



## Use and Control of Tobacco in the Philippines: Excise Taxes, Death Toll, and Mortality Rate

Edgardo S. Delmo<sup>1</sup>, Rosanna Florencia A. Ulep<sup>2</sup>, Jackie D. Urrutia<sup>3</sup>,

Sheryl R. Morales<sup>4</sup>, Emejidio C. Gepila Jr.<sup>5</sup>, Randy D. Sagun<sup>6</sup>,

Francis Leo T. Mingo<sup>7</sup>, Alma C. Fernandez<sup>8</sup>, Jefferson A. Costales<sup>9</sup>, Marvin B. Mas<sup>10</sup>,

John Casper D. Morada<sup>11</sup>

<sup>1</sup>corresponding author, Polytechnic University of the Philippines, [esdelmo@pup.edu.ph](mailto:esdelmo@pup.edu.ph)

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**Abstract:** The Philippines is one of the countries with the largest number of smokers among its adult population, averaging around 17 million users. Data from the Department of Health shows that in 2018, smoking is responsible for 71 percent of lung cancer deaths worldwide. Locally, about 10 Filipinos die every hour in tobacco-related diseases. Thus, initiatives to increase on tobacco excise taxes are implemented to address the concern. This study reviews the trend on the following: the country's revenue from tobacco excise taxes and its relationship in tobacco prevalence rate; the number of smoking-related deaths; and the mortality rate in terms of tobacco smoking. To effectively review the data from year 2000 to present and compare it to neighboring Southeast Asian countries, this study utilized meta-analysis. The data are gathered from credible journal articles and sites such as the Philippine Health Statistics and OECD. The collated and reviewed figures suggest that the smoking prevalence is in a decreasing rate while the revenue from the tobacco excise taxes is generally increasing since 2012; the number of deaths in smoking is in constant rise and is predicted to continue rising; and the mortality rate per 100,000 Filipinos did not show significant fluctuation.

**Keywords:** tobacco-related diseases; tobacco excise taxes; smoking-related deaths; tobacco mortality rate

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### Introduction

The tobacco industry in the Philippines has been around since the Spanish era. Over the decades, tobacco smoking has become a popular part of the Filipinos' cultural heritage. However, it has also become one of the unhealthy habits of the country's population.

There are several severe health concerns related to smoking and even secondhand smoking—the instance of inhaling tobacco smoke indirectly from a nearby user or source (Cleveland Clinic, 2020). According to the World Health Organization, tobacco use and exposure is responsible for approximately 12 percent of deaths related to heart diseases globally. Meanwhile, the Philippine's Department of Health (DOH) revealed in a 2018 conference that the leading causes of death in the country remain to be ischemic heart diseases, along with other non-communicable illnesses linked to smoking. These are cancers, stroke, hypertension, and diabetes mellitus as specifically listed by the Philippine Statistics Authority (PSA). More importantly, smoking is found to be responsible for 71 percent of deaths caused by lung cancer around the globe. In the Philippines alone, the leading form of cancer is lung cancer and 10 Filipinos die per hour due to causes directly related to smoking (Official Gazette of the Republic of the Philippines, 2012).

With this, such health concern is recognized as one of the main reasons for the Republic Act No. 10351 or the Sin Tax Reform Act of 2012. Specifically, the main objective of the law is to help in preventing people from smoking or at least reduce their consumption of it (Congressional Policy and Budget Research Department, 2018). This intent was addressed by the reform through imposing higher taxes on tobacco products.

Aside from the initiative to improve public health through preventing higher consumption of tobacco products, the Sin Tax Reform Law's another objective is to gain revenue from the excise taxes for the funding of the universal healthcare campaign (CPBRD, 2018). This campaign includes the wider coverage of health insurances for the Filipinos, especially to indigents and senior citizens.

To get more accurate figures on the relationship of tobacco use with the excise taxes as well as its health risks, it is necessary to observe first the total number of smokers in the country before and after its implementation. According to the Philippine Health Statistics (PHS), in 2010, couple of years before the implementation of the Sin Tax Reform Law, there are around 17.9 million adult tobacco users in the country. This accounts to 28.6 percent tobacco use prevalence in the adult population. In 2012, upon the implementation of the additional excise taxes, the smoking went down to 27.4 percent tobacco use prevalence. Although this still equates to around 17.7 million

smokers, it is significant to note that there has been an increase of 2 million people in the adult population. The most recent numbers recorded in 2019 remains to be around 17.4 million smokers, however, this is against 74.4 million adult population – an almost 12 million-increase in population number from 2010. This means that the smoking prevalence from 2010 to 2019 dropped significantly by 5.2 percent. The decrease in number of user prevalence may suggest that the excise taxes implemented might have influenced the figures.

Additionally, as technology advances, even the way of smoking has evolved. Nowadays, smoking can be classified into two main divisions: vaping and cigarette smoking. Vaping is inhaling aerosol that contains nicotine and other chemicals that produce flavors. Essentially, vapes deliver nicotine through liquid heating while traditional smoking burns tobacco to deliver the same chemical (Fletcher, 2022). As of 2015, the Philippines recorded 591,768 vapers. In 2019, the DOH (Philippine News Agency, 2021) reported that there has been a 110 percent increase with the numbers since then. Specifically, the vaping community went from 11.7 percent usage to 24.6 percent. These data are presented in the graphs below.

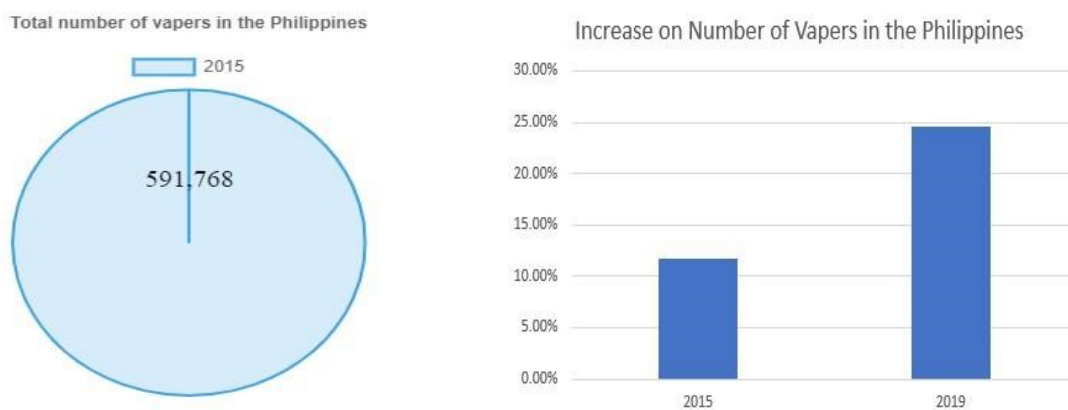


Figure 1 Increase in Number of Vapers in the Philippines (2015 and 2019)

Although there is still a continuous argument involving the consideration of vapes as tobacco products globally, for the purpose of this study, vapes along with other heated tobacco products will be covered in the discussion of data.

With this, it is important to discuss the current status of the Philippines in terms of the impact of the excise taxes collected from tobacco products to the governments' health initiative and the number of smokers in the country. Furthermore, the trends in death counts as well as on the general mortality rate in terms of tobacco smoking are significant to review. Consequently, it will be noteworthy to put such local data beside those of the country's neighboring countries in Southeast Asia (SEA) for the reason that this part of the continent is considered to have the greatest number of smokers. It houses about 10% of the world's smokers with about 560,000 tobacco-related deaths last 2016 (Amul and Pangestu, 2018). Seeing the difference or similarity with the data between the Philippines and other SEA countries can contribute to the deeper understanding of the current local data and the possible reasons behind the rise and fall of the numbers.

Thus, in line with the discussion above, this study seeks to uncover and understand the facts and evidence of tobacco-related products in the Philippines, as well as their comparison with communicable and noncommunicable diseases from the year 2000 to present. Specifically, the study intends to review and discuss the following: (1) the revenue of the Philippine government in tobacco excise taxes; (2) the death toll linked to combustible cigarette tobacco smoking; and (3) the mortality rate linked to the use of tobacco and EVALI. The gathered data from several resources and other related literature and studies will be systematically reviewed and analyzed. The specifications of the methods are expounded in the next section.

Furthermore, the results and conclusions will be significant to health professionals and advocates, especially to those who are working towards tobacco control interventions, as well as to the researchers who are involved in understanding the major influence of tobacco smoking in the community. The discussion will also be significant to the government bodies involved in taxation and law reforms. This review may as well be beneficial to businesses related to the tobacco industry.

