool (Moise, et.al, 2011). Moreover, the decision makers have referred to the usage of taxation on tobacco and alcohol (Thow, et.al, 2011; Isett, Laugesen, & Cloud, 2015; Signal, et.al, 2018). The comparable existence and success of tax has contributed to a confidence that taxation is a suitable intervention strategy to reduce the usage of sweetened beverage products. Taxation is considered necessary according to Moise et.al (2011) and Thomas-Meyer, Mytton, and Adams (2017) who stated that such a policy was necessary when a person could not be responsible for their own behaviour. However, in other studies regarding politics (Tamir, et.al, 2018) and public acceptance (Nixon, et.al, 2015; Giabbanelli, Adams, & Pillutla, 2016; Thomas-Meyer, Mytton, & Adams, 2017) stated that taxation was viewed as a government intervention.

Sweetened beverages as an intervention target had a correlation to the political acceptability conducted among the senior policy makers from fourteen European countries and politicians and bureaucrats from New Zealand (Lloyd-Williams, et.al, 2014; Signal, et.al, 2018). For example, a politician from New Zealand disclosed that a soft drink was cheaper than healthy alternative products (Signal, et.al, 2018). Nevertheless, in a study regarding political acceptability, Israel's regulator treated the sweetened beverages as 'a source of pleasure' and; therefore, feeling that 'imposing tax to them would disadvantage the public' (Tamir, et.al, 2018).

Some studies regarding public acceptance have reported the confidence on the eligibility of sweetened beverages as an intervention target (Moise, et.al, 2011; Isett, Laugesen, & Cloud, 2015; Nixon, et.al, 2015). It tended to correlate to the confidence concerning the sweetened beverages contribution to obesity (Swift, et.al, 2018), and the confidence concerning the sweetened beverages price (Visram, et.al, 2017). Those who supported that tax and believed that the sweetened beverages were a main contributor of obesity, while the opponents denoted lack of personal evidence that the sweetened beverages could cause obesity and referred to a lot of other obesity defining factors. Concerning the sweetened beverage price, Visram, et.al (2017) has disclosed that some current energy beverages were cheaper than drinking water.

In terms of the sweetened beverages' contribution to overweight and obesity, it depends on the people's confidence in being overweight and obesity. For instance, Telluride people in the United States of America apparently did not feel that obesity was a local health problem that needed to be handled and therefore they opposed tax imposition (Nixon, et.al, 2015). Apart from that, in the UK it was said that the people with overweight and obesity were their own responsibility (Thomas-Meyer, Mytton, & Adams, 2017). The confidence concerning responsibility attribution for overweight and obesity associated to 'taxation as an intervention strategy' sub-theme, as there was a paradigm assumed that tax on the sweetened beverages was not fair to the 'healthy' people who responsibly consumed the beverages (Thomas-Meyer, Mytton, & Adams, 2017).

### **The Economics and Socioeconomics Advantages of Tax Policy on the Sweetened Beverages**

Tax imposed on sugar-sweetened beverages had a potency to increase income for social health programme (such as prevention funds, sport fields and recreational activities) and was considered as a positive consequence of implementation of taxation (Nixon, et.al, 2015; Giabbanelli, Adams, & Pillutla, 2016; Thomas-Meyer, Mytton, & Adams, 2017; Tamir, et.al, 2018; Purtle, Langellier, & Le-Scherban, 2018).

Besides that, tax imposition on sugar-sweetened beverages could increase income for health care. Tax potency of sweetened beverages to increase income for health care (such as for a National Health Service) was identified by some studies (Thow, et.al, 2011; Isett, Laugesen, & Cloud, 2015; Thomas-Meyer, Mytton, & Adams, 2017). For an example, Isett, Laugesen, and Cloud (2015) explained that Governor Patterson from New York, the United States of America opined that tax can help funding care costs to those who were obese. Some studies disclosed that tax on sugar-sweetened beverages was viewed as a potential to increase income for the general budget (Thow, et.al, 2011; Nixon, et.al, 2015; Isett, Laugesen & Cloud, 2015; Tamir, et.al, 2018). For instance, tax was considered to increase income to balance the city budget in El Monte, the United States of America (Nixon, et.al, 2015), compensated for the loss due to reduced rate in Fiji (Thow, et.al, 2011) and compensated decreasing in phosphate mining revenue in Nauru (Tamir, et.al, 2018).

Anxiety pertaining to the negative impacts of tax on sweetened beverages to the economics was reported in some studies (Giabbanelli, Adams, & Pillutla, 2016; Krukowski, et.al, 2016; Signal, et.al, 2018; Tamir, et.al, 2018), such as anxiety pertaining to the job reductions and the discontinuation of sweetened beverage companies as a result of a tax imposition. Moreover, a bureaucrat from New Zealand disclosed the necessity of more scientific evidence about tax impact on sweetened beverages to the economics and the productivity (Signal, et.al, 2018).

