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## RESEARCH ARTICLE

### ILLEGAL ECONOMY OF E-CIGARETTE INDUSTRY IN THAILAND

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#### ABSTRACT

This research is aimed 1) to study the current situation of e-cigarette industry, both Thailand and abroad 2) To study control measure and impact of e-cigarette usage, both Thailand and abroad and 3) To find appropriate measure to control e-cigarette in Thailand. The research was qualitatively conducted on the basis of content analysis. Data were collected from In-depth interviews with six groups such as consumer of e-cigarette (working age/students), organization and concerning e-cigarette department, authorities (law enforcer), politicians, medical personnel and academic personnel. The collected data were analyzed according to the objectives, and the results were descriptively illustrated. The result revealed that In 2014, the e-cigarette in Thailand has not control or clearly policy from the government sector. There are few e-cigarette distributors in the market. Most of e-cigarette distributors are online sales through website and Facebook. They have import e-cigarette from foreign countries. However, in 2014, e-cigarette has continuously increased, and so that the Thai government has launched the Banned import measurement, Banned distribution measurements by Ministry of Commerce,. The Consumer Protection Board (CPB), Ministry of Public Health and Customs Department. For the market value of e-cigarettes in Thailand during 2017-2022, show that informal economic sizing is very tricky because the official database has not been collected. However, there are two methods of estimation: direct and indirect estimates. Thus, during the years 2017-2022 who smoke cigarettes electronic around the country. Increased steadily from 2017 with the smoker's electricity to 1.1 million people and will increase an annual average of 2 million people and rising at the end of 2022 with Cigarette 2.1 million people, the market capitalization of cigarettes will increase in the same direction. In 2017, worth 7,920 million Baht and worth rose at the end of 2022, amounting to Baht 15,120 million, showing growth of industrial electric cigarette. On-demand and economic value. The market capitalization of cigarettes from 5 to 10.3 % of total revenues in the tobacco industry 0.05% to 0.08% of GDP during the years 2017 to 2022. The research results recommended the legalize e-cigarette and implement control measures the same as cigarette, it is recommended to carry out studies and learn from experiences in foreign countries as 99 nations tend to legalize e-cigarette.

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## INTRODUCTION

Thailand has not perfectly clear about e-cigarette regulation and the smoker buys very easy through the direct sale or buying online. It is very popular that conform to the global consumer trend. The survey of National Statistical Office investigated that trend of Thai smokers continuously declined a little bit in 2017.

It was shown 19.1% of teenagers 15 years old or 10.7 million teenagers are smokers which declined to 19.1 % of teenagers 15 years old. This percentage of these smokers are 16.8 % or 9.4 million who is always smoke in 2015. This report result was shown that male smokers declined more than female smokers. Male smokers declined to 37.7 % from 39.3 %, while female smoker declined to 1.7 % from 1.8%. On the other hand, age of smokers increases from 17.8 years old to 18 years old. The research result was shown the guideline of e-cigarette control in many sectors for sunning no smoking campaign project.

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During 2007 to 2017, the revenue of the cigarette business increased every year and increasing revenue 7.3 % per year of 87,513 million Baht and revenue was increased to 157,652 million Baht. The structure of revenue was cigarette revenue 99 %, cigar and other product 1% in the same time. All of these reasons reflexes that Thai people are limited perception of the e-cigarette knowledge both its regulation control and impact. Therefore, e-cigarette should be studied overseas experiences in countries may accept and not accept e-cigarette that how to launch the regulation, control and its impact. This study will be a suitable framework for e-cigarette in Thailand in the future.

### Research Objectives

- ) To study the current situation of e-cigarette industry, both Thailand and abroad.
- ) To study control measure and impact of e-cigarette usage, both Thailand and abroad.
- ) To find appropriate measure to control e-cigarette in Thailand.

### Research Question

How does industrial e-cigarette situation occur in Thailand? What is the suitable measure to control e-cigarette?

