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## **Socio-economic development of Polish regions and crime**

### **Abstract**

The purpose of this study is to examine the relationship between the socio-economic development of different regions of Poland and the number and structure of the most frequent crimes committed in them. The study clearly shows that crimes related to corruption and theft are most frequently committed in the richer regions of Poland, while the number of crimes related to damage to property decreased with the level of socio-economic development. Among the analyzed crimes, the highest correlation with macroeconomic variables was observed in the case of theft and corruption crimes; a particularly strong relationship was found between corruption and the level of GDP and wages, and between the number of thefts and the stock of housing and the level of GDP in the regions. Moreover, the structure and number of crimes in the poorest regions of Poland show many similarities, with five of the eight poorest regions in eastern Poland showing a relationship between the number and types of crimes.

**Keywords:** economic development, society, crime

### **Introduction**

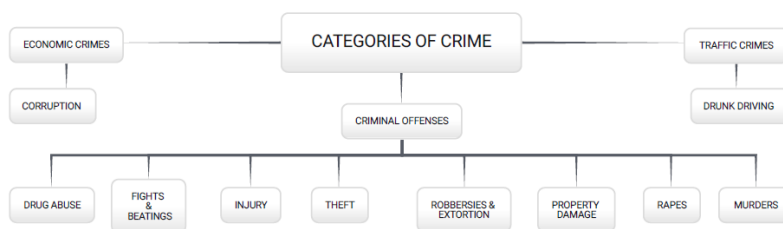
The purpose of this paper is to examine the relationship between the socio-economic development of Polish regions and the number and type of crimes committed in them. In order to determine the level of development of particular regions, the following macroeconomic factors were used: unemployment rate, gross domestic product per capita, average monthly salary, and housing stock per capita. The study used data taken from the Central Statistical Office and official statistics published by the Polish police. The study used Ward's method,

the comparative and descriptive method, and the correlation coefficient. The data was visualized using classification trees, cartograms and scatter diagrams.

## Crime in Poland

The Criminal Code defines a crime as an act that is prohibited under penalty of law presently being in force<sup>1</sup>. Crime is classified into a felony and a misdemeanor. The difference between these terms is in the amount of punishment the defendant will receive for the criminal act. A misdemeanor is obviously a prohibited act punishable by a fine exceeding 30 daily rates or more than PLN 5,000, a restriction of liberty exceeding one month, or imprisonment exceeding one month. A crime, on the other hand, is a prohibited act punishable by imprisonment for at least 3 years or by a more severe punishment. Moreover, a crime is only committed intentionally, while a misdemeanour may also be committed unintentionally<sup>2</sup>.

In their published statistics, the Polish police divide crimes into categories presented in the diagram below.



**Figure 1.** Main division of crimes performed by the Polish Police

Source: Own compilation based on: [statystyka.policja.pl](http://statystyka.policja.pl), download date: 15.04.2021.

For this study, the most frequently committed crimes from the group of criminal offenses i.e. theft of other's property, damage to property and drug-related crimes were selected, as well as crimes related to the other two categories i.e. corruption and driving while intoxicated.

One of the most common crimes in Poland is theft, which is defined as taking possession of another person's property with the aim of appropriating it<sup>3</sup>. Moreover, theft is included in the group of offences against property, which are

<sup>1</sup> Dz. U z 1997., nr 88, poz. 553, ze zm.

<sup>2</sup> Ibidem.

<sup>3</sup> S. Mordwa, *Kradzieże w przestrzeni Łodzi*, Acta Universitatis Lodziensis, „Folia Geographica Socio-Oeconomica” 2011, nr 11.

defined in articles 278 to 296 of the Criminal Code. The criminal responsibility of the perpetrator of theft is clearly described in article 278<sup>4</sup>. In the Criminal Code, theft is differentiated by types. The first of them are qualified types, which include particularly bold theft, burglary, robbery, theft of property of considerable value and theft of property of special cultural significance. Another type is called the privileged type, which includes an incident of lesser gravity<sup>5</sup>. In literature it is pointed out that about 30% of employees commit theft<sup>6</sup>, and theft for pleasure, the so-called shoplifting and joyriding, is becoming more and more popular<sup>7</sup>.

An important threat to human life is road accidents; according to WHO data, about 1.35 million people die on the roads each year<sup>8</sup>. One of the main factors affecting the number of accidents is driving while intoxicated; in Poland, 20% of accidents are caused by drivers driving under the influence of alcohol<sup>9</sup>. According to the annual report released by the police in 2020, drivers most often caused accidents by speeding, failing to keep a proper distance between vehicles, and improperly overtaking other vehicles<sup>10</sup>.