**Methodology**

**Data Analysis Method**

In order to effectively analyze and discuss the objectives of this study, meta-analysis will be used. Meta-analysis is a statistical method of combining results from different studies to weigh and compare and to identify patterns, disagreements, or relationships that appear in the context of multiple studies on the same topic (Davis et al., 2014).

For this particular study, the researcher specifically utilized a meta-synthesis analysis. A meta-synthesis analysis will include a meta-regression and an explanation of the findings. Ewing and Cervero (2010), for example, used meta-analysis to examine the relationship between smoking variables (education, ethnicity, cups of coffee per day, diagnosis of current alcohol abuse/dependence, personality disorder) and the built environment. The employment of such method strengthened the discussion and made a more comprehensible comparisons of data related to the government’s revenue from the tobacco excise tax before and after the implementation of the Sin Tax Reform Law, the death toll linked to combustible cigarette tobacco smoking in the Philippines and other Southeast Asia countries, and the mortality rate linked to the use of tobacco and e-cigarettes.

**Data Gathering and Preparation**

The statistical reports and similar related studies to be compared and reviewed are searched and selected based on the following criteria: data should cover reports from the year 2000 to 2019 and they must be from accredited and/or credible journals, research papers, or health websites. To ensure that the resources selected and used are highly relevant, the researchers are guided by asking whether the material contain information significant to the stated objectives of the paper and if the information stated in the materials are well-supported and if they provide references.

**Flow Diagram**

The diagram below is established for visualization of the analysis process.

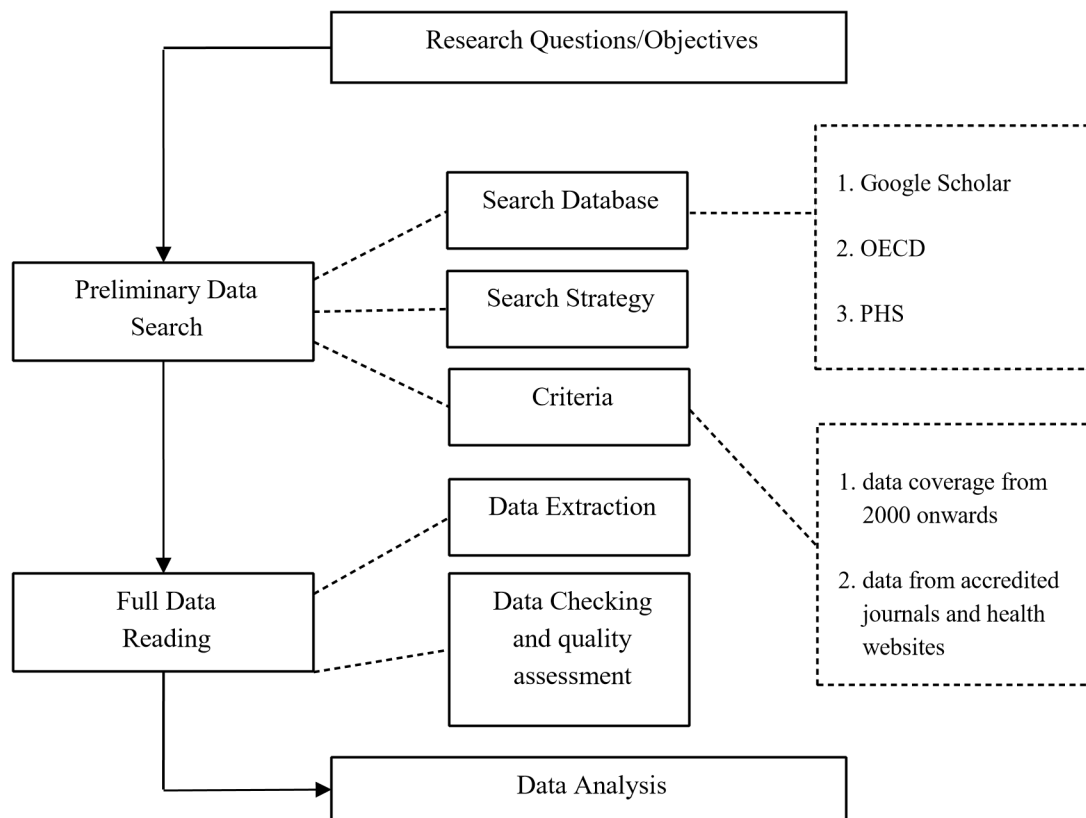


Figure 2 Research Flow Diagram

The diagram shows that the process of this comparative analysis begins with the identification of the research questions or objectives. There are three major steps to accomplish: preliminary data search, full data reading, and

data analysis. In the initial step, the data search is conducted through determining the search databases to be used. In this case, the researchers focused on the major platforms of Google Scholar, OECD, and Philippine Health Statistics (PHS). Meanwhile, a regular searching strategy is used but with the help of specific criteria. First, the data to be searched must be from year 2000 onwards and they must be from accredited journals and health websites. After the preliminary data search, a full data reading is done. This process includes the extraction of data from the determined sources and search results. After the data extraction, the information gathered underwent checking and quality assessment. This is significant to filter out only the relevant details needed to achieve the research objectives. Finally, data analysis is done following the method discussed in the Data Analysis Method section.

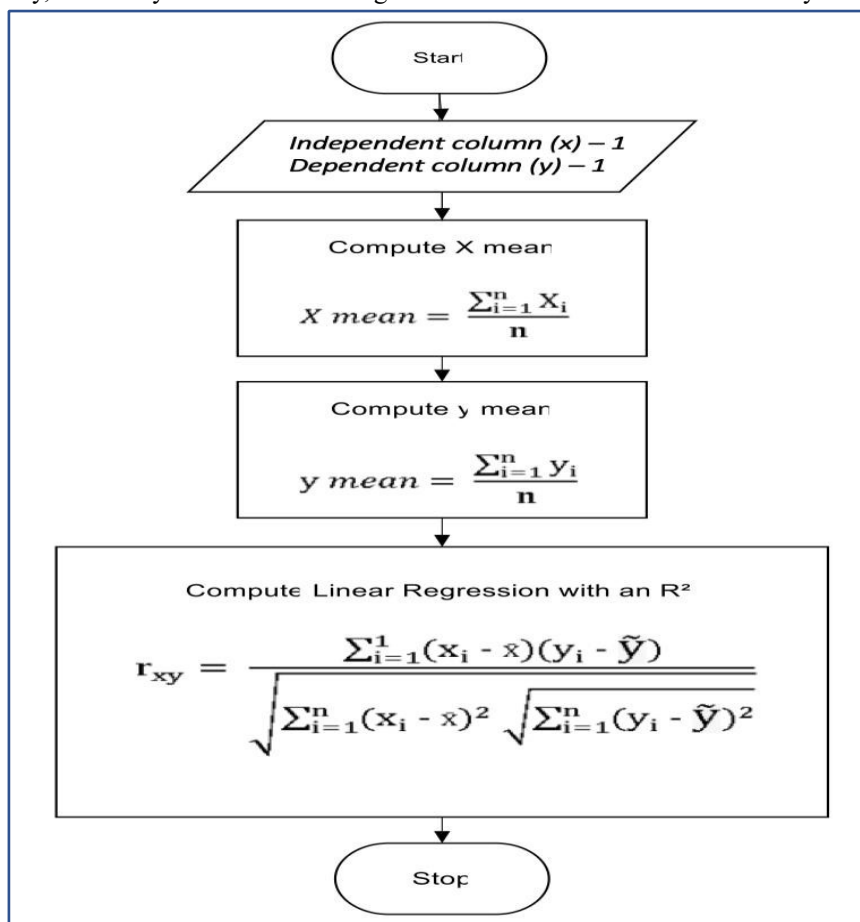


Figure 3. Flowchart

The study also use algorithm, as shown in Figure 3, tool to provide prediction. Using the coefficient of determination, or  $R^2$ , we may determine the strength of the relationship between the model's response and predictor variables. Attributed to the reason that it is essentially the square of the correlation coefficient  $R$ , its values range from 0.0 to 1.0.

Consider the case where  $R^2$  is 0.65. This indicates that the predictor factors account for approximately 65 percent of the variance in the response variable. The expected and observed values in this circumstance are  $x$  and  $y$ . Simply square the preceding value to obtain  $R^2$  for the model.

A good  $R^2$  indicates that the predictor variable predicts the response variable, as opposed to the response variable having minimal variance and being easy to predict even without the predictor variable.

