

Alarming numbers!

North Macedonia is among the leaders in smoking cigarettes worldwide.

- Prevalence rate is relatively stable at 40%.
- The intensity of smoking is high at 28.2 packs per month per household.
- Health and economic policy decisions based on trial and error in NMK.
- Previous researches in health economics not existent for NMK.

Past trends

There has been a **negative relationship** between cigarette prices and consumption in North Macedonia.

Cigarette consumption in North Macedonia

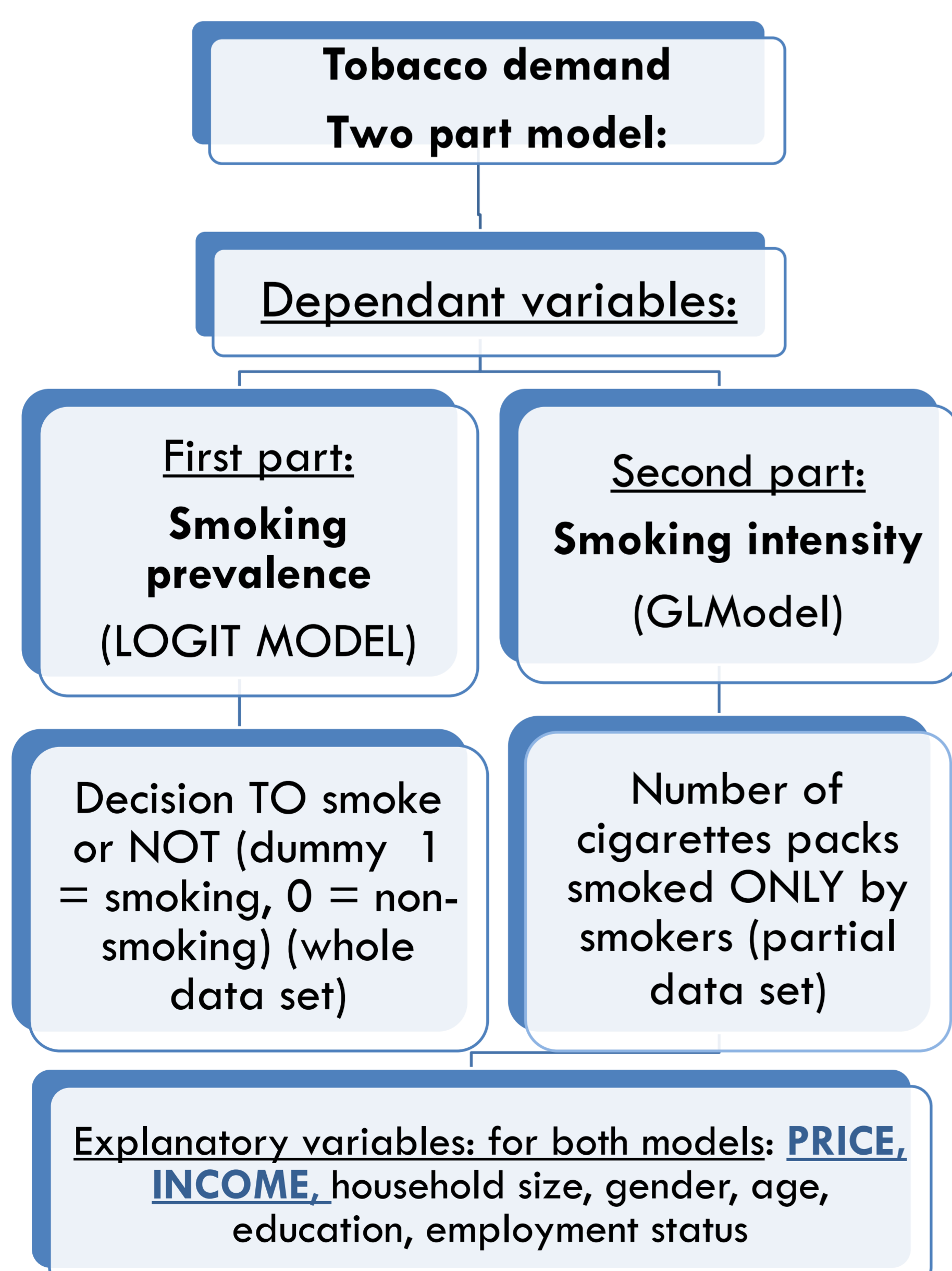
Year	Smoking prevalence percent	Average number of cigarettes packs (per household, per month)	Average real monthly household expenditure on cigarettes (in MKD)	Average real price(in MKD)
2015	40.5%	30.5	2,226.6	73.14
2016	39.7%	29.1	2,333.9	80.41
2017	39.5%	28.2	2,550.4	89.67

Source: Author calculations based on HBS data for North Macedonia.

Methodology

Data for analysis are taken from the Household Budget Survey conducted by State Statistical Office (2015-2017), approximately 2800 households per year.

Two part modelling procedure is described in the graph below.



Results

VARIABLES	Smoking prevalence		Smoking intensity	
	Logit model		GLM	
Price	-0.357*	(0.205)	-0.146*	(0.103)
Price squared				
Income	0.857***	(0.079)	0.533***	(0.042)
Income squared	-0.125***	(0.035)	-0.100***	(0.018)
Household size	0.052***	(0.020)	0.066***	(0.009)
Male ratio	0.580***	(0.121)	0.295***	(0.065)
Adult ratio	0.226	(0.198)	0.210**	(0.100)
Education	-0.034***	(0.009)	-0.016***	(0.005)
HH Activity: Employed				
Unemployed	-0.674***	(0.070)	-0.057	(0.037)
Pensioners	-0.185**	(0.091)	0.048	(0.046)
Self-employed	-0.049	(0.120)	0.073	(0.064)
Constant	-0.381	(0.929)	3.148***	(0.468)
Marginal effects (% , elasticities)				
Price	-0.214*	(0.123)	-0.147*	(0.103)
Income	0.411***	(0.026)	0.322***	(0.018)
BIC	10908.41		-25820.42	
Log likelihood	-5404.38		-14876.74	
Observations	8593		3429	

Source: Author calculations. *** p<0.01, ** p<0.05, * p<0.1; standard errors in parentheses.

Findings and suggestions

- ❑ **Higher prices reduce both smoking prevalence and consumption of cigarettes among smokers.** An increase in price of 10 percent would result in a decrease of smoking prevalence by 2.1 percent and smoking intensity would decline by around 1.5 percent.
- ❑ **Increases in income increases both smoking prevalence and intensity.** However, income has a squared relationship to cigarette demand, suggesting that the highest and lowest income HHs tend to smoke less.
- ❑ **Bigger households are significantly more likely to smoke,** as well as the households with more males. In addition, they are prone to smoke more packs per month.
- ❑ **The higher education decreases the probability for the people to smoke.** It also affects the smoking intensity, by decreasing the number of packs smoked.

Policy implications

URGENT ACTION NEEDED!

- ❑ **Increase in prices can be used as a measure for decreasing cigarettes consumption.**
- ❑ **The increase in prices should be higher than the incomes increase in order for the affordability of cigarettes to be decreased.**
- ❑ **Stimulating better and higher education can indirectly affect cigarette demand.**
- ❑ **Antismoking campaigns could be directed more towards specific target groups such as males, teenagers, municipalities with bigger households.**



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