The most common economic crime in Polish companies is corruption: more than half of Polish entrepreneurs affected by fraud have dealt with a corruption crime<sup>11</sup>. Corruption is an important problem not only in Poland but also internationally, it is usually defined as the abuse of public office to gain private benefits<sup>12</sup>. Corruption can be divided into two types: active corruption, which includes bribery, and passive corruption, i.e. selling. Corruption has many negative consequences in social life. According to a report by the Internal Security Agency, this crime demoralizes society the most, has a negative impact on the lost revenue of the state and leads to a lack of respect for the legal order. In addition, the literature points out that corruption in the political bureaucracy is influenced by a number of factors such as the type of activities performed, the private incentives of the official and the possibility of control by the superior<sup>13</sup>. The mass media, which

<sup>4</sup> Polish Journal of the Laws of 1997, no. 88, item 553, amended.

<sup>5</sup> Ibidem.

<sup>6</sup> R. C. Hollinger, J.P. Clark, *Theft by employees*, National Institute of Justice, 1983.

<sup>7</sup> Z. Melosik, *Kradzież dla przyjemności: „shoplifting” i „joyriding”*, „Studia Edukacyjne” 2020, no. 59, p. 31-48.

<sup>8</sup> *Road traffic injuries*, WHO, who.int/, [date of access: 08.04.2021].

<sup>9</sup> A. J. Owczarek, M. Kowalska, *Epidemiologia wypadków komunikacyjnych w Polsce*, „Probl Hig Epidemiol” 2014, no. 95, p. 55-61.

<sup>10</sup> *Wypadki drogowe w Polsce w 2020 roku*, Komenda Główna Policji – Biuro Ruchu Drogowego, Warszawa, 2021.

<sup>11</sup> *Wysoka skala przestępstw gospodarczych w polskich firmach*, PWC, pwc.pl/, [access on 10.04.2021].

<sup>12</sup> S. Rose-Ackerman, *Corruption*, [in:] *Readings in public choice and constitutional political economy*, Boston 2008, p. 551-566.

<sup>13</sup> A. Banerjee, S. Mullainathan, R. Hanna, *Corruption*, *National Bureau of economic research*, 2012, no. 17968.

provide citizens with a lot of relevant information and examples of corruption, not always verified, are also of great importance in this topic. There are many reasons for corruption, but the main ones are ineffective anti-corruption solutions, an excess of competences in the hands of just one official and the weakness of internal control units<sup>14</sup>. According to Transparency International, Poland is beginning to be perceived as the country most at risk of corruption in the European Union<sup>15</sup>.

The last of the analyzed crimes is the crime under the Act on Counteracting Drug Addiction. Drug addiction is a serious problem on a global scale mainly because of the effects that psychoactive substances have. Among the most serious ones are addiction, cachexia and possible death by drug poisoning<sup>16</sup>. The literature emphasizes that the popular division into so-called soft and hard drugs is dangerous due to the illusory feeling of safety when using soft drugs, such as cannabis<sup>17</sup>. Moreover, it has been noted that men use larger doses of drugs, whereas women are more easily addicted and more likely to return to drugs after abstinence<sup>18</sup>, it has also been pointed out that drug abuse is an increasingly serious problem among older people<sup>19</sup>.

## The structure of crime against the background of socio-economic development of regions

Poland's economic development is clearly differentiated. The western part of Poland is characterized by a higher level of GDP per capita, wealth of the population and a more developed service and industrial sectors, while the eastern part of Poland, despite more funds being allocated there, is still poorer and the dominant economic sector is agriculture<sup>20</sup>. The Mazowieckie Voivodeship clearly stands out among the regions of Poland, but this situation is caused by the capital city of Warsaw, which is an important scientific, cultural, political and economic center. The cartograms below present the evolution of GDP per capita and the number of unemployed people in Poland in 2019.

<sup>14</sup> *Korupcja w Polsce – próba analizy zjawiska*, Raport Agencji Bezpieczeństwa Wewnętrznego, Agencja Bezpieczeństwa Wewnętrznego [accessed on 10.04.2021].

<sup>15</sup> Corruption Perception Index, *2020 Report*, transparency.org/ [accessed on 10.04.2021].

