

JOURNAL OF SECURITY AND SUSTAINABILITY ISSUES

ISSN 2029-7017 print/ISSN 2029-7025 online

2015 September Volume 5 Number 1

[http://dx.doi.org/10.9770/jssi.2015.5.1\(3\)](http://dx.doi.org/10.9770/jssi.2015.5.1(3))

TOWARDS SECURITY AND SAFETY: POLICE EFFICIENCY ACROSS EUROPEAN COUNTRIES

Anatolijs Kriviņš

Rīga Stradiņš University, 16 Dzirciema Street, Riga, LV-1007, Latvia

E-mail: anatolijs.krivins@daugavpils.lv

Received 15 May 2015; accepted 10 July 2015

Abstract. The duties of the police (to protect from criminal and other illegal threats life, health, rights and freedoms, property, and the interests of society and the State), requires the substantial financial resources to provide police operations. Nowadays, the police can be considered as a service institution, and the issue of the efficiency of the police work has become topical. The author's research is focused on the multi-national problem of comparing of police efficiency issue. Selected set of countries are the following: Belgium, Czech Republic, Denmark, Germany, Estonia, Greece, Spain, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden, Iceland, Liechtenstein, Norway and Switzerland. The author's research is based on the USA and the UK researchers' studies, surveys of citizens, indicators derived from Eurostat data. The main conclusions of research are the following. The dynamics of the number of crimes recorded in the state, number of crimes recorded by the police per 100,000 residents, as well as the clearance rate cannot be the criteria to determine the efficiency of the police operations. In the situation when regulatory enactments of various countries do not state the same results to be achieved, the author proposes to establish satisfaction with the work of the police and the level of latent crime in the country as universal criteria for transnational comparison.

Keywords: police operations, efficiency, transnational, security, safety

Reference to this paper should be made as follows: Kriviņš, A. Towards security and safety: police efficiency across European countries V. 2015. *Journal of Security and Sustainability Issues* 5(1): 35–44. DOI: [http://dx.doi.org/10.9770/jssi.2015.5.1\(3\)](http://dx.doi.org/10.9770/jssi.2015.5.1(3))

JEL Classifications: K14, K42

1. Introduction

The Police as one of the oldest government bodies (Encyclopaedia Britannica n.d.), through the centuries has gradually changed its philosophical meaning.

In the 80s of the 20th century the pioneers in economic research on the criminal justice system Llad Phillips and Harold L. Jr. Votey in their work "The Economics of Crime Control" compared the functioning of this system to production process (Phillips; Votey 1984). Nowadays, the police can be seen as a service institution providing public safety service, which in considerable extent impacts processes of secure and sustainable development of societies and countries worldwide (Stańczyk 2011; Lankauskienė, Tvaronavičienė 2012; Tvaronavičienė, Grybaitė 2012; Šileika, Bekerytė 2013; Račkauskas, Liesionis 2013; Mačiulis, Tvaronavičienė 2013; Vasiliūnaitė 2014; Zahars, Stivrenieks 2014; Matyasik 2014; Tunčikienė, Drejeris 2015; Giriūnas, Mackevičius 2014; Giriūnienė 2013).

Along with the changes in the perception of the role of the police, the issue of the efficiency of the police work has become topical. Studies have explored a number of aspects - the rate at which an officer has successfully

detected criminal activity when conducting stop and frisks in the past (Song 2012), effectiveness of the police reform (Drake, Simper 2005), the Relationship between police efficiency and Citizen confidence (Fondevila 2008); the Measurement and Evaluation of Efficiency (Dimofte *et al.* 2012); the role of collaboration (HMIC 2012), the implementation of policing (Kirby 2013); the Relationship between police efficiency and crime rate (Dominguez *et al.* 2013), (DeAngelo *et al.* 2014).

Despite the importance of the issue, no universal approach for determining police efficiency criteria, assessment and inter-comparison has been elaborated yet. The author's research is focused on the problem of multi-national comparison of police efficiency issue. This article will not analyze police efficiency-raising techniques, only criteria for determining the level of efficiency.

The author's research is based on the USA and the UK researchers' studies, population surveys, indicators derived from Eurostat.

With help of oxford dictionaries we will proceed with defining the terms applied in this study:

Effectiveness ('Oxford Dictionaries', Effectiveness): the degree to which something is successful in producing a desired result; success.

Productivity ('Oxford Dictionaries', Productivity): the effectiveness of productive effort, especially in industry, as measured in terms of the rate of output per unit of input.