The socioeconomic equality impact on tax on sweetened beverages was believed to have a positive impact on the equality in health (Signal, et.al, 2018; Purtle, Langellier, & Le-Scherban, 2018). As an illustration, Philadelphia Local Health Department, the USA, stated that tax on sweetened beverages could adapt to a health gap. However, in a study about a political acceptance conducted in Israel (Tamir, et.al, 2018) and in most studies concerning a public acceptance (Nixon, et.al, 2015), there were reports concerning the anxiety concerning a negative impact of tax on sweetened beverages to socioeconomic equality. The anxiety mainly came up from a confidence that tax on sweetened beverages was regressive (Swift, et.al, 2018). People with low income should spend their income much more and consume a great number of sweetened beverages (Thomas-Meyer, Mytton, & Adams, 2017).

### **Adoption and Implementation of Tax Policy on Sweetened Beverages**



Tax implementation on sweetened beverages was considered to be reasonable (Moise, et.al, 2011; Thow, et.al, 2011; Moretto, et.al, 2014; Lloyd-Williams, et.al, 2014; Thomas-Meyer, Mytton, & Adams, 2017; Signal, et.al, 2018). Some perceived barriers in implementing tax on sweetened beverages were identified. Examples of barriers such as a long lawmaking process in Mexico and the United Kingdom (Moise, et.al, 2011; Swift, et.al, 2018), a competing national agenda in Mexico and the United Kingdom (Moise, et.al, 2011), complication in determining which products were to subject to tax (Tamir, et.al, 2018) in Israel and the United Kingdom, complication in 'unlabeled, homemade product' in Mexico (Moise, et.al, 2011), a black market development in Israel (Tamir, et.al, 2018), a high administration expense in New Zealand (Signal, et.al, 2018), and a taxation politics expenses in European countries (Lloyd-Williams, et.al, 2014).

In some studies, disclosed confidences about a support of stakeholders (Thowm et.al, 2011; Moise, et.al, 2011; Nixon, et.al, 2015; Krukowski, et.al, 2016; Thomas-Meyer, Mytton, & Adams, 2017; Signal, et.al, 2018; Tamir, et.al, 2018), to four stakeholder groups could be identified, such as sweetened beverage industries (for example producers, supermarket chains and catering companies), society (for example consumers), government (for example policy makers, politicians and ministries) and public health experts (for example health professionals and scientists).

Lack of support from stakeholder groups was identified as a considerable barrier to policy adoption and implementation. Particularly, the resistance from the sweetened beverage industry was described as complicating a policy adoption and implementation. The lobbying on the sweetened beverage industry and the relationships between industry and politicians were disclosed in most studies. The sweetened beverage industry was considered possessing considerable political power. As illustration, a Health Ministry officer has disclosed that a legislative effort to impose tax on sugar-sweetened beverages systematically has been blocked (Moise, et.al, 2011).

Tax policy on sweetened beverages will be effective if there is any trust in existing stakeholders. Nevertheless, some literature that explained distrust in three stakeholders such as industries, government, and public health experts were found. Distrust in industries were identified in some studies about public acceptance on tax on sugar-sweetened beverages (Krukowski, et.al, 2014; Nixon, et.al, 2015; Signal, et.al, 2018; Swift, et.al, 2018) which considered the activities of sweetened beverage industries were false as not care about safety and health (Nixon, et.al, 2015).

Distrust to the government tends to associate to a scepticism about the real purposes of the tax. There was a paradigm that felt that the tax was not really intended to improve health (Thomas-Meyer, Mytton, & Adams, 2017). Hereinafter, a distrust of the government was reported in a study conducted by Tamir et.al (2018) who took Israel's regulator and legislator cases by indicating that the Ministry of Finance would not utilise income earned for health purposes. On the other hand, distrust of public health experts was declared in a study (Thomas-Meyer, Mytton, & Adams, 2017). The scepticism to public health experts associated with information trust about sweetened beverages and tax on sweetened beverages provided by public health experts.

#### IV. CONCLUSION

This article concludes that the tax policy model on the assessment of effectiveness, the eligibility, the economic benefits and socioeconomics, up to the adoption and the policy implementations have an important implication to a successful implementation of tax on the sweetened beverages. It is necessary to utilise a revenue-raising approach for health initiatives instead of for general budgets, transparently communicate the real purpose of a tax, and political will as a solution to face the adoption challenges and the policy implementations.

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