### Data Analysis

Data analysis employing prediction in this study refers to the process of using statistical data, data analytics, and other information to anticipate future events. It is utilized efficiently for generating wiser future selections. This method describes the underlying properties of numerous types of data exploited in research. A pattern in the data begins to make sense due to the data's meaningful presentation. Once again, the results are based on the previously formed hypothesis.

Researchers must be instructed in maintaining a high standard of research practice and possessing the necessary skills to analyze the data. If they wish to obtain deeper insights from their data, researchers need have a deeper understanding of why one statistical method is superior to another.

The primary purpose of data study and analysis is to produce conclusive, objective findings. Any error or bias in data collection, analytic approach selection, or audience sample selection will result in a biased inference.

**Results and Discussion**

**Tobacco Excise Taxes in the Philippines**

Prior to the Sin Tax Reform Act of 2012, the Philippines is one of the countries worldwide that offers the cheapest price for tobacco products (Austria and Pagaduan, 2018). One stick of cigarette is available for only one peso or less in 2012 and earlier years (Kaiser, et. al., 2016). This fact is linked to the very high number of smokers in the country as well as the large rate of tobacco consumption per person. As indicated in the data from the PHS, in 2010, the Philippines has more than 17.9 million smokers out of 62.8 million adult population. Meanwhile, a Global Adult Tobacco Survey revealed that in 2009, a Filipino daily smoker consumes around 9 to 11 cigarette sticks in a day.

The Sin Tax Law increased the excise taxes on cigarettes significantly through different tax tiers or packages. The target of the involved government groups, mainly the DOH and the Department of Finance (DOF), is to raise the price of cigarettes from post-law rate of 1 peso (or less) to a minimum of 3 pesos per stick or around 60 pesos per pack. According to DOH, this price range would make it possible for the country to successfully reach its Noncommunicable Disease (NCD) target of reducing the prevalence of smoking by 2022.

However, even with the very much seen impact of the Sin Tax Reform Law, over the following years, it seems to not satisfy the ultimate goal and does not successfully remove the country in the list of producers with the cheapest cigarettes with the addition of the proliferation of e-cigarettes and other tobacco alternatives. Thus, another series of excise tax laws were passed namely: the Tobacco Tax Law of 2019 and the Republic Act 11467.

The Tobacco Tax Law of 2019 raised the cigarette tax from 45 pesos to 60 pesos per pack from 2020 to 2023. For the succeeding years, a 5 percent increase will be automatically implemented annually (Mendoza, 2020). Meanwhile, the Republic Act 11467 introduces the increase taxation and regulation of electronic cigarettes or vapes and other heated tobacco products (DOH, 2020). It is also important to note that this amendment also added tax exemption to life-saving medicines.

To contextualize the impact of the recently imposed excise taxes, the figure below shows the revenue the government was receiving from the tobacco industry alone before the Sin Tax Reform Law of 2012.

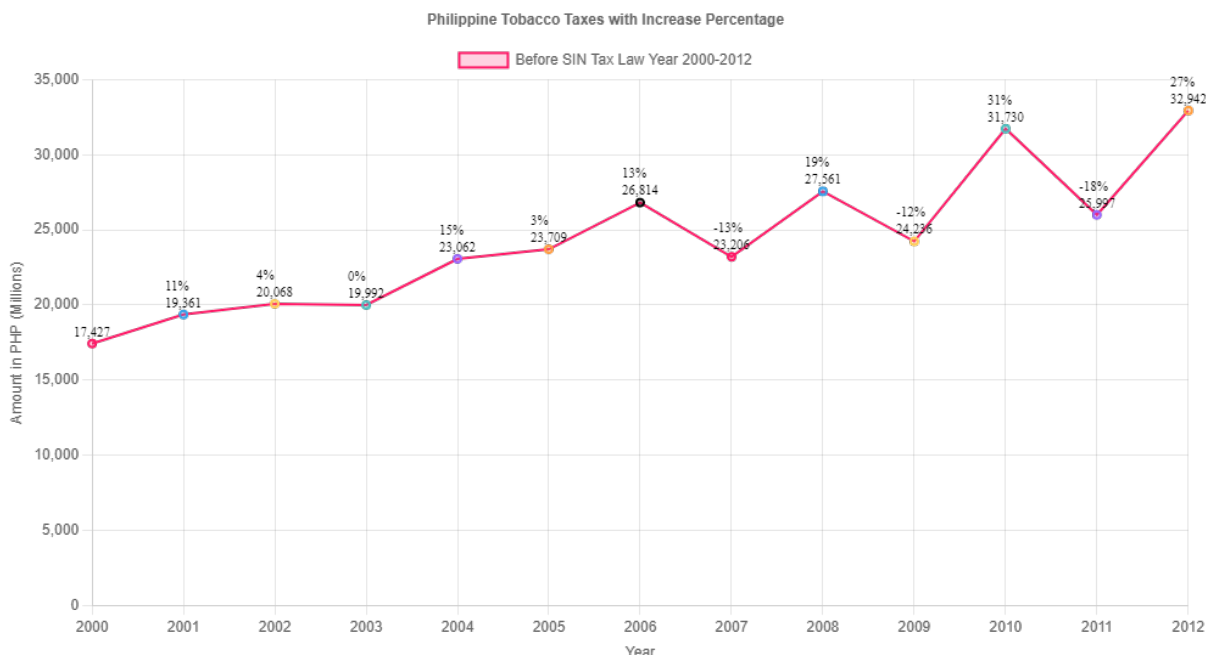


Figure 4 Philippine Tobacco Taxes with Increase Percentage Before Sin Tax Law

It can be seen from the graph that there are constant fluctuations on the government revenue, specifically for the years 2005 to 2012. From 2000 to 2005, the cigarette sales per capita was in an increasing rate (Kaiser, et. al., 2016), which explains the increasing trend in revenue as well. However, in 2005, prices for tobacco products

increased through the passing of R.A. 9334 or the Increasing the Excise Tax Rates Imposed on Alcohol and Tobacco products. This added excise taxes and in a continuing basis of every two years until 2011 (Quimbo, et. al, 2012). This laddering price increase may be the reason behind the rise and fall of the numbers from 2005 to 2019 as seen in Figure 3. Thus, it can be interpreted that the revenue of the government from tobacco excise taxes during this period is highly related to the number of cigarette sales.

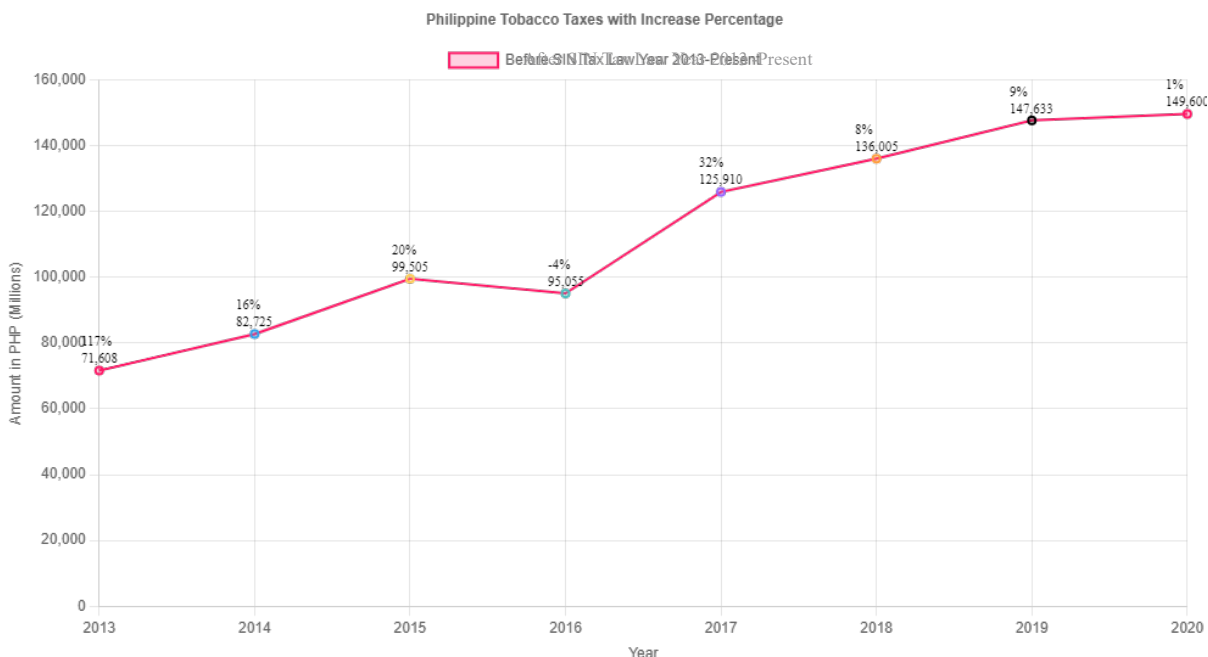


Figure 5 Philippine Tobacco Taxes with Increase Percentage After Sin Tax Law

Now, after the Sin Tax Law of 2012 was implemented, from 2013 to 2020, the graph above shows a general increase on the revenue. Closely, it can be seen that in 2016, the revenue went down about P4 billion. However, it is important to note that in 2016, the purchasing power parity of the Philippines went down by 0.05 percent from 2015 (Word Bank Data, 2016), which is also a direct effect of the almost 2 percent inflation rate in the country (NEDA, 2016). This means that Filipinos could buy less goods and services compared to the previous year with the same amount of money. This fact may have affected the tobacco products sales and revenue during the specified year.