Efficient ('Oxford Dictionaries', Efficient): 1) (of a system or machine) achieving maximum productivity with minimum wasted effort or expense. 2) (of a person) working in a well-organized and competent way.

Efficiency ('Oxford Dictionaries', Efficiency): the ratio of the useful work performed by a machine or in a process to the total energy expended or heat taken in.

It can be concluded that the terms *productivity* and *efficiency* are qualitatively similar (similar in content). However, they are not identical. Productivity reflects the relationship between the resources used and the produced result. Efficiency in its turn relates to the achievement of the required result with minimal resources (Farrell 1957).

Basing on the terminology mentioned above, Efficiency of the Police operations is the achievement of the required (stated by regulations) result with minimal resources.

Though in the case of 'input' (resource consumption for operation of the police) in each country it is easily accountable and clearly known, whereas the central problem in assessing the effectiveness remains - identification and measurement of "output" (the achieved result).

Professors Leigh Drake and Dr Richard Simper in their work "*An Economic evaluation of inputs and outputs in policing: problems in efficiency and measurement*" pointed out that: "In order to produce comparative efficiency measures, however, it is essential that the services provided by police forces (the outputs or outcomes) be related to the resources (inputs) utilised by the forces in delivering these outputs (outcomes). A particular problem, however, is that policing includes many inputs and outputs (outcomes) that could potentially be utilised in an efficiency model" (Drake, Simper 2001).

While determining the "Output" it should be noted that the final result of the operations of the police is public safety. While performing the main objectives (to maintain public tranquillity and law and order in society; to protect and respect the individual's fundamental rights and freedoms; to prevent and combat crime; to detect crime; to provide assistance and service functions) in order to achieve the result the police operations focus mainly into two categories: prevention of offences (New Zealand Police 2012) and disclosing of violations of law (Stelfox 2009), that in conjunction with each other has a significant impact on public safety.

Nowadays statistical data for the evaluation of the effectiveness of the performances mentioned above have been widely used by the police. Given the fact that it is easier to find the evidence of their work productivity in

a repressive segment, the modern police while preparing of annual reports on its operations, focus attention of public mainly to such indicators as the number of crimes registered in the state and its dynamics, clearance rate and its changes, as well as the number of police officers in the country.

We will proceed with a brief analysis of these indicators for the selected set of countries: Belgium, Czech Republic, Denmark, Germany, Estonia, Greece, Spain, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden, Iceland, Liechtenstein, Norway and Switzerland.

The choice of countries to be analyzed is determined both by the geographical belonging to Europe, as well as availability of the Eurostat statistics for a sufficient period of time - from 2004 to 2012 for performing of the comparative analysis.

2. The number of recorded crimes

Eurostat database provides the data on the number of crimes registered in certain countries. It shall be admitted that correct cross-country comparisons cannot be made by analysis of the dynamics of the number of recorded crimes without its correlation with the population changes. The criterion "Number of recorded crimes per 100,000 people" has been applied in the study to deal this problem. Basing on Eurostat data, the author has calculated and compiled data for 28 European countries during the period from 2004 to 2012 (Table 1), which allows to get a basic idea and draw some conclusions on the ratio mentioned above.

Table 1. Crimes recorded by the police 2004-2012 (rate per 100,000 population) - derived data

