The Demand of Tobacco Consumption in West Sumatra

*Yollit Permata Sari[1], Isra Yeni[2], Melti Roza Adry[3], Dewi Zaini Putri[4], Urmatul Uska Akbar[5]

[1]Faculty of Economics, Universitas Negeri Padang
[2]Faculty of Economics, Universitas Negeri Padang
[3]Faculty of Economics, Universitas Negeri Padang
[4]Faculty of Economics, Universitas Negeri Padang
[5]Faculty of Economics, Universitas Negeri Padang
Corresponding Author: yolitpermata@fe.unp.ac.id, israyeni.0810513167@gmail.com,
meltirozaadry@fe.unp.ac.id, putridewizaini@gmail.com, urmatulakbar@gmail.com

Abstract

This study uses two estimation models, logistic and linear regression. The logit model is used to see the probability of an individual being a tobacco user. The second method uses multiple linear regression which aims to see the factors that influence the demand for tobacco consumption in West Sumatra. This research was obtained from National Socio-Economic Survey in 2019. Comparing these two models, there was a slight difference. Income does not influence an individual's decision to become a tobacco user, while this variable is significant in influencing the demand for tobacco. This study also reveal that social and economic factors are significant in influencing the demand for tobacco in West Sumatra. Economic factors show that tobacco is a normal good. Meanwhile, from social factors such as education level shows that the lower the level of education causes individuals to become tobacco users and also causes the demand for cigarettes in West Sumatra to increase. This result causes the standard of household living to be disrupted because education is a human capital investment. So that various policies from the government are expected to control tobacco consumption in West Sumatra.

1. Introduction

Poor and Developing Countries are the targets of the global tobacco market. This is because the control of tobacco use in these countries is very low Lian & Dorotheo (2019). As many as 1.1 billion smokers worldwide around 800 million of them are scattered in poor and developing countries Lian & Dorotheo (2019) Moreover, The Tobacco Control Atlas estimates that 548 billion cigarettes will be sold in developing countries, including Indonesia.

Indonesia is one of the developing countries which being the target of global tobacco market.

Various policies have been implemented by the government in terms of controlling tobacco consumption. However, the government faces a dilemma. Even though as many as 250,000 people have died from tobacco consumption Lian & Dorotheo (2019), On the other hand, tobacco consumption by households also has an impact on the economy Ekpu & Brown (2015). This can be seen from the data on excise revenue in 2020 which increased by 8.36% and it was supported by cigarette excise. In addition to this, 25 provinces in Indonesia received tobacco excise revenue sharing above one billion IAKMI (2020).

Smoking behaviour is closely related to the disadvantages of socio-economic conditions. This means that smoking does not only have an impact on economic conditions but also social. This is inseparable from the fact that smoking behaviour arises from habits or culture that are inherent in society Ferretti (2019). Even the Minister of Finance in 2017 stated that identifying the causes of cigarette consumption is different from identifying the causes of consumption of other goods. This is because smoking is caused by several factors such as psychological, social, and even cultural.

The publication from Action smoking and health notes that workers who have relatively lower wages are more likely to decide to consume tobacco. In addition, more individuals who smoke also come from unemployed than employed. This is due to psychological factors which make them get stressed so that they decide to consume tobacco. Furthermore, most smokers have low incomes and low levels of education. Lund (2015) **dependence, and intention to quit based on nationally representative samples (2007-2012** found that low levels of education were associated with high consumption and dependence on cigarettes, and no intention to quit. He also found that the difference between smokers who had a low income and a high income was in the intention to quit smoking. Those with high education and income are more likely to quit than those with low incomes and education.

Bilgic, Florkowski, Yen, & Akbay (2013) conducted a more extensive study about smoking behaviour of a household. He found that heads of households in rural areas had a higher probability of smoking, while heads of households who had a high level of education and migrated both domestically and internationally, tended to be unrelated to tobacco consumption.