## RESEARCH METHODOLOGY

This study was qualitative research and using qualitative techniques which consisted documentary research by studied and analyzed printed matters, researches, and article that concerned about industrial e-cigarette and measurements of e-cigarette in Thailand and foreign countries. The other research technique was fieldwork research: 1) In-depth interview and 2) 6 focus groups in January to March 2019. In-depth interview was unstructured or semi structure interviews that were a methodology of qualitative research for collecting data. (Legard, Keegan and Ward, 2003; Gordon and Langmaid, 1998). The research procedures were in the following:

To study documentary research that concerned the concepts, theories, and research result in the background, problem, documentary research, analyzed printed matters, researches, and the article that concerned about industrial e-cigarette and regulation of e-cigarette in Thailand and foreign countries. This result of study is summarized and commented that are the highest validity. In addition, the results are adapted to be the interview framework or structure of In-depth interview.

To determine script of interview or structure of questions and organized the questions for In-depth interview. These were the aims of collecting In-depth interview data and usefulness as 7 persons from directly relevant stakeholders. Structure of questions was supported the interview with Open-ended Questions for systematic and completely (Lofland, J. and L. H. Lofland, 1995). The researcher determined key informants for running focus group that included observation meeting. This process was divided up into six groups consisting of: 1) consumer of e-cigarette (working age/students) 2) organization and concerning e-cigarette department 3) authorities (law enforcer) 4) politicians 5) medical personnel and 6) academic personnel. Questions for these groups were following:

- ) General situation for smoking e-cigarette in Thailand at the present time and the future.
- ) The impacts and control, including the framework of suitable measurements of e-cigarette in Thailand.
- ) The comments were presented to government sectors and concerning departments.

To use field work for recording results and analysing information that were pasted the research methodology in 1) and 2). The method were starting to collect the data/ concerning document related literature, In-depth interview, and focus group from related people. To analyze and present the result. The researcher analyzed and searched what is the overall situation, impacts and control of e-cigarette in Thailand. Including, how the framework of proper measurements for e-cigarette in Thailand at the present time should be.

## LITERATURE REVIEWS

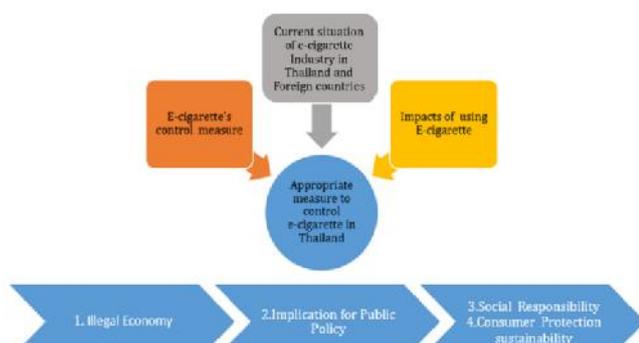
At the present moment, advanced industrial countries, developing countries and underdeveloped countries accepted have accepted e-cigarette in their countries. So effects of e-cigarette has been launched in the following : 1) Research and development of entrepreneurs in industrial tobacco, according with the growth of innovative technology and new generation at the present moment. 2) Increasing e-cigarette demand of new consumers and original consumers are going to increase very fast around the world. 3) International organizations and related departments about health care and legality emphasized on e-cigarette. Including, the team works related to e-cigarette was set for searching the knowledge about e-cigarette in the dimensions of law, health, economy, and implication for public policy and 4). The concern recommendation was presented e-cigarette is the one of tobacco. There are many states have accepted and reformed the law of e-cigarette for setting system to control. It has a process to upstream to downstream that was shown production, distribution, and consumer stage and included the justify process, consumer health risk and the method for public administration for collecting tax.

