

Increase in cigarette
tax would reduce the
cigarette
consumption



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5. 0 Introduction

The results of our analysis demonstrate that increase in cigarette tax would reduce the cigarette consumption or quit smoking among lower income smokers and heavily addicted smokers, thus it upheld the hypotheses four and five. However, the tax factor does not prove to be significantly related on younger smokers, female smokers and less educated smokers. Chapter 5 includes a summary description of descriptive and inferential analyses and discussion of major findings that validate our research objective and hypotheses. Next section provides the implications of our study toward the society. Following section will discuss several limitations that are apparent during the progress of the study, as well as to provide some recommendations for future research. Then, an overall conclusion of our entire study is presented at the end of this chapter.

5. 1 Summary of Statistical Analysis

The demographic profiles of respondents are analyzed when the data are collected. Smokers are categorized by different races, gender, smoking degree, education and age and the data is presented in pie charts. Besides, the central tendencies statistic of the variables is also calculated in the analysis. Cross tabulation tables are presented to show responses of each subgroup.

Statistical method used in the inferential analysis is multinomial logistic regression. This statistical method presented the predictability relationship between the dependent and independent variables in the form of odd ratio [i. e. $\text{Exp}(B)$]. When the significant level is less than 0. 05, the alternative

hypothesis is accepted. In this research, alternative hypothesis for age, gender, and education level are rejected as these factor do not affect the likelihood of the responses towards cigarette tax. The alternative hypothesis for smoking degree and income level are accepted as the significant level is less than 0. 05. Therefore, smoking degree and income level are more likely to predict a certain type of responses from the smokers.

Multivariate analysis is also performed by inputting all independent variables as covariate factors in the SPSS program. Multivariate analysis is to ensure the relationship is not significantly affected by other independent variables.

5. 2 Discussion of Major Finding

Table 5. 1: Summary of the Inferential Analysis's Results

Hypothesis

Result

H1: Younger smokers are more likely to quit smoking than older smokers given cigarette tax increase.

Rejected

H2: Male smokers are more likely to give no response to cigarette tax increase than female smokers.

Rejected

H3: Highly educated smokers are more likely to quit smoking than less educated smokers given cigarette tax increase.

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Rejected

H4: Lower income smokers are more likely to cut cost than higher income smokers given cigarette tax increase.

Accepted

H5: Heavy smokers are more likely to give no response to cigarettes tax increase than light smokers.

Accepted

Source: Developed for the research

According to rational addiction theory in terms of the variable age, rational young smokers should be more likely to quit smoking given that their longer life remaining compared to older smokers and their comparatively lower income. Younger smokers who might develop lung cancer right now would lose much more (time) compared to an 80 years old smoker with lung cancer. Our empirical research does not confirmed this because we had shown that younger smokers are not more likely to quit/cut smoking than adult smokers. Past studies by Lewit and Coate (1982) and Sylvain (2007) also contradicted the result we had. The possible reason leading to this result might include the small number of young smokers in our sample. The alternative explanation is that since we perform our data collection in urban areas, young smokers tend to be more affluent, therefore they are not affected by increase in tax. Interestingly, Decicca, Kenkel and Mathios (2008) stated that since most smoking initiation starts during youth, therefore, the existing young smokers who quit/cut smoking due to taxes could be higher. <https://assignbuster.com/increase-in-cigarette-tax-would-reduce-the-cigarette-consumption/>

The study also finds that gender is not a factor in determining the decision to cut/quit smoking given cigarette tax increase. However, rational addiction theory predicts female is more likely to cut down cigarette consumption due to traditionally being poorer than male. This contradiction happened because, we suspect, the income gap between the genders is fast closing. Therefore, any tax increase will not significantly create any reduced consumption of cigarettes among the women. Our finding is in line with the mixed results of previous literature. Chaloupka (1990) discovered that men are more likely to quit/cut smoking while Stehr (2007) found that women are more likely to quit/cut smoking.