1.1 Consumption theory

Based on the Keynesian theory, income is one of the economic factors that has an impact on tobacco consumption. If goods are categorized as normal goods, an increase in income will increase consumption. Bilgic, Florkowski, Yen, & Akbay (2013) found that tobacco is a normal goods in

which higher income causes tobacco users to increase their expenditure on tobacco whenever income increases. However, in some countries, cigarettes are inferior goods (Ferretti, 2019; Lucrezi, Esfehani, Ferretti, & Cerrano, 2019) which means that an increase in economic growth in a country will cause cigarette consumption to decrease Toukan (2016) This is because the higher a person's education level, the more aware they are of the dangers of smoking. Moreover, in high-income countries where health information is widely available, most smokers say they regret starting smoking, but, this is not the case in low-income countries which tend to have low levels of awareness of the dangers of smoking Flamini (2007) so that cigarettes are an inferior goods.

Many studies have proved that income has a significant effect on cigarette consumption. Leinsalu, Kaposávri, & Kunst (2011) found that income influence tobacco consumption among smokers in the 25-64 age range. The same result was found by Pieroni (2008) who showed that tobacco consumption decisions were significantly influenced by income and demographics factor. In his research, he also found that income has a positive impact on tobacco spending, while higher education and employment reduce the likelihood of an individual to be tobacco user. Nargis, Thompson, Fong, Driezen, Hussain, Ruthbah, Abdullah (2015) also conducted the same study but in a broader context, he distinguishes the effect of income on tobacco consumption in rich-income countries and low-income countries. He found that income significantly affects cigarette consumption in low-income countries but does not affect high-income countries.

However, different results were found by Perelman et al (2017). There was no significant interaction between income and smoking. For smoking intensity, a significant interaction was found for the education variable. Marianti (2020) also found that socio-economic factors such as gender and age, income, and cigarette prices had no effect on cigarette consumption in Indonesia using IFLS data.

1.2 Socioeconomic Factor

Apart of income, socioeconomic factors also have an effect on tobacco consumption (Ginting & Maulana, 2020; Schaap, van Agt, & Kunst, 2008)

however, be equally or even more discriminatory. This study examined the extent to which smoking behavior is related to other socioeconomic indicators in addition to educational level. Data were derived from the European Household Panel. We selected data for 45,765 respondents aged 25-60 years from nine European countries. The association between six different SEP indicators and smoking prevalence was examined using prevalence rate ratios (RRs using a multivariate analysis found that the level of education, employment, wealth accumulation as measured by household assets, and housing ownership influenced cigarette consumption. In differentiating cigarette consumption by rich and poor households, he found that income and employment status did not significantly affect cigarette consumption among poor households, while for rich households, occupation and home ownership were variables that significantly influenced the households in consuming cigarettes.

In 2019, West Sumatra was ranked the third province with the highest number of smokers, it increases compared to the data in 2013, which was ranked fourth. In addition, cigarette consumption in rural areas is higher, it was around 12.51%, while in urban areas it is as much as 9.65%. However, the BPS of West Sumatra also record that poverty rate is increased by 364.79 thousand or by 6.56%, where poverty in urban areas increased 4.97% and in rural areas increased at 7.43% BPS (2020). This indicates that when poverty in West Sumatra increases with rural area is increase more than urban areas, the share of tobacco consumption in rural areas is also higher than in urban areas. So that the poor households in rural areas in West Sumatra is a biggest user of tobacco which contributes to the increase of poverty in West Sumatra.

Previous research has discussed about the effect of economic factors on tobacco consumption, as was found by Ahsan (2015) that the average expenditure on tobacco consumption was higher in poor households than in rich households. Therefore, this research will focus on two objectives and two models. The dependent variable in first model is the dummy of smoking or not smoking, it will look at the probability of households deciding to become tobacco users. While the dependent variable in the second model is the amount of cigarette consumption for one week, to analyse the factors affecting tobacco demand in West Sumatra. The independent variables on both models are the same, namely income, employment status, age, education level, marital status, type of area, home ownership, home's conditions.

2. Research Method
2.1. Data Analysis

This study aims to explain the factors that influence the demand for cigarette consumption in West Sumatra. This research was conducted through a literature study of data that has been published by relevant agencies, namely from Susenas or National Socio-Economic Survey in 2019. The population of this study were tobacco users in West Sumatra, while the sample was the labour force aged more than 15 years old who are tobacco users in West Sumatra.

