

*Law*

## **Criminality and Socio-Economic Status Correlation Determinants**

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**The effect of the economic situation in the country on criminality can be analyzed in two directions. 1) During economic downturn more people have motive to commit crime. Due to low socio-economic status more people commit property-related crimes (stealing, robbery, banditry). In this way, they try to obtain what they do not have. Socio-economic hardships also cause domestic or other types of violence. 2) It is also possible for more crimes to be committed during economic uptick, since in that case, more people own unnecessary luxury items, which make them more susceptible to robbery. The improved economic situation also increases the demand for alcohol and drugs, which is a specific factor and circumstance for creating criminality. The study considers the socio-economic situation of affects on criminality. We try to analyze if there is connection between social inequality and crime rates, whether the increased social inequality irreversibly increases crime rates and vice versa. Based on the determinants of the correlation between criminality and socio-economic situation, recommendations with the purpose of prevention the criminality are provided in the study. © 2021 Bull. Georg. Natl. Acad. Sci.**

Registered crime, quality-of-life index, crime index, slope, correlation, social inequality

Socio-economic status and inequality play an important role in determining the crime level in the society and detect the causes of the determinants of crime. Several studies exist on this subject by foreign scientists, namely, theory on the connection between the dominant economic conditions and criminality indicating that in poor families cases of banditry are higher [1]. And on the contrary, weak connection between unemployment and level of criminality is also confirmed [2]. Correlation between criminality levels and unemployment can

be positive, negative or non-existent depending on the type of crime. There is a concept that important correlation is the positive one between unemployment and robbery, theft and banditry [3]. It is established that the rate of increase of crimes directed against property is closely connected with economic growth, especially, when the help was increased sharply, rates of the increase of property-related crimes slow down [4]. Different analyses show that there is significant correlation between the rates of crime and short-term unemployment

[5]. Studies also show that poverty has little effect on violent crimes, as opposed to inequality, which significantly affects violent crimes, while inequality has less effect on property-related crime rates than poverty [6].

Therefore, we set the investigation of determinants of the correlation between criminality and socio-economic situation as the goal of the study.

The study concerns: first, how the socio-economic conditions affect the crime rate, and second, the connection between social inequality and crime rate, and whether the growing inequality irreversibly increases the crime rate, and vice versa.

We set determining the correlation between socio-economic conditions and criminality, and between social inequality and criminality as the task of the study.

The novelty of the study consists of coming up with the life quality index by the authors interpretation and calculating its slope model with Georgian criminality index.

## Methodology of the Study

The study was planned via a triangulation approach, which means that several study methodologies were used. The procedural plan of the study was set as follows: 1) collection and processing the data; 2) Mathematical modelling; 3) Analysis/conclusion.

In order to obtain a single measure for the quality of life, we reduced all of the factors affecting it to a single measure, for which these factors were grouped into 3 blocks. We calculated the economics, social and ecological situation of the population according to measures included in each block, and by taking the geometric mean of these three results we obtained general indicator of the quality of life, which can be represented with the following formula:

$$LI = \sqrt[3]{I_{econ} * I_{soc} * I_{ecol}} .$$

In order to calculate the quality of life using our method, we reduced the social, economic and ecological indicators to 10 basic indicators, and the mean of those can be used to determine the quality of life index. We calculate each of these indicator indexes by the following formula:

$$I = \frac{x - \min(x)}{\max(x) - \min(x)} .$$

After the Georgian population quality of life index calculated in 2012-2020, we performed a regressive (slope) correlational analysis with the Georgian criminality index. For the regressive (slope) analysis, we used the following formula:

$$b = \frac{\sum(x - \bar{x})(y - \bar{y})}{\sum(x - \bar{x})^2} .$$

As for the formula used to determine the correlation between variables, it looks like this:

$$Correl(X, Y) = \frac{\sum(x - \bar{x})(y - \bar{y})}{\sqrt{\sum(x - \bar{x})^2 \sum(y - \bar{y})^2}} .$$

**Results and the Interpretation of the Study, Economic Situation, Social Inequality and Crime Rate.** Society tries to improve its own economic situation by perfecting production on every step of its development and to satisfy that way its own ever-increasing material and spiritual needs reflected in the population's standard of living, which is an extremely important socio-economic category. In order to calculate the quality of life using our method, we reduced the social, economic and ecological indicators to 10 basic indicators. The mean of those can be used to determine the quality of life index, which in itself has correlation with the criminality index: 1) Income index; 2) Income inequality index; 3) Unemployment index; 4) Education index; 5) Longevity index (indicator of healthcare and demographic situation); 6) Money spent on groceries index; 7) Social provision index;

8) Security index; 9) Ecological situation index; 10) Human right index.

After calculating each of these indexes, we get the Georgian population quality of life index, which will be the geometric mean of the given indexes.

Table represents the registered crime, income per person, and the comparative analysis of the quality of life and criminality index. By the absolute indicator it is clear that the increase in income per person (in GEL) is not followed by the reduction of the registered crime rates, since income per person does not contain important indexes like income inequality and unemployment index.

During 2012-2020, the quality of life index reached its peak in 2019, and its lowest point in 2012. Analyzing these results by index, we can discuss the range of the quality-of-life development index in the country the following way: low advancement (0-0.5); average advancement (0.51-0.70); highly advanced (0.71-0.8); highest advancement (0.81-1.0).