“E-cigarette” phenomenon was investigated the researcher referred four concepts: Illegal economy, implication for public policy for environmental social governance, social responsibility and consumer protection sustainability. These concepts have been framed to explain e-cigarette industry in Thailand. By different implying, the illegal economy concept of Mc Donald, (1984), Harding and Jenkins(1989part 5), Thomas (1992 part 6 - 8), Schneider and Enste (2002, 2010, 2013 : 16 - 30), Pasuk Phongpaichit, Sungsidh Piriyarangsan, and Nualnoi Treerat. (2000: 2-17) were explained clearly the status of e-cigarette in Thailand. As the government’s policies focus on e-cigarette is the illegal product, ban purchase, and ban distribution that are under control of Ministry of Commerce, Office of The Consumer Protection Board (OCPB), Ministry of Public Health and The Customs Department. The concept of Professor Dr. Prawet Wasi (2009), Implication for public policy creates the good social environment shown the process that consisted three items :1) Cognitive process is the fact evidences were pasted the analysis and synthesis to be the knowledge that was named knowledge-based policy formulation. 2) Overall strength social process shown stakeholders who participated in learning, set policies for transparency process and under control the constitution of

the Kingdom of Thailand (B.E.2550( 2007) section 67 : support citizens participate to determine policies and 3) moral process, implications for public policy should have an ideal of virtuous and righteous for the benefits and happiness of people without taking advantage of their group. So high-quality policies synthesis was the tool for propelling social. The participatory public policy process was to be the cognitive process, social process and moral process. Therefore, factors of environment, social and governance were the parts of course for new opportunity and risk, including the responsibility occurred from carefully thinking before the procedure. This reformed law or was framed procedure of policies. In terms of social responsibility concept, the researcher viewed that theories were discussed about the origin of the theory and period of original globalization. Overall, people accepted the globalization wave were occurring which were appearing in crisis. These crises were called “Triple Crunch” by the New Economic Foundation. For example, financial crisis, environmental crisis, and energy crisis. These crises were investigated there were globalization crises and forced to appearance of change in the world at the present time.

This change is spread to society, political and economic and impact on the government sector, private sector, and public sector. This change is linked to the development and the advanced world for achieving goals. Therefore, trends and conceptual framework are originated for supervising the world’s progress. These exactly inspire confidence that the world is brought advanced civilization. The famous conceptual framework is good governance and sustainable development. In terms of the concept of sustainable consumption was investigated it may uncertainly concern equilibrium system of bargaining power, knowledge, and resources. This mechanism was originated from government’s interference for efficiency and effectiveness the consumer protection. Therefore, mechanism of civil society appears in the countries of European Union have still run this preventive measurements. Although, the government of these countries have tried to influence on the economy and society such as : economic efficiency, individual rights, distributive justice, right to development (UN, Manual on Consumer Protection 2016,p.2)

**The researcher applied by interaction theory with the four concepts:** Illegal economy, implication for public policy, including environmental, social and governance, social responsibility and consumer protection sustainability. These interactions of four concepts are constructed with the conceptual framework as shown in figure 1.



**Figure 1. Conceptual Framework Data Analysis and Finding**

**Global situation:** The trend of cigarette ending: this was found cigarette has disappeared, as social control measurements and taxation measurements, law, and control which have been the policy framework to decrease nicotine, banned, and government is the tobacco entrepreneur price control and transfer profit to investment. To motivate entrepreneurs who have trend to slow down the declining risk product. In addition, the government has intervened through excise tax and launch the law for enforcing and increasing changes. Style nicotine changing : the smoking cigarette habit has started from the selecting cigarette’s brand toward selecting cigarette design product.

The style buying goods have changed buying the cheapest goods to worthiness. The style character of the product has changed analog to the digital product. The style of product size has changed from big size to dividing small pieces. The evolution of nicotine consumption and E-cigarette : During 2017 -2022 : in 2022, the liquid nicotine product has still populated in Western Europe and many countries around the world. The impact of regulation development in the future will become the important as rule of United States Food and Drug Administration (FDA) or the command of tobacco product in Europe, the strength and weak of each product have effected to consumer decision-making.