2.2. Research Model

This study uses a two-part model or two estimation models, namely the logit model and linear regression with the least squares' method. The logit model is used to see the probability of individuals becoming smokers. First, we see whether household members decide to smoke or not, then if they decide to smoke, how much will be consumed per week. The second method is regression which aims to look at the factors that influence tobacco consumption, after being controlled by many other variables or factors such as education level, marital status, occupation, gender, age, type of area, home ownership and home's facilities.

a. Logit Model

In this study, the survey of national socio-economic data shows an infinity of zero to positive values. When a person decides not to smoke, the value of consumption is zero. Conversely, smokers will give a positive value when he consumes cigarettes. This causes the results to be biased because the independent variables used are limited Cragg (1971). Apart from these factors, the amount of consumption also depends on whether he decides to consume it or not. So Cragg (1971) developed a new model to overcome the this problems, namely the logit and probit models which are used to

determine an individual's decision to consume or not. The first model can be written as:

$$\Pr(y = 1) = f(x'\beta) \quad (1)$$

Pr (y = 1) indicates the individual's probability of consuming cigarettes, x is the dependent variable matrix, and β is the coefficient matrix of the independent variables. Then probit model will be:

$$\Pr(y = 1)\phi(x'\beta) = \int_{-\infty}^{x'\beta} \frac{1}{\sqrt{2\pi}} \exp\left(-\frac{1}{2} z2\right) dz \quad (2)$$

While in the logit model will be:

$$L(y = 1) = \Delta(x'\beta) = \frac{exp(x'\beta)}{1 + exp(x'\beta)} \quad (3)$$

The use of a logit or probit model depends on the assumed distribution of the observations. If the observations are assumed to be normally distributed, the probit model will be used. Then, the logit model will be used if the observations follow a logistical distribution. This study uses the logarithmic value of the dependent variable. So this causes tobacco consumption to approach the normal distribution which will result in a more precise estimate. Then, the logit is used and can be written as:

$$L = \left(\frac{P_1}{1 - P_1}\right) = (\beta_0 + \beta_1 lnExpCap + \beta_2 Age + \beta_3 Gender + \beta_4 MarStat + \beta_5 Urban + \beta_6 EducLevel + \beta_7 WorkStat + \beta_8 HomeStat + \beta_9 HouseFacility + \mu i) \quad (4)$$

This model tells us that income, age, gender, marital status, type of area, education level, employment status, home ownership, and home's facilities are the determinants of being a smoker.

b.   Multiple Linear Regression Model

The second model uses an ordinary regression model with the least squares method which aims to see the factors that influence cigarette consumption in West Sumatra. The basic OLS model can be written into an equation,

$$Y_i = \beta_o + \beta_i X_i + \mu i \quad (5)$$

Where is the dependent variable and s are the independent variables. is a constant, is the coefficient of each variable, and is an error. So that in this study the multiple linear regression model can be written as follows,

$$Y_1 = \beta_0 + \beta_1 lnExp_{cap} + \beta_{2age} + \beta_{3gender} + \beta_{4marstat} + \beta_{5urban} + \beta_{6educlevel} + \beta_{7workstat} + \beta_{8homestat} + \beta_{9housefasility} + \mu i \quad (6)$$

Where the reflect the number of cigarettes consumed during one week by individuals in West Sumatra, and the independent variables in the first and second model are the same, namely income, age, gender, marital status, type of area, education level, employment status, home ownership, and home's facilities. This model tells us that income, age, gender, marital status, type of area, education level, employment status, home ownership, and home's facilities are the factor causing the demand of tobacco in West Sumatra increase.

3.   Results and Discussion
3.1   Descriptive Analysis

Based on figure 1 we can see that most smoker in West Sumatra is 40 years old and has a family of 4-5 people, the majority of whom live in rural areas. In addition, most of the smokers were male and during the week spent an average of 32 cigarettes per stick.