We find that education has little impact on the decision of smokers in response to cigarette tax increase. According to rational addiction theory, smokers with less education incur much “ cost” than highly educated smokers for smoking because they have generally lower income. Our findings did not support rational addiction theory. Previous research by Madden (2007) partly supported our finding, he found that highly educated smokers are less responsive to cigarette tax. However, Tansel’s (1993) findings in Turkey (a middle income country) partly supported our conclusion. He found a positive and significant relationship between education and cigarette tax elasticity meaning that the higher the education, the higher the sensitivity towards cigarette tax a smoker will be. The reason behind is that highly educated smokers also tend to cut down smoking when taxed are raised, not because of the money issue, but because they are fearful of the health consequences. They have utilized the tax increase as the opportunity to go “ cold turkey”. Therefore, when both higher education

and lower education smokers choose to smoke less, none is more likely than the other.

Lower income smokers are more likely to cut cost than richer smokers because the “ cost” of continuing the habit of smoking is higher. Each RM increase in cigarette price will affect their quality of life, even creating shortages of money for children’s education, food and other daily expenses compounded to the future. This result conforms to previous research done by Biener et al. (1998) which says that poor smokers are 3 times as likely to either switch to cheaper brands of cigarettes or reduce consumption. Townsend et al. (1994) findings also brings forth similar conclusion.

As expected, heavy smokers are more likely to give no response towards cigarettes tax increase than light smokers. Adjacent complementarity explains that within a certain time frame, the more a smoker smokes now, the more he would like to smoke in the future. Unless the pain of higher cigarette price is more than the pain of giving up the smoking addiction, smokers will tend to continue to smoke in the future. Previous research done by Lee (2008) does not conform to our findings. Lee et al. (2004) whose result shows that heavy smokers increase smoking consumption when tax is increased supported our result.

Overall, the article that Biener et al. (1998) produced matches our results almost entirely. Other studies that contradict our result normally utilized national cigarette sales data. Therefore, their studies are not entirely comparable to our individualistic survey-based study.

5. 3 Implications of the Study

Whether cigarette tax effectively achieves the government's goal in reducing cigarette consumption is a significant issue that needs to be carefully considered from time to time in order to better determine the direction of future policies. Hence, identifying the effect of tax increases on cigarette consumption is an essential part for regulating proper governmental policies on the tobacco use. Generally, the progressive increase in cigarette tax rates may provide a powerful contribution toward the government's taxation policy which would boost the government's income tax revenue, as well as to improve economic efficiency of the country. In our study, we found that highly addicted and high income smokers do not respond to cigarette tax well. They still purchase same quantity of cigarettes. Therefore, government should devise a method of targeting cigarette taxes towards these groups of smokers to maximize tax revenue. According to Tsai et al. (2003), portions of extra revenue which was derived from the cigarette tax would be earmarked to the government's effort for implementing tobacco control program against the tobacco use such as anti-smoking media-campaigns. Still, other portion of the cigarette tax revenues would dedicate into funding healthcare for under-insured population, lung cancer research and other health related activities.

Apart from that, our study also contributes to public health by identifying that education does not play a significant role in reducing consumption of cigarette due to taxes. This implies that our education system is not emphasizing the danger and health hazard of smoking. This, however, agrees with the rational addiction theory because highly educated people

are likely to be wealthy. Therefore, they do not suffer as much because of tax increase. In contrast, wealthy people also “suffer more” because of health problems because they have much to enjoy in life (holidays, entertainment, longer life etc.) compared to low income smokers. Therefore, in devising a public health policy, our study implies that we should educate people on the danger of smoking while at the same time increasing cigarette tax so that in the end, the rich and the poor both smoke less.

During the process of conceptual foundation, our research has contributed extensive amount of empirical evidence that have reviewed the relationships between various demographic and smoking degree factors and the response to cigarette tax increase. Through our study, we can better understand the effects of taxation on cigarette consumption which will result in different consumption patterns. For instance, smokers may cut cost either by reducing the number of cigarette they smoke or change to a cheaper brand, choose to quit smoking, or maintain their original level of consumption. According to the fundamental law of economics which specified that as the price of a product rises, the quantity demanded for that product would fall. However, we found that there is an exception to this most basic law of economics because of the nature of rational addiction. Since we viewed the cigarettes smoking as an addictive behaviour, therefore it could be expected that increasing cigarette tax would have smaller effect than normal product in reducing people’s consumption of cigarettes. Alternatively, increasing cigarette taxes too high and the government would risk creating a black market or the emergent of smuggled cigarette.