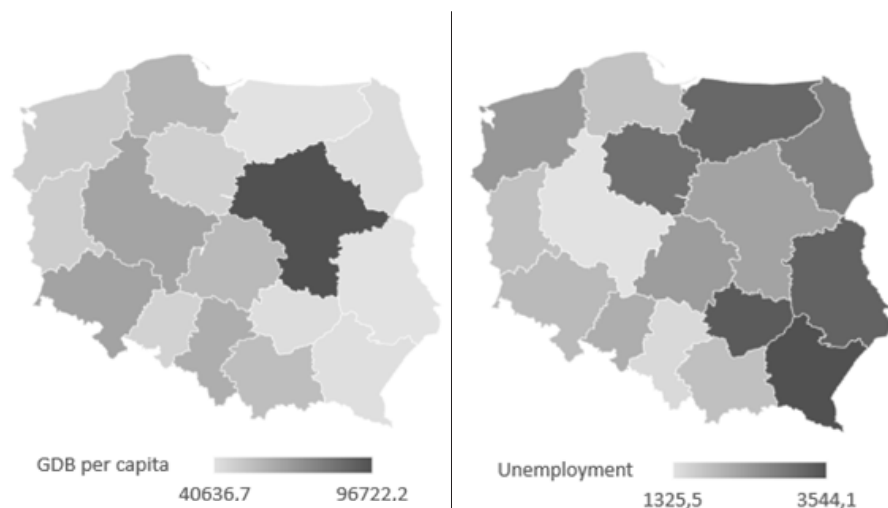
<sup>16</sup> P. Szczukiewicz, *Przyjmowanie substancji psychoaktywnych a zagrożenia rozwoju psychospołecznego młodzieży*, [in:] *Patologie społeczne dzieci, młodzieży i ich rodzin*, ed. M. Parcheta, Stalowa Wola 2015, p. 9-30.

<sup>17</sup> Krajowe Biuro Do Spraw Przeciwdziałania Narkomanii, *Narkotyki*, kbpn.gov.pl/, [accessed on 8.04.2021].

<sup>18</sup> J. B. Becker, M. Hu, *Sex differences in drug abuse*, "Frontiers in neuroendocrinology" 2008, no. 29, p. 36-47.

<sup>19</sup> L. Simoni-Wastila, H. K. Yang, *Psychoactive drug abuse in older adults*, "The American Journal of Geriatric Pharmacotherapy" 2006, no. 4, p. 380-394.

<sup>20</sup> G. Karmowska, M. Marciniak, *Wielowymiarowa analiza porównawcza rozwoju regionalnego Polski Wschodniej i Zachodniej*, „Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu” 2014, no. 347, p. 215-227.



**Figure 2.** GDP per capita and number of unemployed people per 100,000 inhabitants in Poland in 2019

Source: Own compilation based on: CSO data, download date: 15.04.2021.

The above maps clearly show the division in Poland's socio-economic development. Podkarpackie, Świętokrzyskie, Kujawsko-Pomorskie, Lubelskie and Warmińsko-Mazurskie voivodeships face the highest unemployment, with more than 3 thousand unemployed for every 100 thousand inhabitants. Large differences can also be observed in the structure of crimes committed in the regions of Poland.

**Table 1.** The most frequent crimes in Polish regions per 100,000 inhabitants

	Theft	Drugs	Insobriety on traffic	Damage to property	Corruption
Dolnośląskie	476,45	213,53	165,03	28,85	15,79
Kujawsko-Pomorskie	247,14	141,98	147,85	19,06	3,42
Lubelskie	115,18	119,47	167,36	23,52	7,37
Lubuskie	327,14	200,68	169,44	38,34	3,25
Łódzkie	272,55	83,73	160,89	29,76	20,11
Małopolskie	206,14	252,25	111,80	19,82	25,05
Mazowieckie	427,27	160,14	282,71	18,80	43,47
Opolskie	206,38	194,22	137,56	28,28	2,53
Podkarpackie	109,44	70,50	125,03	24,24	4,88
Podlaskie	172,66	104,78	177,82	31,48	3,47
Pomorskie	294,79	113,82	126,85	30,51	6,73
Śląskie	262,22	127,49	134,86	34,54	32,58
Świętokrzyskie	126,29	105,43	142,89	27,14	6,85
Warmińsko-Mazurskie	209,66	99,37	177,19	31,21	5,88
Wielkopolskie	222,84	197,63	137,75	22,47	2,63
Zachodniopomorskie	285,24	211,34	197,70	38,68	5,70

Source: Own compilation based on: CSO data and [statystyka.policja.pl](http://statystyka.policja.pl) [accessed on 15.04.2021].