For the level of education, most of the tobacco users have a low level of education. As for the income level, individuals who have a one-month per capita expenditure level between IDR 888,188-1,608,450 are the group of individuals who consume the most cigarettes, reaching 40%, followed by individuals who have per capita expenditure of more than IDR 1,608,450 of almost 30 %, and finally individuals who have per capita expenditure of less than IDR 683,884 are the individuals who consume the least amount of cigarette, around 26%. This shows that the higher the income level of an individual, the more cigarettes the individual consumes.
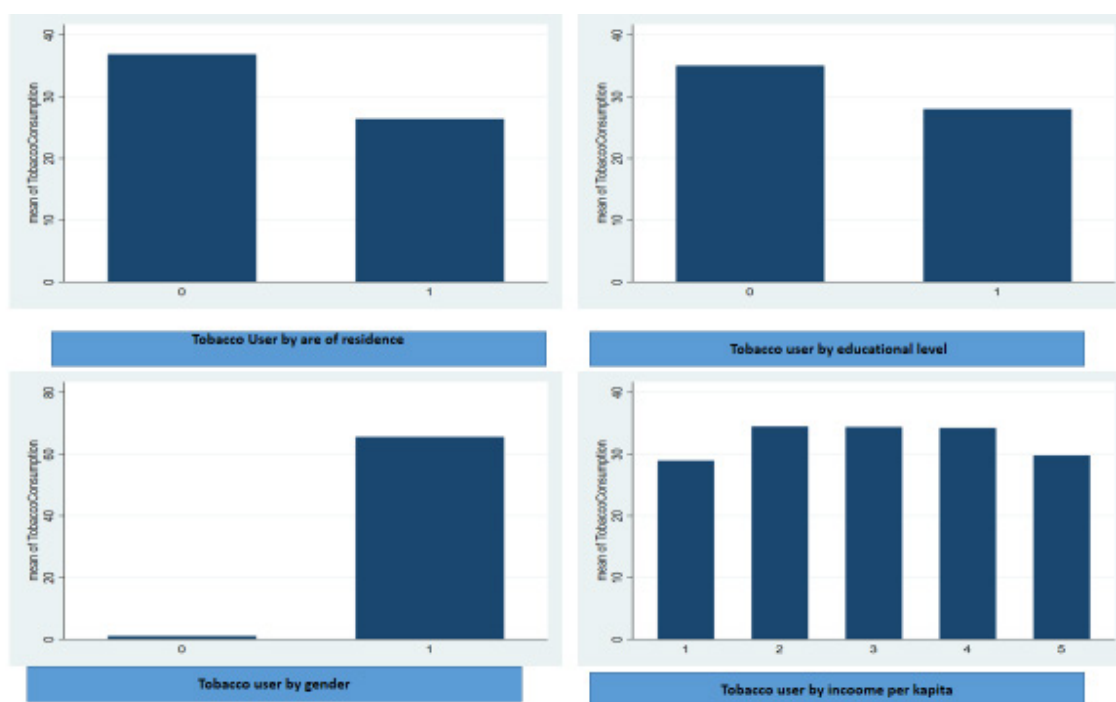
Figure 1 Descriptive Analysis of Tobacco Users in West Sumatra

3.2 Results of Two Parts Model Estimation

This study uses a two-part model. The first model uses logistic regression estimation using a logit that will look at the probability of an individual becoming a tobacco user in West Sumatra. The dependent variable was the Dummy of smoking or not smoking. Meanwhile, the second model uses multiple linear regression to see the factors that influence the demand for tobacco consumption in West Sumatra. The dependent variable in the second model is the amount of cigarette consumption for one week, while the independent variables from the first and second models are the same, namely income, employment status, gender, education, home's conditions, type of area, home ownership and age.

a. Logistic Regression Estimation Result

From the logistic regression test results using the logit model, it is found that age, gender, marital status, area of residence, level of education, employment status and home ownership have a significant effect on the probability of an individual deciding to become a tobacco user.

Meanwhile, income and housing facilities are known to have no effect on the probability of individuals becoming tobacco users. According to hypothesis, income is one of the factors causing people decide to be smokers. However, this study found otherwise. It implies that higher or lower income is not being a factor people to be a smoker.

The variables of age, gender, marital status significantly affect individuals who decide to become tobacco users with coefficient 0.4%, 46% and 30% respectively. This shows that males are more likely to be tobacco users and the older they are, the less likely they are to use tobacco. In addition, when the individual is married it is also the reason the individual becomes a tobacco user because married people tend to have a bigger burden so that the stress level increases which is the main reason for them to become tobacco users Wang (2018). In addition, tobacco producers target the tobacco market more towards males which makes them more likely to become tobacco users Hitchman & Fong (2011)we explored this correlation as well, with economic development defined in terms of gross national income (GNI.