The smoking testing has changed to increase e-cigarette smoking that is very easy to smoke. The e-cigarette consumption during 2016-2021: The period has been found that e-cigarette has highly consumed to 81 billion pieces in Asia-Pacific region. China is only a country has smoked 45 billion pieces which have been the highest consumption in the world, 55.6 % of Asia-Pacific region, Europe smoking is 46 billion pieces, Middle-East smoking is 11 billion pieces and Latin-America smoking is 4 billion pieces.

**The new revolution of e-cigarette toward cannabis:** Vapor and nicotine liquid tobacco product have many the modern characters. The trend in 2007-2019 has investigated the number of smokers have declined while the number of cannabis smoker have raised. The style consumption development of cannabis leaf has become to liquid, capsule, and pill ,else. The United State of America in 2017 was found that e-cigarette machine sales have been sold as same level as its liquid sales. The market forecast in 2022 , e-cigarette machine sales have increased , but the market share will be e-cigarette machine and its equipment which can use with cannabis. This information has shown the strong competition for fulfilling the demand of health care for people.

**Situation in Thailand:** Thai government measurements of banning smoking in non-smoking areas that were launched by The Ministry of Health and Tobacco Products Control Act B.E. 2560 on science and medicine. Most chemical compositions such as propylene glycol, glycerin, and food additives and flavoring agents, If it is used in a normal manner, small amounts, and short-term usage, the substance is found to be in a safe level. But the regular usage of e-cigarette is often used in the form of inhalation, in large quantities, and used regularly. It has been reported that irritation of the respiratory tract was discovered, which may cause allergic reactions and a health hazard. Also, nicotine is a substance that affects the human body causing addiction and mutualism. The various side effects reporting from abroad found that users of e-cigarette have side effects in both good and bad. Measurements of

import, purchase, sale, and pledge prohibition that were launched by the Thai Customs according to the Customs Act B.E. 2560, section 242: Any person who imports or exports goods, which have not been passed through customs formalities into or out of the Kingdom, or unloaded goods from a means of transport, a bonded warehouse, a go down, a place of security, a permitted port or a duty free zone without a permission from a customs officer, shall be liable to an imprisonment for a term not exceeding ten years, or a fine of four times of a price of goods including a duty or both. Such goods shall be forfeited irrespective of whether or not there is a person inflicted with the punishment according to a judgment. Section 244: Any person who imports goods, which have been passed through or being passed through a customs formality into, or exports such goods out of the Kingdom, or brings goods in for transit or transshipment in any manner is prohibited. Section 245 Any person who is an instigator or a supporter or conspires to commit the offence under section 246: If the person committing the offence under paragraph one knows that the goods are related to the offence under section 244, he shall be liable to an imprisonment for a term not exceeding five years, or a fine not exceeding five hundred thousand Baht or both.

**E-cigarette demand:** According to the information from the cigarette user of 40 students (undergraduate students aged 19-23 years) and the cigarette user of 20 working people (aged 25-58 years). They all know that purchasing and selling e-cigarette in Thailand is illegal. But if asking about detail of law and punishments, no one exactly knows the detail of legal provision. They all used to smoke cigarettes before. The reasons for smoking are to socialize with friends and represent adult values. They use e-cigarette because they all had the experience of smoking a cigarette. Turning to use e-cigarette is because of the reasons of health, family, and surrounding people. Some students want to use it since it's new and has been studied about it from the website and Facebook before. They believe that e-cigarette does not contain tar, is very healthy since smokers can customize the amount of nicotine by themselves, able to choose various scents and colors, and is odorless. The most important is it's an option to help quit smoking because they will not familiar with the smoke smell of cigarettes anymore.