Table 1 above presents the most common offences per 100,000 residents in the regions of Poland. The most common offences include theft, with the Polish average of nearly 248 offences per 100 thousand residents, followed by drug and alcohol-related offences, with the Polish average of 149 and 160 offences per 100 thousand residents, respectively. The next chart shows the correlation between the selected offences in the regions of Poland.

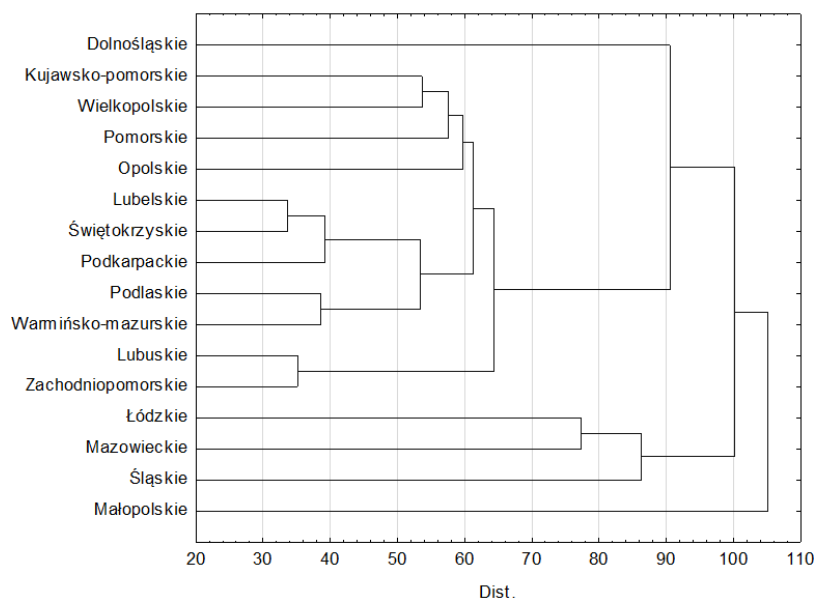
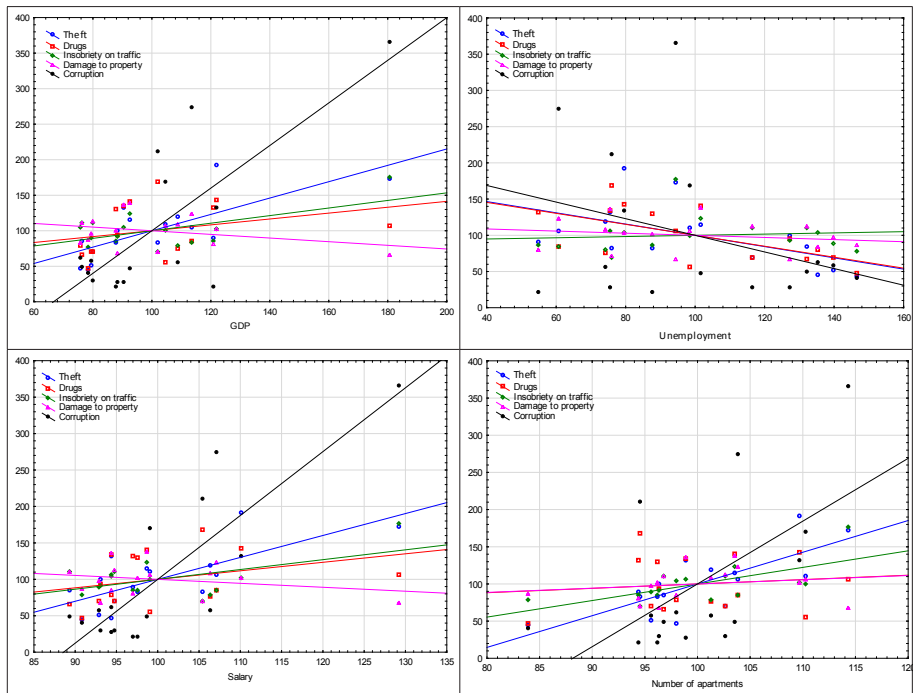


Figure 1. Relationships between the number of crimes committed per capita in each province in Poland in 2019

Source: Own compilation based on CSO data and [statystyka.policja.pl](http://statystyka.policja.pl) [accessed on 15.04.2021].