Table 1. Estimation Result of Logistic Regression

Smoke Behaviour	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Lnexp_cap	.058	.04	1.45	.148	-.021	.137	
Age	-.004	.001	-3.12	.002	-.007	-.002	***
Gender	4.616	.073	63.62	0	4.474	4.758	***
marstat	.309	.049	6.24	0	.212	.406	***
Urban	-.18	.039	-4.60	0	-.257	-.103	***
Educlevel	-.5	.04	-12.42	0	-.579	-.421	***
workstat	1.813	.05	36.27	0	1.715	1.911	***
HomeStat	-.178	.042	-4.19	0	-.261	-.095	***
HouseFasility	-.076	.11	-0.69	.491	-.293	.14	
Constant	-6.143	.57	-10.77	0	-7.26	-5.025	***

Mean dependent var	0.302	SD dependent var	0.459	
Pseudo r-squared	0.472	Number of obs	29817.000	
Chi-square	17253.490	Prob > chi2	0.000	
Akaike crit. (AIC)	19291.021	Bayesian crit. (BIC)	19382.352	

*** p<.01, ** p<.05, * p<.1

Other variables that influence an individual to become a tobacco user are the type of area, level of education, employment status and home ownership. People who lives in urban areas, has a low level of education, is less likely to become a tobacco user. We can see this in the logistic regression results with a coefficient of 15% and 50%. The same results were found by Bilgic, Florkowski, Yen, & Akbay (2013), He said that that the head of household in rural areas had a higher probability of smoking, while the head of the household who had a high level of education was not related to tobacco consumption.

According to Wang (2018) there are three things that cause individuals with higher education to decide not to use tobacco. First, educated people are aware of the dangers or negative effects caused by consuming tobacco Koning, Webbink, & Martin (2015). Second, if we think of education as an investment, higher education means greater income in the future or greater consumption or expenditure in the future, so that he thinks that the person receiving the expected level of utility is higher in the future will

have more incentives to stay healthy in the future de Walque (2007). The last reason is that better level of education provides people with better jobs so that they do not damage their health to become tobacco users.

The last significant variables are home ownership and employment status. Individuals who do not own a home are more likely to become tobacco users. In addition, individuals who already have jobs are also more likely to become tobacco users. This can be explained by the fact that when an individual is already working, it will cause him to receive regular income, so that work becomes a variable that causes an individual to become a tobacco user.

b. Estimation Results of Multiple Linear Regression

Table 3 shows the estimation results using the multiple linear regression method to see the factors that influence the demand for tobacco consumption in West Sumatra. From this table, it is found that the level of income, age, gender, marital status, type of area, level of education,

employment status and home ownership significantly affect the amount of cigarette consumption in West Sumatra.

According to hypothesis, income is one of the determinant factors of demand for tobacco. This study is in line with the theory which is said that the higher the income, the higher the consumption of people.

Employment status and income are also known to have a significant effect on tobacco consumption with coefficients of 21% and 2%. When an individual has a job and the higher the income, the higher the number of cigarettes he will consume. This study is in line with the results of research by Adioetomo, Djutaharta, & Hendratno (2005) who found that the higher the income, the higher the purchasing power so that the consumption of tobacco will higher as well. However, different results were found by Wang (2018). He stated that tobacco is an inferior good, where the lower the individual's income, the higher the cigarette consumption. This is because individuals who have high incomes pay more attention to their health and quality of life. More than that, he also emphasized that most cigarette producers have more strategies in marketing that target people with low incomes.

Age is known to have a significant effect on the amount of tobacco consumption. The older the individual the less amount of tobacco he will consume. This study is in line with research conducted by Konfino et al (2015), If a person is getting older, usually have health problems so that they will be less or will stop consuming tobacco

The higher the level of education usually causes individuals to reduce tobacco consumption Bilgic, Florkowski, Yen, & Akbay (2013). In this study, it was found that the level of education affects the demand for tobacco consumption with a coefficient of 9.7%. The lower the level of education, the higher the demand for cigarette consumption in West Sumatra. Lund (2015) dependence, and intention to quit based on nationally representative samples (2007-2012 also found similar results regarding the effect of education level on cigarette consumption. Using logistic regression, he found that low levels of education and high incomes led to a person consuming more tobacco.