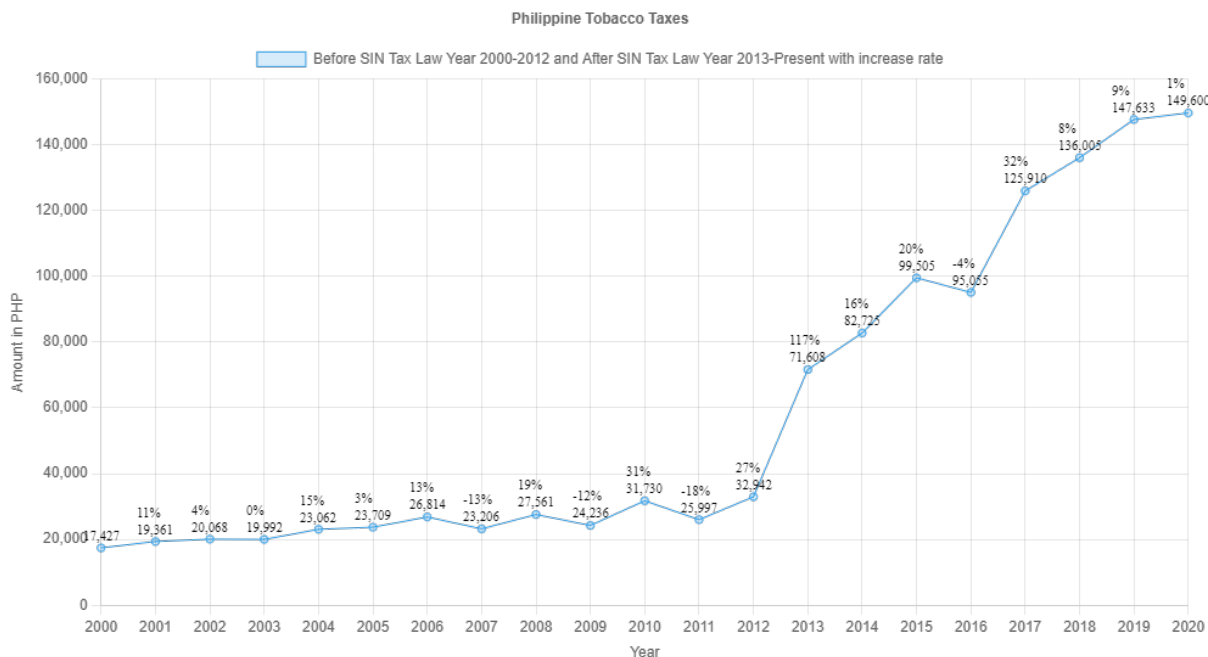


Figure 5 Philippine Tobacco Taxes with Increase Percentage

To get the bigger picture, figure 5 directly shows the big jump in the government revenue since 2000. From an estimated annual revenue of 17 billion pesos to 30 billion pesos (2000 to 2010), the state started earning more than

70 billion pesos after the implementation of the Sin Tax Reform Law of 2012. There was an increase of 40 billion pesos in just a single year. By 2017 to 2020, the revenue finally reached 125.91 billion pesos to 149.6 billion pesos specifically.

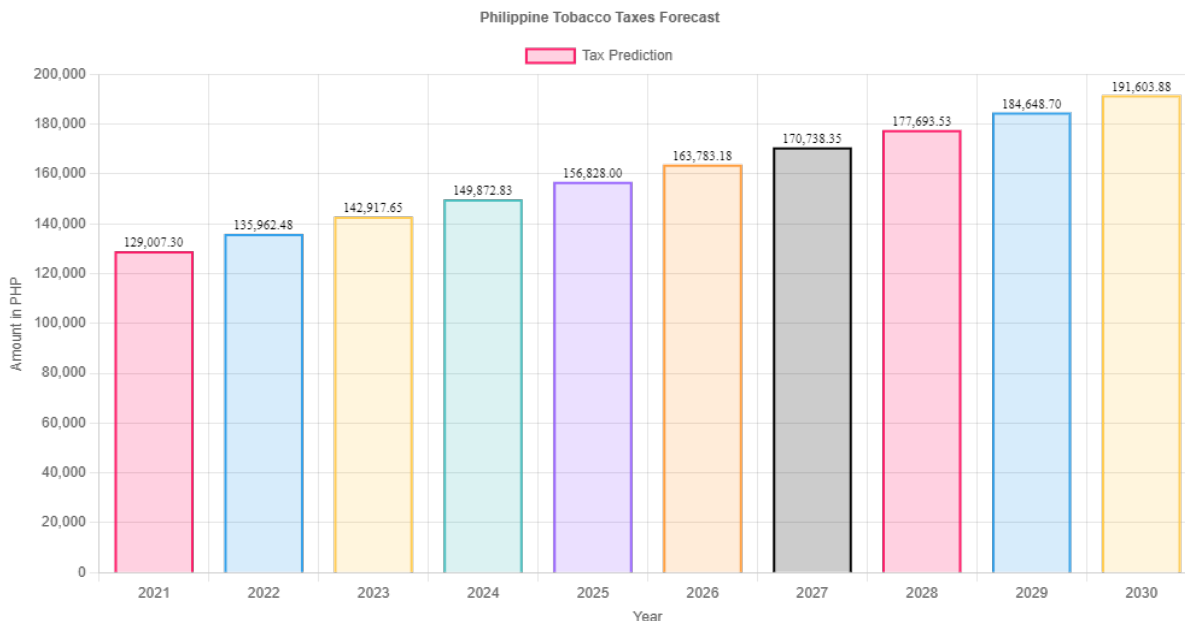


Figure 6 Philippine Tobacco Taxes Prediction

The impact of the new excise tax law and amendment passed in 2019 and 2020, based on the trend, would probably be more evident in the succeeding years. Figure 6 presents the prediction on the revenue from tobacco excise taxes. If the current trend continues, the country is looking at an almost 200,000 pesos revenue by 2030. However, these numbers could have been higher than they actually are if not because of the existing cigarette smuggling observed after the implementation of the excise taxes. In the recent years, multiple reports of smuggled or counterfeit cigarettes being seized have been observed. In 2020, amidst the lockdowns caused by the COVID-19 pandemic, the Department of Finance (DOF) reported that there has been a rampant illegal tobacco trading going on. The department cited that the main reason is probably the prohibition of transporting and selling tobacco products of legitimate cigarette firms (Romero, 2020). Counterfeit tobacco products in the black market do not only impact the government revenue but also makes the smoking prevalence reduction campaign more difficult to achieve. This is because the smuggled products tend to be cheaper and affordable, as well as such tobacco products are high-risk in terms of health since they could contain ingredients or chemicals that are not regulated or do not pass the minimum requirements.

In fact, the Bureau of Customs (BOC) reported that in the same year, cigarette and other tobacco products make up 53.5 percent of the total smuggle goods in 202 in terms of product value, which amounts to 5.22 billion. And in terms of operations, 150 out of 792 cases are of illicit tobacco products. Again, the department linked the events to the pandemic that stopped the transport of non-essential goods and the consumers opting to consume less expensive alternatives (de Vera, 2021).

Table 1 Estimated prevalence current tobacco users ages 15 years old and above (Philippines).