Figure 1 above shows the interdependencies in crimes committed between the less developed regions of Poland. This group includes the following voivodships: Lubelskie, Świętokrzyskie, Podkarpackie, Podlaskie and Warmińsko-Mazurskie. The least interdependencies with other voivodships are found in the richest regions of Poland: Mazowieckie, Małopolskie, Śląskie and Łódzkie.



**Figure 2.** Relationships between the most frequently committed crimes in Poland and indicators of socio-economic development in Polish regions in 2019

Source: Own compilation based on CSO data and [statystyka.policja.pl](http://statystyka.policja.pl) [accessed on 15.04.2021].

The above graphs present the relationship between the most frequently committed crimes in Poland by voivodeship and indicators of social-economic development, which include: GDP per capita, the number of unemployed people, the amount of average, monthly salary and the number of dwellings per hundred thousand inhabitants. The highest positive correlations were found for macroeconomic variables of GDP per capita and monthly wages, and the number of thefts and corruption offenses clearly increased with the increase of these variables. Also, a positive, strong relationship was observed between these variables and the number of intoxicated drivers, while a negative but weaker relationship was shown by the number of property damage crimes. The weakest correlation was observed between the number of unemployed and the number of drug offenses.

Relationships between particular types of crime and indicators of socio-economic development of Polish regions, were also examined using Pearson's linear correlation. The results are presented in the table below.

**Table 2.** Correlation results between different types of crime and indicators of socio-economic development

	Theft	Drugs	Insobriety on traffic	Damage to property	Corruption
GDP	0,738	0,300	0,567	-0,302	0,768
Unemployment	-0,554	-0,610	0,099	-0,193	-0,327
Wages	0,724	0,317	0,539	-0,240	0,841
Apartments	0,761	0,118	0,661	0,185	0,602

Source: Own compilation based on CSO data and [statystyka.policja.pl](http://statystyka.policja.pl) [accessed on 15.04.2021].

From the above table, it is clear that the development of the crimes selected for the study in the regions of Poland is correlated with the development of individual provinces. The strongest positive correlations were found for the crimes of corruption and theft, while the number of intoxicated drivers was relatively strongly correlated with GDP and the number of housing units. Weak correlations with macroeconomic variables were found for drug-related crimes, with only a negative correlation between this crime and the number of unemployed people. Negative but weak correlations were shown by the number of property damage crimes.

## Resume

This study delves into the aspect of the relationship between the socio-economic development of the different regions of Poland and the number of most frequently committed crimes. The conclusions of the study are as follows:

1. Corruption and theft offenses were the most common offenses in the wealthier regions of Poland, while the number of property damage offenses decreased as the level of socioeconomic development increased.

2. The weakest relationship between crimes and macroeconomic variables was shown by the changing number of unemployed people, only a slight decrease in the number of crimes related to drug abuse and corruption was found as the number of unemployed people increased.

3. Among the analyzed crimes, the highest correlation with macroeconomic variables was observed in the case of theft and corruption crimes, a particularly strong relationship was found between corruption and the level of GDP and wages, and between the number of thefts and the stock of housing and the level of GDP in the regions.

4. The structure and number of crimes in the poorest regions of Poland show many similarities, with five of the eight poorest regions in eastern Poland showing a relationship between the number and types of crimes committed there.



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## Rozwój społeczno-gospodarczy regionów Polski a przestępczość

### Streszczenie

Celem niniejszego opracowania jest zbadanie zależności między rozwojem społeczno-gospodarczym różnych regionów Polski a liczbą i strukturą najczęściej popełnianych w nich przestępstw. Z badania jasno wynika, że przestępstwa związane z korupcją i kradzieżą popełniane są najczęściej w bogatszych regionach Polski, a wraz z poziomem rozwoju społeczno-gospodarczego zmniejszała się liczba przestępstw związanych

ze zniszczeniem mienia. Spośród analizowanych przestępstw największą korelację ze zmiennymi makroekonomicznymi zaobserwowano w przypadku kradzieży i przestępstw korupcyjnych, szczególnie silną zależność stwierdzono między korupcją a poziomem PKB i wynagrodzeń oraz między liczbą kradzieży a zasobem mieszkań a poziomem PKB w regionach. Ponadto struktura i liczba przestępstw w najbiedniejszych regionach Polski wykazuje wiele podobieństw, przy czym pięć z ośmiu najbiedniejszych regionów Polski wschodniej wykazuje zależność między liczbą i rodzajami przestępstw

**Słowa kluczowe:** rozwój gospodarczy, społeczeństwo, przestępczość