Table 2. Estimation Results of Multiple Linear Regression

Tobacco Consumption	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
quan_kons	2.016	.228	8.83	0	1.569	2.464	***
Age	-.059	.019	-3.16	.002	-.095	-.022	***
Gender	57.917	.594	97.49	0	56.753	59.082	***
Marstat	10.91	.663	16.46	0	9.611	12.21	***
Urban	-8.744	.621	-14.09	0	-9.961	-7.528	***
Educlevel	-9.773	.638	-15.32	0	-11.023	-8.523	***
Workstat	21.738	.658	33.02	0	20.447	23.028	***
HomeStat	-2.055	.674	-3.05	.002	-3.375	-.734	***
HouseFasility	-2.212	1.754	-1.26	.207	-5.649	1.226	
Constant	-13.964	2.123	-6.58	0	-18.126	-9.802	***

Mean dependent var		32.342	SD dependent var	60.113
R-squared		0.339	Number of obs	29817.000
F-test		1525.713	Prob > F	0.000
Akaike crit. (AIC)		316586.946	Bayesian crit. (BIC)	316678.278

*** p<.01, ** p<.05, * p<.1

Employment status and type of area are known to have a significant effect on the demand for tobacco consumption. A person who works is always associated with the pressure or stress he will get at work. So that it will cause the amount of tobacco to be consumed to increase. In addition, type of area is another variable that affects tobacco consumption. The more individuals who live in urban, the less amount of tobacco that will be demanded. The last variable is home ownership. Home ownership is always linked to assets owned by individuals. This variable is significant in affecting the amount of tobacco consumed per week. Individuals without homes or valuable assets are known to consume more tobacco Fernanto , Saptiko (2015).

4. Conclusion

Many studies have found that tobacco consumption causes negative effect on societies. Indonesia's tobacco atlas in 2020 said that smoking has contributed to the highest cause of death since 2017 IAKMI (2020). In addition to this, tobacco consumption also causes poverty to increase due to the very high consumption of tobacco, in fact tobacco is not a primary good. Furthermore, health expenditure faces excessive increase Liu, Rao, Hu, Sun, & Mao (2006) and nearly IDR 4,200 trillion or one third of GDP in Indonesia has disappeared due to diseases caused by smoking IAKMI (2020) . However, tobacco use around the world is always increasing every year Lian & Dorotheo (2019).

Different with other studies, this study uses a two part model. The first model uses logistic regression estimation by using the logit model which aims to see the probability of individuals becoming tobacco users in West Sumatra. While the second model uses multiple linear regression which aims to see the factors that influence the demand for tobacco consumption in West Sumatra.

From the logistic regression it is found that age, gender, marital status, area of residence, level of education, employment status and home ownership have a significant effect on the probability of an individual deciding to become a

tobacco user. While income and housing facilities are known to have no effect on the probability of individuals becoming tobacco users. However, the estimation results using multiple linear regression methods to see the factors that influence demand for tobacco consumption in West Sumatra found that income level, age, gender, marital status, area of residence, education level, employment status and home ownership significantly influence the amount of cigarette consumption in West Sumatra. Comparing these two models, there was a slight difference. Income does not influence an individual's decision to become a tobacco user, while this variable is significant in influencing the demand for tobacco in which the higher the income level, the higher the demand for tobacco.

This study also reveal that social and economic factors are significant in influencing the demand for tobacco in West Sumatra. Economic factors can be seen from income which shows that tobacco is a normal good in West Sumatra, that is, the higher the income, the higher the demand from individual Bilgic, Florkowski, Yen, & Akbay (2013). Meanwhile, from social factors, it is found that the level of education is also significant in influencing individuals to become tobacco users and influencing the demand for tobacco consumption in West Sumatra. The logistic and multiple linear regression results found the same conclusion, namely the lower the level of education causes individuals to become tobacco users and also causes the demand for cigarettes in West Sumatra to increase. This result causes the standard of household living to be disrupted because education is a human capital investment Nguyen & Nguyen (2020). So that various policies from the government are expected to control tobacco consumption in West Sumatra such as imposing higher tax for people who buy tobaccos.

However, this study also has some limitation. It only focus on income as an economic factor cause the demand for tobacco to increase. Rather than income, price is also one of the factor which is affect the demand. According to the law of demand, when the price increase the consumption will decrese. Then for the next research it is important to elaborate the effect of tobacco price's on the demand for tobacco.