Population (Age 15+)	Year	Prevalence of current tobacco use (% of adults)	Estimated Tobacco Users
48,747,793	2000	34.9	17,012,979.76
55,359,600	2005	31.6	17,493,633.6
59,915,595	2007	30.5	18,274,256.48
62,856,600	2010	28.6	17,976,987.6
64,935,976	2012	27.4	17,792,457.42
68,157,783	2014	26.2	17,857,339.15
73,970,942	2015	25.4	18,788,619.27
71,530,999	2016	25.1	17,954,280.75
73,061,443	2018	24.3	17,753,930.65
74,452,620	2019	23.4	17,421,913.08

Consequently, it is also a significant to see that after the implementation of the additional tobacco excise taxes, the country has seen a decrease in the total prevalence rate of Filipino smokers. As seen on table 1, from 2005 wherein the initial implementation of price increase began, the prevalence of tobacco use had been in constant decline. From the average of around 31 percent smokers in the years prior to the Sin Tax Law Reform of 2012, the number dipped to 23.4 percent in 2019 – an estimated 8 percent difference. This suggests that, indeed, implementing higher tobacco excise taxes has direct impact on the numbers of smokers in the country.

Accordingly, it can also be comprehended that the government's revenue did not and will not get negatively affected by the decrease of tobacco consumers courtesy of the implemented higher tobacco excise taxes. Below are the developed graphs that shows the comparison in terms of tobacco excise taxes, numbers of smokers, and total deaths due to risk of smoking factors–before and after the implementation of Sin Tax Law.



Comparison: Tobacco Excise Tax, Numbers of Smokers, and Total Death due to Risk of Smoking *Before* SIN Tax Law

	Taxes (in Million Php)	Number of Smokers	Total Death: Cause: Risk: Smoking
Average	27,498	18,014,567	82,575

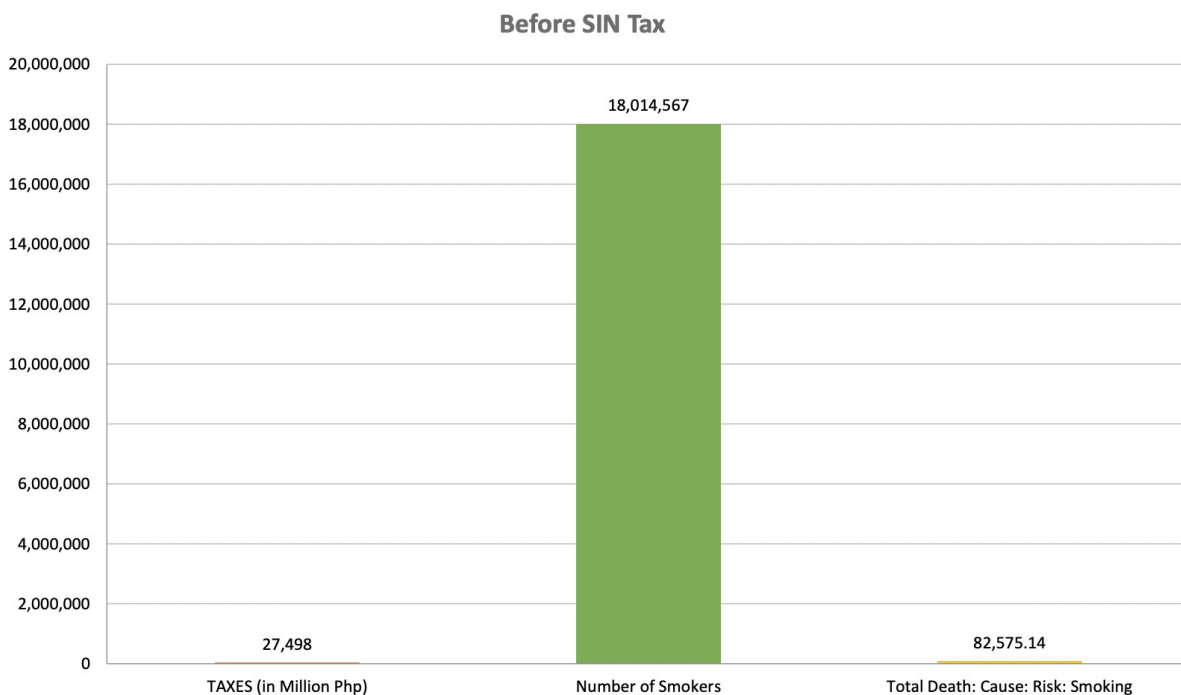


Figure 7a Comparison: Tobacco Excise Tax, Numbers of Smokers, and Total Death due to Risk of Smoking Before and After Sin Tax Law

It has been evident that after the passing of the Sin Tax Law, all three aspects have seen an increase. However, the increase cannot be deemed as positive in terms of the law’s actual objectives. As already mentioned, one of the main goals is to reduce the number of smokers. But as the data shows, the number of smokers still increased. This does not mean that the initiative is ineffective. The total smoking prevalence has still been reduced when contextualized based on the current number of populations as discussed in the previous table.

In a wider perspective of this positive impact on the revenues from tobacco excise taxes, last 2018, the Philippines was found to be the highest performer in terms of cigarette tax score in Southeast Asia. In the policy briefing of the Institute for Health Research and Policy (2021), they discussed the results of Tobacconomics Cigarette Tax Scorecard, which is an evaluation program for the cigarette tax systems of the countries worldwide. The countries were evaluated in terms of the following: cigarette price, changes in the affordability of cigarettes over time, the share of taxes in retail cigarette prices, and the structure of cigarette tax. The data they assessed are from the World Health Organization. The top 3 performers in SEA were the Philippines with 3.75 out of 5 overall score, Singapore with 3.25, and Malaysia with 2.88. Specifically, the Philippines scored perfectly in terms of affordability change and tax structure while scored lowest in terms of cigarette price. This is in total opposite of the other two countries. Both Singapore and Malaysia got a perfect score in terms of cigarette price, while zero score in affordability change. This point of comparison recommends that, even if the country has already greatly

Comparison: Tobacco Excise Tax, Numbers of Smokers, and Total Death due to Risk of Smoking *After* SIN Tax Law

	Taxes (in Million Php)	Number of Smokers	Total Death: Cause: Risk: Smoking
Average	108,349	17,955,217	93,598

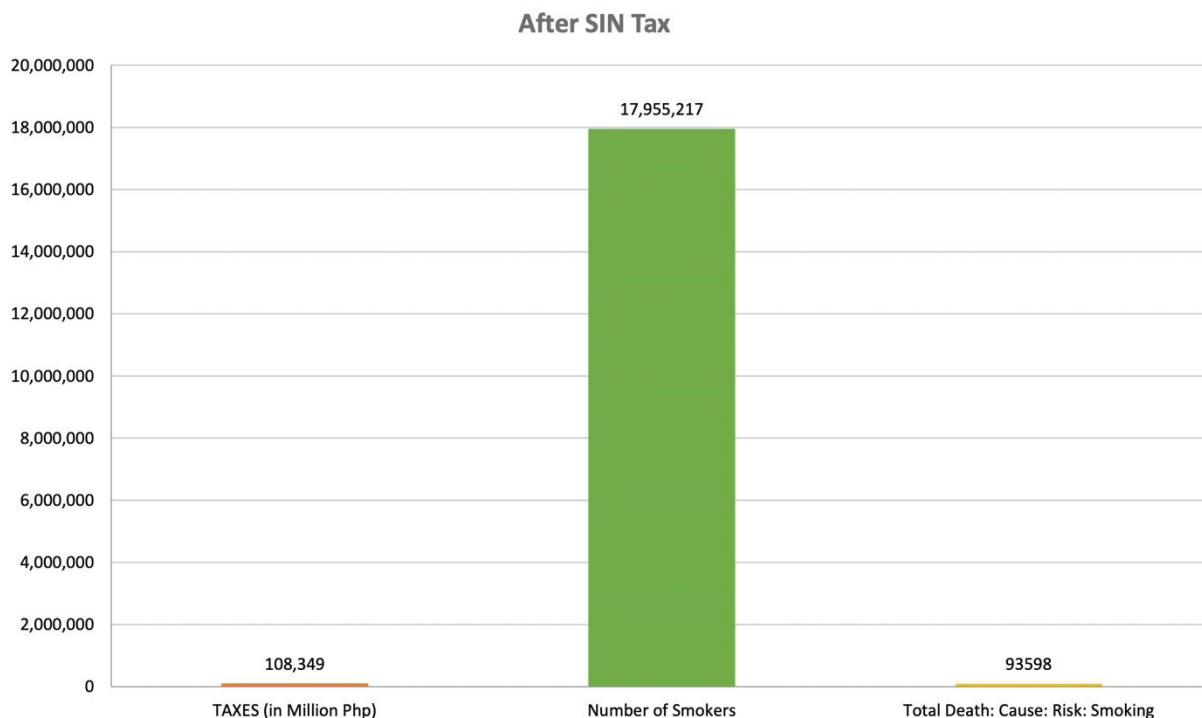


Figure 7b. Comparison: Tobacco Excise Tax, Numbers of Smokers, and Total Death due to Risk of Smoking *after* the SIN Tax Law

improved, there is still a lot of room for improvement. Cigarette price may be one component lacking but it is still significant. There is a need to be reminded that higher prices would mean lower demands, which is one of the goals of the reforms on tobacco excise taxes. The Philippines, therefore, could begin focusing and working on this subcomponent to further improve its cigarette taxation policies.