#### Other comments of the users of e-cigarette

They all know that smoking is illegal in the country, but when it comes to the good health of oneself, babies, and life partners, they will find any ways that would help quitting. They feel healthier than smoking a cigarette that makes them cough, occurs sputum, and feel tired easily. Reducing cigarette smoking can reduce cough, make throat clearer, and help them not to be easily tired like before, also, they can exercise longer than in the past. They used to smoke cigarettes for about 20 packs per month, which cost 60 Baht per pack. They spent about 1,200-1,500 Baht a month for cigarettes. Meanwhile, using 2 bottles of smoking liquid per month, cost 200 Baht each bottle. Mostly, they will read reviews from the Internet by those who use smoking liquid and want it to be legal so that they can happily use e-cig because it helps to quit smoking cigarettes.

Shopping online sources are available on Facebook and Line group application for trading. Many Facebook pages will regulate the ages of buyers that must be aged more than 20

years and provide live sales priced from hundreds to 5,000 Baht. Also, it is available in the Lazada but will not use the word 'e-cigarette' directly. Prices are based on the brand or battery power. The ones that are rechargeable will be priced at around 300-500 Baht. In some cases, polices do not recognize the shape that it is an e-cigarette, so the arresting was not executed. The issue of children's usage is not much concerned because smoking e-cig is not easy, unlike cigarette smoking that can be smoked by using lighter. Those who use e-cigs should know how to change the wire, refill the liquid, block the charger. It is not easy that children will use. They think that If it is legal, it is a good thing for consumers. They also suggested that these products should be analyzed, set the standard for quality, so that people can use it comfortably.

At tourist attractions, foreign tourists also imported them from their countries. Some of them know that in Thailand illegally, but I think not seriously. People have an opinion on the revised law, if allowed, it's nice because there are plenty of researches abroad that it is an aid for those who want to quit smoking. However, it should be limited to the area of use. Public space should not be used freely because it should considerate of people around you who neither smoked cigarettes nor e-cigarette. They are not necessary to sit and inhale the smoke or vapor that sprayed into the air. They started using as a user, and then, becoming the seller

because the customers are increased and often used as an aid to quit smoking cigarette. Most of them use both cigarettes and e-cigarette together, which, later, will reduce the amount of cigarettes in the future. Some quit both of them. Before that, they smoked 2-3 packs which made them tired easily no matter jogging or playing football. When they turned to use e-cig, it decreased fatigue. When they were not tired, they could exercise longer and had better health. They want the law to allow it to use in specific group only. Only people who addicted to smoking and want to quit by providing choices as an aid. Not everyone is decisive enough to quit by themselves. In this case, the law should limit the ages to prevent children from buying and do not sell it to them. When it is illegal, both buyers and sellers feel bad that children can smuggle purchase online. If it is legal, legitimate card and customer records checks were possible and better rather than smuggling and illegal trade.

#### Market value of e-cigarettes in Thailand during 2017-2022:

To estimate the value of illegal economies is quite difficult. According to the study of Phongpaichit, Piriyaangsan, and Treerat (2000, p.2-17), Thomas (1992), Harding and Jenkins (1989), and Schneider and Enste (2013, p.16-30). Show that informal economic sizing is very tricky because there is no official database. However, in estimate, there are two ways to estimate: the direct and indirect estimates.

**Direct estimate approach.** Require exploration, questionnaire, and direct interviews. However, the statistics of the underground economy has not been systematically collected. The questionnaire survey with a sampling system from total number of businesses are therefore extremely difficult and costly, which is a qualitative research started by researching existing literature and seek additional insights from some examples, which may be obtained from the sampling to be representative of the total business. The stated examples were derived from specific interview and is only becoming informed or key informant.

**Indirect estimate approach.** An estimate that can be made quickly and cost is not much higher estimate. There have been many estimates of the proportion of the work which called Participation rate approach and estimates of revenues compared with expenditures of the country which called Discrepancy approach and the popular estimation method is called Currency approach. However, the estimates by the latter method are preferable to make more money in the people's hands uncommonly increased as a result of underground operations (Harding and Jenkins: 1989). However, the indirect estimates, in a sense, is based on macroeconomic data. It may be that the indirect estimate is not aware of the different stages and processes of doing these businesses, do not know the relationship of the parties involved, and the relationship between businesspersons together or/with government officials and politicians. Also, the advantages and disadvantages of businesses won't be revealed.