According to Table 1, Georgia is within the average advancement range countries. Depending on the organization performing the calculation of the quality-of-life indicator, the subindexes are being changed by the study organizers, caused by

the wide area of the study of the quality of life. We do not consider the index calculated by us to be a unique indicator which fully reflects the quality of life of the population, however, it is acceptable to represent the overall quality of life index in this way, which, through the addition of new indicators, creation of new index blocks and evolution will eventually equal to the index more accurately representing the quality of life of the population of the country.

According to the results of the existing sociological studies, a 1% increase in inequality is correlated to 0.2% increase in banditry, 0.28% increase in robbery, and 0.27% increase in automobile-related crimes [7]. Meanwhile, according to our study, as we can see from Table 1, there exists an inverse average correlation (-50.8%) between the quality-of-life index and the criminality index, while the regressive (slope) analysis show that when, during 2012-2020, the quality of life increased by 1%, the crime rate in the country dropped by 9.21%.

## Conclusion

Judging by the results of the study, it can be concluded that the increase in income per person (in GEL) is not followed by the reduction of the

**Table. Registered crime, income per person, quality of life and crime index\***

Index	2012	2013	2014	2015	2016	2017	2018	2019	2020
Registered crime	38.736	43.028	36.526	35.096	35.997	37.944	58.412	64.123	56.596
Income per person (GEL)	7.302	7.691	8.368	9.109	9.614	10.934	11.968	13.239	13.293
Quality of life index	0.525	0.531	0.526	0.527	0.528	0.532	0.539	0.544	0.539
Criminality index	0.313	0.196	0.199	0.22	0.222	0.208	0.204	0.199	0.202
Correlation	-50.80%								
Slope	-9.21%								

\*Data regarding the registered crimes and income per person (GEL) were obtained from the Georgian National Statistics Service website, while the quality of life index, their correlation and slope were determined by the authors.

registered crime rates, since income per person does not contain important indexes like the quality of life index. We constructed the Georgian population quality of life index in 2012-2020 based on calculating the Human Development Index, and the peak of this index was registered in 2019 and the lowest point – in 2012, and the average value of the index was 0.5325, which puts Georgia in the average advancement in 2012-2020. There exists an inverse average correlation (-50.8%) between the quality of life index and the criminality index, while the regressive (slope) analysis show that

when, during 2012-2020, the quality of life increased by 1%, the crime rate in the country dropped by 9.21%.

Criminological and socio-economic studies have shown [8] that in the country, the politics aimed at preventing and fighting anti-social-justice phenomena and improving the quality of life of the population must be conducted by advancing the political, economic, social and environmental factors, which will naturally be followed by crime prevention and crime index improvement.

სამართალი

## დანაშაულობის და სოციალურ-ეკონომიკური მდგომარეობის ურთიერთდამოკიდებულების დეტერმინანტები

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(წარმოდგენილია აკადემიის წევრის ვ. ლორთქიფანიძის მიერ)

ქვეყანაში არსებული ეკონომიკური ვითარების გავლენა დანაშაულობაზე ორი მიმართულებით შეიძლება გაანალიზდეს. პირველი – ეკონომიკური დაღმავლობის პერიოდში უფრო მეტ ადამიანს აქვს მოტივი, რომ ჩაიდინოს დანაშაული. დაბალი სოციალურ-ეკონომიკური მდგომარეობის გამო უფრო მეტი ადამიანი სჩადის დანაშაულს საკუთრების წინააღმდეგ (ძარცვა, ქურდობა, ყაჩაღობა), ამ გზით ისინი ცდილობენ მიიღონ ის, რისი შეძენის საშუალებაც მათ არ აქვთ. სოციალურ-ეკონომიკური სიდუხჭირე იწვევს ასევე მეტ ოჯახურ თუ სხვა ტიპის ძალადობას. მეორე – ასევე, შესაძლოა ეკონომიკური აღმავლობის პერიოდშიც მოხდეს მეტი დანაშაული, რადგან ამ შემთხვევაში უფრო მეტი ადამიანი ფლობს ჭარბ ფუფუნების საგნებს, რაც მათ ქურდობას უფრო ხელმისაწვდომს ხდის. გაუმჯობესებული ეკონომიკური პირობების შედეგად იზრდება მოთხოვნა ალკოჰოლსა და ნარკოტიკულ საშუალებებზეც, რაც გარკვეული სახით, დანაშაულობის წარმოშობის კონკრეტულ ფაქტორსა და გარემოებას წარმოადგენს. კვლევაში განხილულია – პირველი, თუ როგორ ახდენს გავლენას დანაშაულის დონეზე სოციალურ-ეკონომიკური პირობები. მეორე, რა კავშირია სოციალურ უთანასწორობასა და დანაშაულის დონეს შორის, გაზრდილი სოციალური უთანასწორობა გარდაუვლად ზრდის თუ არა დანაშაულის დონეს და პირიქით. დანაშაულობის და სოციალურ-ეკონომიკური მდგომარეობის ურთიერთდამოკიდებულების დეტერმინანტების საფუძველზე ნაშრომში მოცემულია დანაშაულობის პრევენციის მიზნით დასკვნითი რეკომენდაციები.

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