**Death Toll Linked to Combustible Cigarette Tobacco Smoking**

Cigarette tobacco smoking is currently being practiced by about 1.3 billion people in the world (WHO, 2022). In the Philippines, there are more than 17 million smokers consistently recorded annually since 2000. There are two types of tobacco smoking observed in the market nowadays: combustible tobacco smoking and non-combustible tobacco smoking. Combustible tobacco products are those that require burning of the substance such as cigarettes and cigars. The combustion of tobacco produces the toxicants in cigarette smoke (Philip Morris International, n.d.). Meanwhile, non-combustible tobacco products are those that make use of a heating source for consumption. These include e-cigarettes, vapes, and other heated tobacco products (HTPs).

According to WHO (2022), tobacco causes around 8 million deaths around the world every year, with 7 million of it being directly linked to smoking while the remaining are related to second-hand smoking. Such numbers are alarming because of a number of reasons. Such health epidemic has its economic costs. It entails the government to spend huge amount on the health care of the patients’ treatment. Additionally, more deaths could also cause less human capital or workforce. In the Philippines, one report from the DOH stated that the country is losing around 188 billion pesos for the healthcare expenses in only the four main smoking-related illnesses: lung cancer, chronic obstructive pulmonary disease, heart disease, and stroke. Thus, it is significant to monitor and assess the number of people dying from smoking as it affects not just an individual but a whole community.

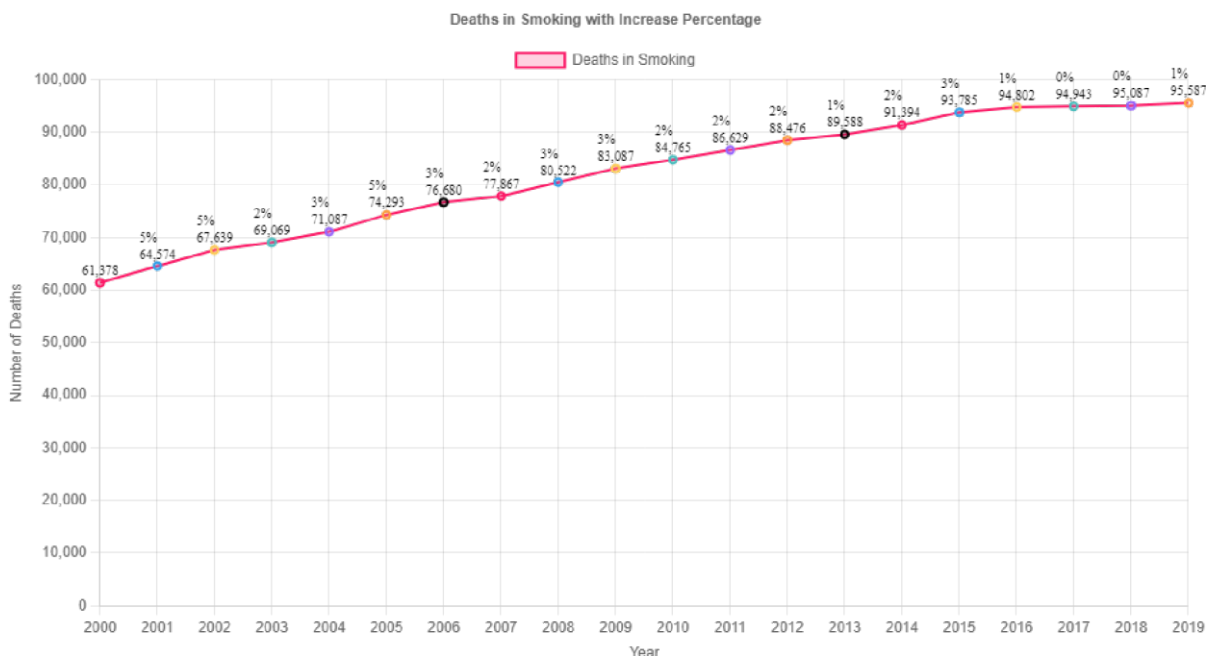


Figure 8 Deaths in Smoking in the Philippines

Before proceeding with the graph’s discussion, it is important to note that the data presented on figure 8 is solely related to combustible tobacco smoking since non-combustible tobacco smoking has so far reported injuries and health complications only.

For context, e-cigarette or vaping use-associated lung injury (EVALI) is a medical condition wherein a person’s lungs are found to be damaged due to the chemicals and substances specifically found in e-cigarettes and vaping products (Yale Medicine, 2022). In a report by the American Lung Association, it is stated that, “The Centers for Disease Control and Prevention (CDC) report analyzed bronchoalveolar lavage (BAL) fluid from a larger number of EVALI patients from 16 states and compared them to BAL fluid from healthy people. They identified Vitamin E acetate, also found in product samples tested by the FDA and state laboratories, in BAL fluid from 48 of 51 EVALI patients, Vitamin E acetate was not found in any of the BAL fluids of healthy people.”

According to the CDC (2020), some symptoms observed in patients are Respiratory symptoms, including cough, shortness of breath, chest pain, gastrointestinal symptoms, including nausea, vomiting, stomach pain, diarrhea, nonspecific constitutional symptoms, like fever, chills, or weight loss.

In 2019, the United States started reporting cases of EVALI. Following these, reports starting to come from Southeast Asian countries including the Philippines, Malaysia, and Thailand. In the same year, the Philippines reported its first EVALI case on a 16-year-old dual smoker. Two cases were from Malaysia, men who have switched from regular cigarettes to e-cigarettes. Lastly, one case of a lung cancer patient that used e-cigarette was found to have contracted EVALI (Eijk, et. al., 2021). The United States eventually stopped reporting the cases for EVALI in 2020 after the 2019 outbreak, since significant decline has been seen.

Figure 8 shows the state of the Philippines in terms of recorded deaths related to combustible tobacco smoking. From 2000 to 2019, the death toll is in constant rise. This is true even on the years wherein higher tobacco excise taxes have been implemented. The country has been seeing an average annual death of 94,000 since 2014. According to the more recent numbers from the Lung Center of the Philippines, the current daily death average from tobacco-related illnesses is at 321.