5. 4 Limitations of the Study

Limitation of this survey-based research is that smokers may not always do what they say they would do in the questionnaire. They may choose to answer “ quit smoking”, “ cut cost” in the questionnaire but may act to smoke next week, next month or some other dates. On the other hand, they may answer “ no response” to cigarette tax but choose to quit smoking the next day. However, they are not necessarily been telling lies. It is just that future behavior is hard to predict even for smokers themselves especially those who are highly addicted to cigarettes. Warner (1978) had showed that self-reported consumption in questionnaire significantly underestimate the actual sales data taken at the national level.

Apart from that, the small numbers of samples of young smokers age 11 and below may not be sufficient to produce any strong evidence for that age group. The reason for such low numbers is that it is illegal for them to smoke in Malaysia. Besides, retailers are not permitted to sell cigarettes to minors age 18 and below. Besides, comparably smaller numbers of female smokers compared to male smokers may have distorted the results. Female smokers are historically and nationally lower than male smokers. Therefore, each female smoker’s responses to cigarettes tax have larger impact per person to the end result as compared to individual male smoker.

Wasserman, Manning, Newhouse and Winkler (1991) had observed that using individual level data may incorporate ecological bias into the study.

There may be other variables affecting the tobacco use that are not incorporated into the determinant. Example might include, family size, social statuses of smokers and profession (e. g. doctors may possibly smoke less).
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Another example would be the existence of societal culture that disapproves the habit of smoking.

The respondent going through the survey questionnaire cannot choose to answer the questionnaire in any other way than was included in the choices of answers. The smoker only can fill in their answer according to the objective answers set by the researcher beforehand and all the answer categories are based on nominal or ordinal. If the questionnaire is asking about question such as how would you response to a RM1 increase in cigarette price and the respondent wish to answer that he would quit for 1 month and only continue smoking if his income has increase accordingly, it is not possible. These will result in inaccurate result as the researcher has already set the chooseable answers, namely to quit smoking, cutting cost and choose not to respond.

Another limitation of the research is that it does not consider smuggled cigarettes and cigarettes sold in tax free zone. Tsai et al. (2003) and Lee and Chen (2006) had proved in their studies that smokers tend to purchased smuggled cigarettes to avoid the high cost of legal cigarettes in Taiwan. Respondent who purchase " tax-exempted" cigarettes from these two sources may not be hurt by the tax and therefore our result will be biased towards " No Response".

Moreover, although we know that the main effect of rising price of cigarette due to tax would reduce smokers' cigarette consumption but we do not know whether it is cigarette tax that has actually play an important role on the demand of cigarette. Perhaps the reason for reducing cigarette consumption

may be due to some issues other than taxation policy such as concern over the health consequences of cigarette smoking since they know that smoking will lead to lung cancer, heart disease, stroke, etc. Another issue that could influence on the demand of cigarette may be the tobacco control policy, for example advertising restrictions or ban on smoking in public places, as well as anti-smoking media campaigns could induce smokers to quit/cut smoking as well. Besides that, law policy also plays a major effect on cigarette consumption which limit smoking in public place and restrictions on youth under 18 years old to purchase the tobacco products. Since there are a lot of other issues than taxation in affecting their smoking behaviour, therefore it is recommended that future research in those issues need to be conducted to verify its actual effects.

The final limitation of our study is that we seek our respondent mainly in the Klang Valley area. Therefore, it may not truly represent the whole population in Malaysia. We know that Klang Valley populations are urban dwellers and the result may deviate a little if we include smokers from rural areas. Urban dwellers normally had higher education level and higher income level compared to non-urban dwellers. However, since majority of the smokers live in the city and most of the tax revenue collected comes from them, it is acceptable to neglect smokers from rural areas.

All limitations are acknowledged but they do not detract from the significance of finding but merely provides platforms for future research.

