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**Kriminaalpoliitika uuringud**

**3**

**KURITEGEVUST MÕJUTAVAD  
SOTSIAALMAJANDUSLIKUD JA  
DEMOGRAAFILISED TEGURID**

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## SUMMARY

The aim of this paper is to provide evidence on economic and socio-demographic determinants of crime in Estonia. We use recorded crime data, which covers Estonian counties between 1997 and 2004 and Estonian municipalities between 2003 and 2004. We examine descriptive statistics of crime rates and potential explanatory variables and estimate several econometric models using data on overall crime rates, thefts and violent crimes.

In the first chapter of this paper we examine literature on economic and socio-demographic incentives of crime. In the second chapter we describe Estonian recorded crime data from period 1997–2004 and in the third chapter we analyze potential determinants of crime using descriptive statistics. The fourth chapter gives an overview of crime rates and model estimating results on county level and the fifth chapter presents the results on local municipality level. Differences between county level and municipality level results may probably appear due to different extent of cross-sectional variance of certain variables and their stability over time. There are also some restrictions implied by lack of some data on corresponding level of aggregation. Therefore we shall consider model estimation results on these two levels of aggregation rather supplementing each other.

The history of employing economic approach to investigation of determinants of crime reaches to nineteen sixties. Pioneers in this field were Belton M. Fleisher (1963, 1966) and Gary S. Becker. In Becker's model, one makes his choice between participating in legitimate and illegitimate activities according to costs and revenues returning. There are many ways to measure these costs and revenues: one could handle legal sector wages as alternative cost of committing crimes for example. The majority of later investigators have taken Gary S. Becker's model as theoretical framework for their empirical analysis.

According to the economic theory of crime there are several ways to measure the possibilities of earning legal or illegal income. Thus several labour market indicators, socio-economic factors and deterrence variables are employed as explanatory variables, depending on the concrete aim of the researcher to investigate causal relationships between crime and a selected variable.

The most popular labour market indicators used by several investigators of crime are income levels, unemployment and employment levels. Many empirical studies have found evidence that there exists a positive relationship between crime rates and unemployment rates. But in several studies this relationship has not indicated statistical significance. According to Estonian data there appears covariance between crime and unemployment rates.

The level of income may influence crime rates in two opposite directions. Improved legal income earning possibilities reduce one's motivation to get involved in illegal activities. In the other way, increased possibilities of earning legal income also give rise to better opportunities of finding illegal ways to earn income. In case of Estonia there seems to appear the tendency that higher

income levels in the area also increase crime rates.

Many investigators have analyzed the impact of participating in legal activities on crime and found evidence that participating in legal activities such as attaining education or being employed itself, not though the income from these activities has the impact to reduce crime. In case of Estonian data there was no evidence found on this issue.

Many empirical studies have employed several demographic factors into their analysis. Often the share of young men or the share of foreigners in the population has turned out to be statistically significant. Young men are more likely to commit crimes because of their better physical features and moral preparedness to commit a crime. Young people may also have restricted possibilities of earning satisfying income because of their lack of experiences. In Estonia the share of young men in the population has very little variance in time during the period observed and cross-sectional differences are also quite small. There was found no significant positive relationship between crime rates and the share of young men in population.

Social norms accepted by different cultures differ. Foreigners may face difficulties while adapting oneself to resident culture. The language barrier aggravates their opportunities of finding a satisfying job. In Estonia the share of foreigners in population is strongly related to higher crime rates in the area. This relationship occurs not only while studying property crime but also in the case of violent crime.

Besides economic and socio-demographic indicators there is one more important group of variables, which describe the deterrence effects. Crime detection rates, the number of policemen in the area, the amount of resources in use by local police forces, number of prisoners and levels of punishments are most commonly employed deterrence variables. There appears a negative relationship between Estonian crime rates and detection rates on the county level.

On the county level the share of foreigners in the population, the income level, the detection rate, population density and the county's location on an island or mainland showed statistical significance as determinants of overall crime rates and thefts. The share of foreigners, population density and higher income levels are positively associated with higher crime rates in the area. Increased detection rates have negative effect on crime rates. The counties located on an island have lower crime rates than the counties located on the mainland. There occurs a significant correlation between the share of foreigners in the population and the population density on the county level. Thus specifying a single model that takes into account all significant variables did not succeed and several models are estimated to examine the determinants of crime.

The municipality level results found evidence that the share of foreigners in the population and the location of the administrative unit on an island or mainland show statistical significance. In case of non-urban municipalities the unemployment rate and the average income level were also found to have a

positive impact on overall crime rates and thefts. The municipality's location by sea and its distance from the county's centre also turned out to be significant. A possible explanation provided is that the location by sea and the vicinity of the centre increase the share of crimes committed by non-resident offenders. On the municipality level there was found no impact of population density on crime rates. This is probably due to marginal differences between non-urban municipalities population density numbers. The crime rates of urban municipalities are highly associated with the corresponding number of population.

The determinants of drug offenses were examined using only the municipality level data. No clear results can be presented. Different indicators showed statistical significance depending on the estimated model. Shares of young people and foreigners in the population were found to have strongest impact on drug offenses. There are more drug offenders in bigger towns.

The only variable that turned out to be a statistically significant determinant of violent crime is the share of foreigners in the population, which was found significant on both the county level and the municipality level. The analysis of Estonian data has, similarly to the majority of empirical studies in this research area, provided evidence that economic and socio-demographic factors are much more significant determinants of property crime than violent crime.

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