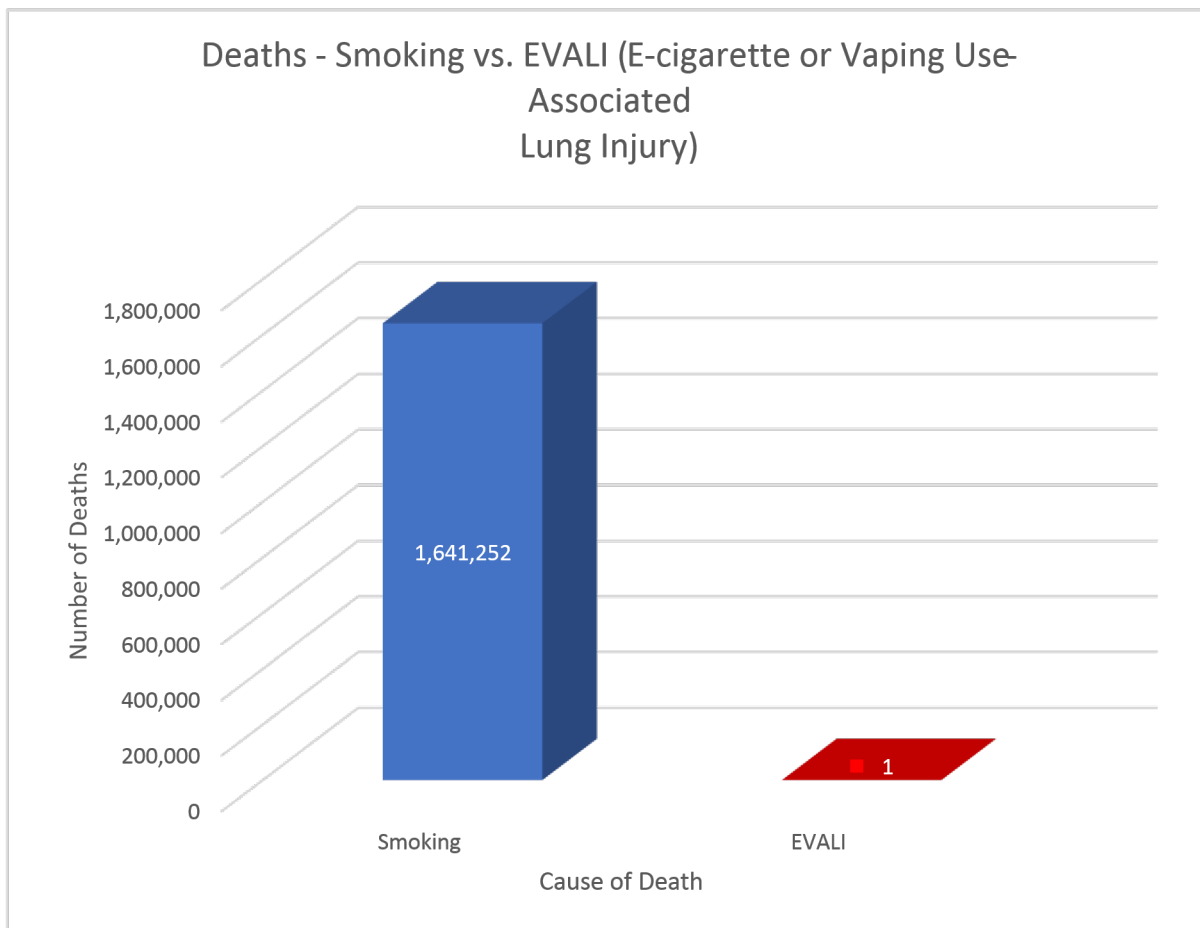


Figure 9 Deaths: Smoking Vs. EVALI

The figure above is shown to visualize the discussed difference in the number of deaths linked to combustible smoking and E-cigarette or Vaping-use Associated Lung Injury.

For comparison with other SEA countries, it is best to put the data besides those who have a decreasing prevalence of tobacco smoking as well. For instance, Indonesia, like the Philippines, has seen a decline on smoking prevalence from the years 2013 to 2018. However, same case of increase in death toll has been observed (Ahsan, et. al., 2022). According to Indonesia’s health data site, deaths with tobacco smoking as a major contributing behavioral factor increased for about 21.1 percent from 2009 to 2019. Similarly, Vietnam has been seeing the same trend. The smoking prevalence within their community, even the prevalence of secondhand smoking, significantly declined over the years. In 2015, the country recorded a smoking prevalence rate of 22.5 percent. According to the report of GATS, smoking prevalence in Vietnam from 2010 to 2015 was reduced by 5.3 percent (World Bank Group, 2019). Vietnam has observed no significant increase nor decrease in its annual smoking-related deaths over the years. The country’s death toll is still averaging more than 40,000 annually (Health Data – Vietnam, 2019).

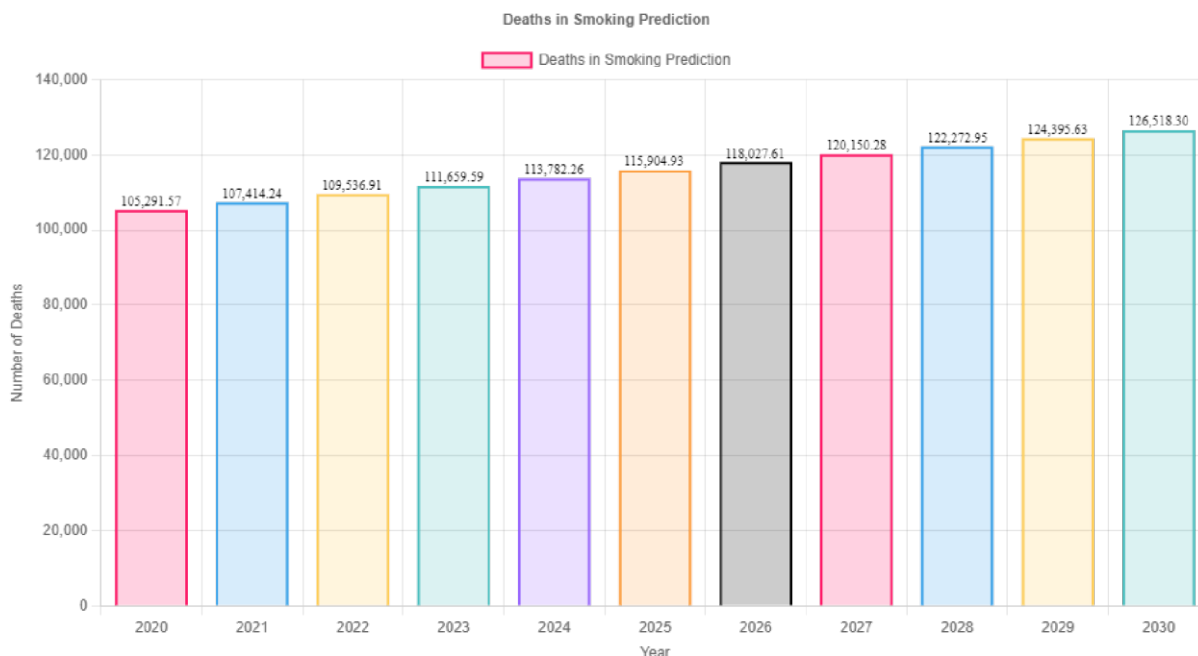


Figure 10 Deaths in Smoking Prediction

Moreover, seeing the consistent rise in numbers since the year 2000 to 2019, the number of deaths in smoking in the country remains to be seen as a rising set of data until 2030. Specifically, the Philippines is expected to breach the 120,000-mark by 2027 onwards as visually represented in Figure 10.

Even if the smoking prevalence rate has decreased, the government's efforts to control the tobacco epidemic through various programs and particularly the establishment of tobacco excise taxes have not had a substantial influence on the number of deaths caused by smoking. Most significantly, such finding seems to apply not just in the Philippines but for other SEA countries as well.

#### ***Mortality Rate Linked to the Use of Tobacco***

Mortality statistics, regardless of any cause, is a significant factor to any country. Such data can show the trends on health problems a community is going through. It also helps in identifying risk factors and eventually assists on preventing premature deaths. According to the DOH, the following is the case for the Philippines.

“The leading causes of death are diseases of the heart, diseases of the vascular system, pneumonias, malignant neoplasms/cancers, all forms of tuberculosis, accidents, COPD and allied conditions, diabetes mellitus, nephritis/nephritic syndrome and other diseases of respiratory system. Among these diseases, six are noncommunicable and four are the major NCDs such as CVD, cancers, COPD and diabetes mellitus.”

Specifically, some of the risk factors that impact such causes of death are related to lifestyle. Along with unhealthy diet and physical inactivity, smoking is among the most common risk factor in diseases observed in the country. Health Secretary Paulyn Jean Rosell-Ubial reported in a press conference that the number of Filipinos that die because of tobacco-related diseases are higher than the combined number of deaths caused by HIV/AIDS, tuberculosis, and malaria.

For context, it is important to have an overview of the general death statistics in the Philippines. The figure below shows the number of deaths in the country in terms of different factors.