For the economic forecast of the outlaw economy about e-cigarette in Thailand, the researcher uses a direct approach. Which is based on official data, research insights, and data In-depth interviews from key informant from those associated with the direct experience. The researcher will be evaluated according to different conditions that are expected to be a factor affecting the cigarette industry in the structural changes as follows: 1) Tobacco Products Control Act 2) Restructuring excise tax 3) Adaptation of the Thailand Tobacco Monopoly to Tobacco Authority of Thailand 4) The pressure of the Framework Convention on Tobacco Control (FCTC) 5) Competition from Cigarettes and New Products to Replace Cigarettes 6) Demand Growth in Cigarettes. So the researchers to under estimate demand side, primarily using data from the office for national statistics and research and knowledge management for tobacco control. Research Insights and data from In-depth interviews (Key informant) from those associated with the direct experience. The assumptions are as follows:

**Cigarette:** The number of cigar smokers is declining. Because tobacco control measures in the strict public health. The Excise Department has restructured tax. As a result, retail prices for cigarettes, tobacco price increases ranged from 9-20 Baht per pack of estimated market value of the cost of buying cigarettes per person in 2017 cost 2,060 Baht a month later, when the government there. Retail tobacco tax policy adjustment will allow consumers who are required to pay a 2,080 Baht per month in 2018. Thus, during the years 2017-2022 smokers nationwide. It has decreased steadily since 2017, with smokers 6.3 million and will decrease by an annual average of one hundred thousand, and decreased by the end of 2022 with smokers 5.8 million people, the market capitalization of cigarettes will fall in line. By the same in 2017, worth 156,918 million Baht and a decline in value at the end of 2022, amounting to 144,768 million Baht (Table 1.).

**Other smoking (except e-cigarettes):** The number of smokers is declining, as well as a cigarette packet. For the same reason, the structure of the smoking data from the National Bureau of Statistics survey in 2017 found that the number of smokers, this is 41 % of the population are smokers nationwide, or about 4.4 million people, including those with low incomes. I usually smoke cigarettes, etc. the market value of these types of cigarettes. 1 % of the revenue from all types of cigarettes. The estimated and cost of buying cigarettes per person per year in 2017 and 2018 is set as the first reason. Thus, during the

years 2017-2022 smokers this category has decreased steadily as from 2017, with the first cigarette smokers are reduced by 4.4 million and 1 million people per year and decreases. End of the year 2022 with smokers 3.8 million people, the market value of the property is reduced in the same direction in 2017, worth 1,589 million Baht and a decline in value at the end of 2022, amounting to 1,448 million Baht (Table 1).

**E-cigarette.** The number of smokers is increasing. The reason for the market and the behavior of smokers who want a choice of colors, patterns and tastes different from the definition of a traditional cigarette electronic. People who smoke and people who want to quit smoking will likely turn to use e cigarette increased. Especially for working people and students, etc. The market value of the cigarette electronic is estimated by the cost of buying cigarettes per person in 2017-2022 cost 600 Baht per month. Excluding cigarette machine, with prices ranging from 1500-25000 Baht per unit. Thus, during the years 2017-2022 who smoke cigarettes electronic around the country. Increased steadily from 2017 with the smoker's electricity to 1.1 million people and will increase an annual average of 2 million people and rising at the end of 2022 with Cigarette 2.1 million people, the market capitalization of cigarettes will increase in the same direction. In 2017, worth 7,920 million Baht and worth rose at the end of 2022, amounting to Baht 15,120 million, showing growth of industrial electric cigarette. On-demand and economic value. The market capitalization of cigarettes from 5 to 10.3 % of total revenues in the tobacco industry 0.05% to 0.08% of GDP during the years 2017 to 2022, respectively (Table 1.).