5.5 Recommendations for Future Research

As we use cross-sectional method in our research, we highly recommend future research on this topic conducted in the longitudinal method. Future researchers can conduct the research on the change of cigarette tax in Malaysia in the time period of few years or longer. It is similar to the way conducted by Hamilton, Levinton, Pierre, & Grimard (1997) and Hanewinkel and Isensee (2007) in their studies. Based on our knowledge and finding, Malaysia has not conducted the research on this topic by this method. By conducting the study in longitudinal method, the result will be more accurate and reliable because this method can overcome the limitation of cross-sectional method as discussed in the first paragraph of limitation. Actually, there are even little research on the topic cigarette taxes itself in Malaysia. More research on this topic is highly recommended because the consumption behavior of Malaysian smokers may be different from overseas' smokers.

Many researches on the cigarette consumption were focused either on the effect of cigarette tax/price to the cigarette consumption such as Lee (2008) or the effect of anti-smoking campaign/health information on the cigarette consumption such as Warner (1977) and Lee and Chen (2008). Future researchers should find ways to integrate and study both the effect of cigarette tax and anti-smoking campaigns together on the cigarette consumption. This is because cigarette tax and health information do affect the cigarette consumption at the same time. The only difference between them is whether price or health information plays in a bigger role on the change of cigarette consumption. By studying the effect of cigarette tax and

health information together on the cigarette consumption, the result can be more reliable and usable for government to implement its tobacco policy effectively and efficiently.

Besides that, researchers can examine the fairness principle on the tobacco policy in Malaysia. Many researchers such Gospodinov and Ian Irvine (2009) and Warner et al. (1995) had discussed the issues of fairness principle in the tobacco policy in their studies. One of the arguments is the tax imposed is unfair to lower income group. Lower income group often will consume lower priced or smuggled cigarettes when cigarette tax is increased as proved by Evans and Farrelly (1998), Farrelly, Nimsch, Hyland and Cummings (2004), and Tsai et al. (2003). Often, lower priced or smuggled cigarettes contain higher tar and nicotine substance. The consumers' health will be more affected by smoking these types of cigarettes. Moreover, future research can focus on whether tax should be imposed based on the quantity of nicotine and tar instead of quantity of cigarette in Malaysia. The impacts of implementing tax based on quantity of nicotine and tar need to be researched and determined.

Youth is the most valuable assets for the country. Future research can focus on the access of youth to cigarette or exposure to smoking environment/habits in Malaysia. This type of research can provide important data and information to our country and the world since the younger generation of smokers has increased many folds throughout the world during the past century. More effective tobacco control program to the youth can be implemented based on the data and information. In addition, future research

can focus on what is the optimal tax rate for cigarette in Malaysia and its impacts.

5. 6 Conclusion

Smoking has been a prevalent epidemic in the modern world. It remains one of the top killers of human on the 21st century. Fortunately, excise taxes on cigarettes continue to be our last line of defense against smoking and many countries including Malaysia has been increasing taxes on cigarettes for many years. In the beginning of our research, we had set out to answer the questions. We want to know given the socio-economic factors and addictions degree, whether it will affect the likely responses of fellow smokers following a significant increase in cigarettes tax.

The principles of rational addiction theory predict that lower income, younger, low education, female and lightly addicted smokers are more likely to respond towards cutting down on smoking consumption and quitting altogether given a tax increase. Conducting a self-administered questionnaire survey in Klang survey with samples of 300 smokers, we have found out the following results. Gender, education and age do not affect the likely responses of fellow smokers. The reasons might be caused by relatively small samples, closing gaps of income between genders and tendency of highly educated smokers to cut down smoking due to health reasons. However, research found that low income smokers are more likely to cut cost. Highly addicted smokers are more likely to maintain same level of consumption. Both income and addiction factors is accurately predicted by the theory and previous research.

Our research has wide implications. They include helping government devise better taxation policy, public health policy and smoking awareness campaigns. Besides, we have also contributed significant empirical data towards rational addiction theory. Limitations of this research includes incongruence between smokers' actions and smokers intended action and ecological bias. Small samples for certain age group and the availability of smuggled cigarettes are among the limitations. Therefore, we highly recommend that future longitudinal research on cigarette taxation be conducted in Malaysia. Besides, research on the differential effect of taxation vs. anti-smoking campaign, fairness of cigarette taxation and access of youth towards cigarette can be conducted to supplement this research area.

Overall, our research has been a success. Although the hardship we have encountered during the data collection process and data analysis process is painful, it is worth it and has paid off to the team. We hope that the result that we had produced is truly helpful to other researchers as well as to the society as a whole.