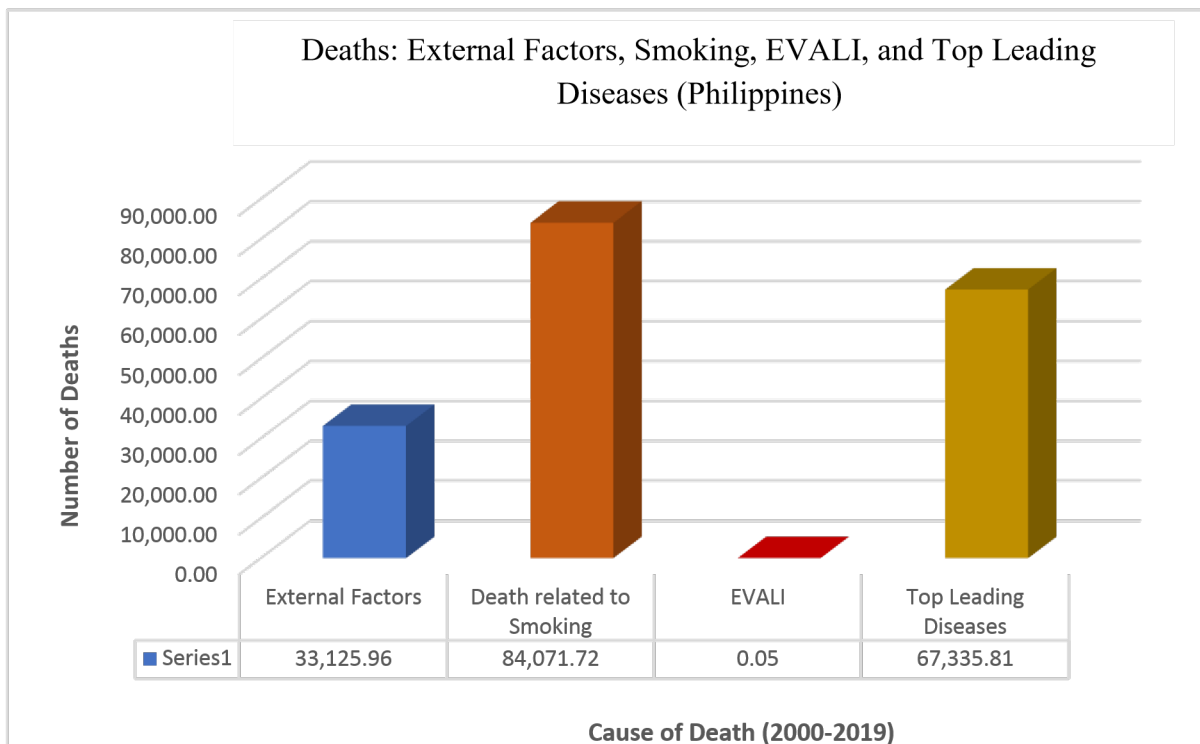


Figure 11 Deaths: External Factors, Smoking, EVALI, and Top Leading diseases in the Philippines

The graph shows that among the death factors in the Philippines, smoking-related ones are still at the highest averaging at 84,071 deaths annually. This is followed by the top leading diseases combined at 67,335 deaths. Other external factors cause 33,125 deaths. Last but one of the most important statistics to see is the average death caused by e-cigarette or vaping. In the Philippines where there is a lone case reported, it means it will only average a 0.05 annual death.

With the data showing how high deaths related to smoking are, the graph below is developed to observe the movement of the tobacco-related mortality rate in the Philippines from 2000 to 2019.

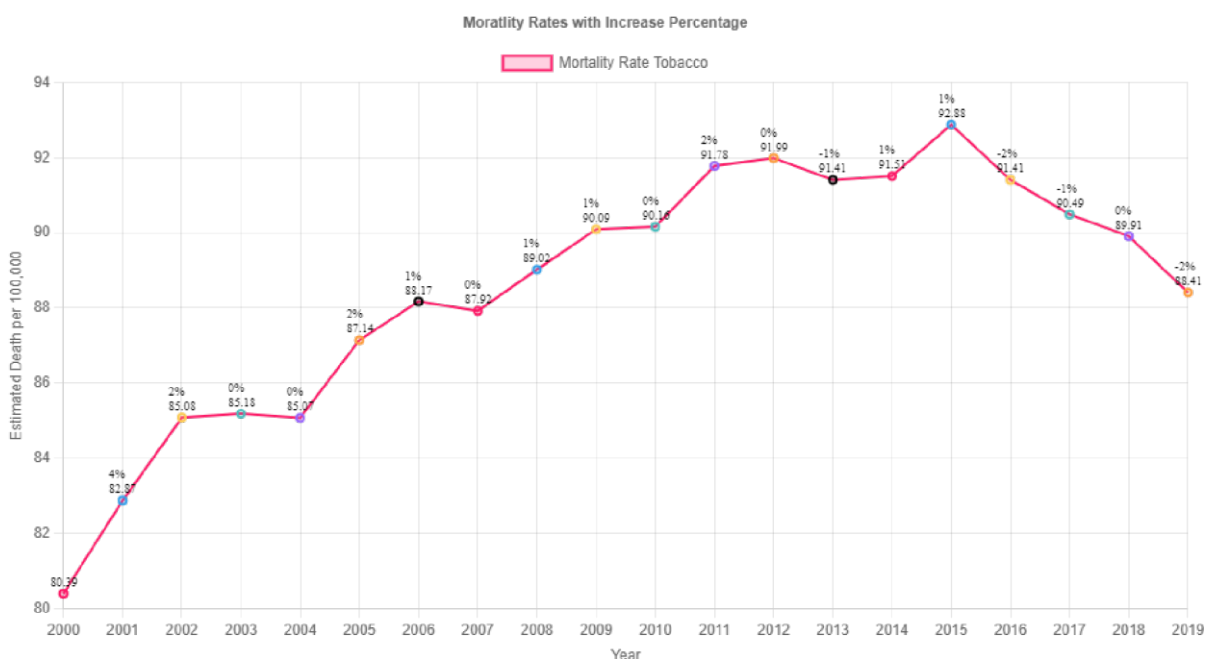


Figure 12 Mortality Rates with Increase Percentage

Unlike the number of deaths in smoking that is on continuous rise, the overall mortality rate in the Philippines related to smoking has been seeing a significant decline since 2015 as seen on figure 12. The biggest jump in increase percentage is seen from 2000 to 2001 with 4 percent. Meanwhile, several years have seen 2 percent annual increase. Specifically, these are the years 2002, 2005, and 2011. From the years 2000 to 2011, there was no recorded decrease in mortality. It is vital to note that 2015 is a significant milestone for the adoption of extra sin taxes and a stricter anti-smoking campaign. Since the smoking prevalence has been declining in the past years, as discussed in the previous topics, it is possible that its impact will be felt in the succeeding ones as already evident in the early years.

The table below shows the specific estimated number of deaths related to smoking in the Philippines. To show its significance and rate, it is computed as deaths per 100,000 people.

*Table 2 Mortality Rate: Cause: Risk-Smoking (Estimate); 2000-2019; Philippines.*

Year	Population (Age 15+)	Estimated Death per 100,000
2000	76,348,114	80.39
2001	77,925,894	82.87
2002	79,503,675	85.08
2003	81,081,457	85.18
2004	83,558,700	85.07
2005	85,261,000	87.14
2006	86,972,500	88.17
2007	88,566,732	87.92
2008	90,457,200	89.02
2009	92,226,600	90.09
2010	94,013,200	90.16
2011	94,385,998	91.78
2012	96,184,369	91.99
2013	98,011,951	91.41
2014	99,874,258	91.51
2015	100,979,303	92.88
2016	103,711,049	91.41
2017	104,921,400	90.49
2018	105,755,180	89.91
2019	108,116,615	88.41

Looking at the table, it can be observed that majority of the years report a decline in the number of deaths per 100,000 population count. However, studying it closely would reveal that there is no technical significance in the decline. Particularly from the past 10 years or on the years the campaigns for tobacco smoking (through the sin tax laws and other programs) have been implemented and promoted. Similar to the previous topics discussed, the figures surrounding the mortality rate of smoking in the Philippines do not stray far from its neighboring Southeast Asian Countries.

## Conclusion

The findings from the collated studies and documents are able to show that there are indeed significant and positive impacts from related to the diminishing negative effects of tobacco smoking in the Philippines. Out of all the initiatives, it can be said that the most helpful would be the implementation of tobacco excise taxes, which also increased the country's revenue that will be allotted for other health benefits of the Filipino people. The increase in the government's revenue from tobacco excise taxes is expected to continuously rise in the next years. The risk of dying as a result of smoking has been on an upward trend, compare to the deaths that have been attributed to external factors, top leading diseases, and EVALI. The number of deaths recorded and its projection in the coming years is also in constant incline. Finally, there is still work needed to be able to significantly affect the overall mortality rate of tobacco smoking in the country. While there is no high level of concern in terms of injury and mortality that EVALI could cause. It is also important to note that there is a lot of improvement on the country's side in the recent years in handling tobacco use and its adverse effects, which is also evident once the data is put side to side with the Philippines' neighboring countries in Southeast Asia.

## Recommendations

Based on the conclusions made, the following are some recommendations. For the government to continue on the implementation and improvement of tobacco excise taxes and to focus as well on the cigarette price factor, as this is where the country scored the lowest in the tobacco scorecard study. It is also suggested to do regular reevaluation of the reforms with the inclusion of non-combustible smoking. Additionally, it is recommended to do a more in-depth assessment in the pros and cons of vapes and e-cigarettes in terms of its contribution as a low risk factor to the deaths and injuries related to tobacco use. More importantly, their possible impacts to the combustible tobacco smokers and to the nonsmokers that could possibly engage in vaping. It is highly advised to take and study the data of the neighboring SEA countries in developing a more effective local tobacco use and control plan.

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