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APPENDIX
Appendix 1 Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
r102	29817	30.534	32.426	1	77
r105	29817	1.568	.495	1	2
r403	29817	2.421	1.806	1	9
age	29817	40.61	16.953	15	97
hhsize	29817	4.535	1.917	1	16
fwt	29817	128.235	121.648	1	1571
TobaccoConsumption	29817	32.342	60.113	0	560
gender	29817	.485	.5	0	1
marstat	29817	.644	.479	0	1
urban	29817	.432	.495	0	1
Educlevel	29817	.38	.486	0	1
empstat	29817	.647	.478	0	1
workstat	29817	.647	.478	0	1
HomeStat	29817	.741	.438	0	1
light	29817	.961	.195	0	1
fuel	29817	.741	.438	0	1
HomeFas	29817	.972	.165	0	1
HouseFasility	29817	.972	.165	0	1
SmokeBehaviour	29817	.302	.459	0	1
quan kons	29817	3	1.414	1	5
Lnexp cap	29817	13.873	.519	12.19	16.991

Appendix 2 estimation of logistic regression
Iteration 0: log likelihood = -18261.256
Iteration 1: log likelihood = -10914.407
Iteration 2: log likelihood = -9742.472
Iteration 3: log likelihood = -9637.373
Iteration 4: log likelihood = -9634.5107
Iteration 5: log likelihood = -9634.5105

Logistic regression

Number of obs   =   29,817
LR chi2(10)   =   17253.49
Prob > chi2   =   0.0000
Log likelihood = -9634.5105   Pseudo R2   =   0.4724

Smoke Behaviour	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Lnexp_cap	.058	.04	1.45	.148	-.021	.137	
age	-.004	.001	-3.12	.002	-.007	-.002	***
gender	4.616	.073	63.62	0	4.474	4.758	***
marstat	.309	.049	6.24	0	.212	.406	***
urban	-.18	.039	-4.60	0	-.257	-.103	***

Smoke Behaviour	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Educlevel	-.5	.04	-12.42	0	-.579	-.421	***
workstat	1.813	.05	36.27	0	1.715	1.911	***
HomeStat	-.178	.042	-4.19	0	-.261	-.095	***
HouseFasility	-.076	.11	-0.69	.491	-.293	.14	
Constant	-6.143	.57	-10.77	0	-7.26	-5.025	***

Mean dependent var		0.302	SD dependent var		0.459	
Pseudo r-squared		0.472	Number of obs		29817.000	
Chi-square		17253.490	Prob > chi2		0.000	
Akaike crit. (AIC)		19291.021	Bayesian crit. (BIC)		19382.352	

*** p<.01, ** p<.05, * p<.1

Appendix 3 Estimation of linear regression

```
Source |      SS         df        MS                      Number of obs  =   29,817
-------------+----------------------------------          F(9, 29807)    =   1688.61
Model  |   36382778.8     9       4042530.98              Prob > F       =    0.0000
Residual |  71358102.4   29,807   2394.00485              R-squared      =    0.3377
-------------+----------------------------------          Adj R-squared  =    0.3375
Total  |   107740881    29,816    3613.52567              Root MSE       =    48.929
```

Linear regression

Tobacco Consumption	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
quan_kons	2.016	.228	8.83	0	1.569	2.464	***
age	-.059	.019	-3.16	.002	-.095	-.022	***
gender	57.917	.594	97.49	0	56.753	59.082	***
marstat	10.91	.663	16.46	0	9.611	12.21	***
urban	-8.744	.621	-14.09	0	-9.961	-7.528	***
Educlevel	-9.773	.638	-15.32	0	-11.023	-8.523	***
workstat	21.738	.658	33.02	0	20.447	23.028	***
HomeStat	-2.055	.674	-3.05	.002	-3.375	-.734	***
HouseFasility	-2.212	1.754	-1.26	.207	-5.649	1.226	
Constant	-13.964	2.123	-6.58	0	-18.126	-9.802	***

Mean dependent var		32.342	SD dependent var		60.113	
R-squared		0.339	Number of obs		29817.000	
F-test		1525.713	Prob > F		0.000	
Akaike crit. (AIC)		316586.946	Bayesian crit. (BIC)		316678.278	

*** p<.01, ** p<.05, * p<.1