## DISCUSSION AND CONCLUSION

According to the national and international e-cigarette industry situation, amendment of e-cigarette related regulations and polices in 99 nations and viewpoints about e-cigarette measures from six groups of stakeholders comprising e-cigarette users, organizations and agencies relevant to cigarette and e-cigarette policies, authorities, politicians, medical personnel and academicians, the researcher would like to propose two options for e-cigarette control in Thailand as follows:

### First, retain import and distribution prohibition

- ) The government loses opportunity to impose taxes and customs from e-cigarette approximately 7.92 -15.12 billion Baht between 2017-2022 or 15.2% growth per year.
- ) The number of e-cigarette users is growing. It is anticipated that the number of e-cigarette users is 1.1-2.1 million users between 2017-2022 or 15.1% growth per year.
- ) The current measures reflect that the government neglects to protect consumer rights from standard quality. The number of e-cigarette consumers is around 1.1-2.1 million and they pay taxes to government through various economic activities at the same time.
- ) The current measures are considered that the government supports illegal economy leading to mafia network in e-cigarette trading.

Table 1. Estimated value of e-cigarette in Thailand Between 2017-2022

	2017	2018	2019	2020	2021	2022
(A) GDP value (trillion Baht)	15.15	16.46	17.59	18.37	19.01	19.68
GDP Growth Rate (%)	3.9	3.6	3.8	3.5	3.5	3.5
(B) Cigarettes						
- Smokers nationwide (million people)	6.3	6.2	6.1	6.0	5.9	5.8
- Value (million Baht)	156,918	154,752	152,256	149,760	147,264	144,768
(C) Other cigarettes(except e-cigarette)						
- Smokers nationwide (million people)	4.4	4.3	4.1	4.0	3.9	3.8
- Value (million Baht)	1,589	1,548	1,523	1,498	1,473	1,448
(D) Electric cigarette						
- Smoking nationwide (million people)	1.1	1.3	1.5	1.7	1.9	2.1
- Value (million Baht)	7,920	9,360	10,800	12,240	13,680	15,120
% The value of the electric cigarette market to the cigarette industry in Thailand (D/B+C@100)	5.0	6.0	7.0	8.1	9.2	10.3
% Market value of e-cigarette per GDP in Thailand.	0.05	0.06	0.07	0.07	0.07	0.08

## Second, legalize e-cigarette and listed as control product

Illegal economy, in view of political economy, is business without tax payment to the state or it is illegal business, in term of law, ranging from small business to massive business including gambling, lottery, brothel, narcotics and cannabis. To compare e-cigarette with other kinds of Illegal Economy, the reliable studies show the impact on society, economy and health should be conducted in national and international level.

To legalize e-cigarette and implement could be controlled measures just like cigarette, its is recommended to carry out for education and learning from experiences in foreign countries as 99 nations tend to legalize e-cigarette. Besides, following seven measures should be issued including:

- ) The minimum age of e-cigarette buyers.
- ) Marketing limitation e.g. transborder sale, points of sale, advertisement scope and sponsorship.
- ) Safe e-cigarette packaging for children.
- ) Legal measures such as: royal decree, law amendment and product control regulations.
- ) Regulations require that the manufacturers and retailers to inform authorities before selling in the market and submit sale annual reports as well as other relevant information.
- ) E-cigarette limitation in public space.
- ) Tax collection on e-cigarette and related products categorization.

In case that e-cigarette is legalized in Thailand, the state will earn tax and custom revenues. Moreover, the relevant authorities can control product standards for consumer safety. Including the Ministry of Health should be controlled usage for smokers who want to quit.

If e-cigarette can help stop smoking, the authorities could be support edits to standardize smoking quit. Anyway, it should be used with the person who has been evaluated several times to confirm that he or she is ready to quit. Otherwise, resources and budget may be lost.

In case that e-cigarette is categorized as a control product, it is possible to corrective data from In-depth interviews in various aspects to explore advantages and disadvantages of e-cigarette as well as compare the findings with international studies. This is beneficial for stipulating public policies in promoting a good social environment in accordance with an idea of Prawet Wasi (2009).

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