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012
Belgium	9 750	9 567	9 731	9 773	9 784	9 925	9 889	10 099	9 678
Czech Republic	3 449	3 374	3 291	3 485	3 324	3 192	2 995	3 025	2 899
Denmark	8 789	7 996	7 832	8 174	8 710	8 923	8 511	8 394	7 898
Germany	8 037	7 747	7 647	7 635	7 436	7 383	7 253	7 328	7 327
Estonia	3 883	3 894	3 838	3 751	3 809	3 620	3 626	3 201	3 080
Greece	3 675	4 117	4 173	3 800	3 733	3 457	2 986	1 744	1 745
Spain	5 033	5 153	5 151	5 158	5 248	5 059	4 942	4 898	4 846
Croatia	1 984	1 855	1 879	1 759	1 729	1 705	1 704	1 763	1 688
Italy	4 205	4 456	4 773	5 038	4 620	4 457	4 428	4 654	4 746
Cyprus	1 053	984	1 064	997	946	891	1 025	1 010	925
Latvia	2 731	2 286	2 798	2 518	2 622	2 624	2 410	2 486	2 441
Lithuania	2 475	2 446	2 294	2 092	2 240	2 396	2 248	2 361	2 509
Luxembourg	5 914	5 490	5 524	5 933	5 831	6 561	6 081	6 975	7 171
Hungary	4 140	4 323	4 227	4 241	4 066	3 928	4 465	4 520	4 755
Malta	4 598	4 614	4 081	3 699	3 384	2 909	3 211	3 432	3 742
Netherlands	8 116	8 269	8 031	7 971	7 789	7 609	7 204	7 169	6 812
Austria	7 905	7 380	7 142	7 174	6 893	7 098	6 415	6 448	6 518
Poland	3 826	3 615	3 375	3 024	2 839	2 962	3 016	3 009	2 906
Portugal	3 976	3 742	3 801	3 784	4 079	4 033	3 997	3 913	3 825
Romania	1 076	974	1 095	1 332	1 402	1 467	1 442	1 282	1 535
Slovenia	4 336	4 224	4 510	4 387	4 075	4 304	4 372	4 328	4 448
Slovakia	2 443	2 300	2 143	2 062	1 949	1 949	1 767	1 722	1 672
Finland	8 534	8 255	7 918	8 259	8 315	8 287	8 066	8 525	7 876
Sweden	13 913	13 781	13 539	14 334	15 005	15 186	14 671	15 042	14 791
Iceland	5 701	4 097	4 496	4 238	4 621	4 999	4 694	3 969	3 676
Liechtenstein	3 041	3 061	3 406	3 057	3 145	3 417	2 914	2 935	3 131
Norway	6 288	5 985	5 970	5 804	5 577	5 774	5 571	5 371	5 486
Switzerland	5 288	4 757	4 493	4 345	4 257	8 781	8 437	8 805	9 433

It should be taken in consideration that these data provide a summary regarding only recorded crimes and not the number of crimes reported to the police or crimes actually committed in the state.

Statistic data presented in the table show that there are great differences in indicators of the analyzed countries. For example, in 2012 in Romania the number of recorded crimes per 100,000 population was 1,535, whereas in Sweden in 2012 there was 14791 recorded crimes per 100,000 population. Do these data confirm that the Romanian police work more efficiently than the Swedish police?

Prima facie- the logical assumption, that the police is working more effectively in countries with a lower number of recorded crimes per 100,000 residents, does not correspond to the truth.

First of all, it shall be admitted, that the police is not to blame for the increase in the level of crime. Public safety is influenced not only by the operations of the police, but also by a number of other factors: the economic situation in the country, criminal penalty policy, independence of the judicial power, etc. In the European Union the police is becoming only as a supplement to active citizens, this is evidenced by the prevalence of *community policing* philosophy.

Secondly, low figures of the recorded crimes may indicate either a low crime rate, or the fact that operations of the police are focused on concealment of the crimes (failure to record crime). Whereas the inadequately small number of recorded offenses per 100,000 residents is an indicative of the lack of public confidence in the state police, which therefore results in the high latent crime.

A high number of recorded crimes may reflect not the increase in crimes committed by the people but the fact that people trust the police and actively inform the police about crimes that took place, and the police carefully records all information received.

Each country has its own approach to the recording of the reports on the alleged crimes. Therefore, a special care shall be taken in order the greatest possible number of already committed crimes is registered by the police in each country, i.e. to increase the proportion of recorded crimes. Not only a single methodology shall be developed, but also an accurate compliance with the developed methodology shall be exercised in the analyzed countries to receive reliable and comparable statistical data.

Thirdly, the data on number of recorded crimes per 100,000 population should be assessed only in conjunction with data on citizens' trust in the police. In 2012, an important study *Levels of trust in the police in some countries* (ESS round 2012 year) was conducted. Unfortunately, *the ESS round 2012 year* study did not contain data for all countries analyzed, however, an essential detail can be noticed: in Germany, where the police in 2012 has recorded 7328 crimes in average, the trust in the police is significantly higher than the Slovak indicator, though it is among the countries with the lowest rate of recorded crimes per 100,000 population: 1672 crimes per 100,000 population per year (Table 2).

Table 2. Levels of trust in the police in the some countries (ESS round 2012 year)

Country	Level of trust	No trust at all	Disparity
Czech Republic	5,10	5,20	-0,1
Germany	6,84	1,40	5,44
Estonia	5,90	4,00	1,9
Hungary	5,34	4,00	1,34
Poland	5,25	5,1	0,15
Slovenia	5,38	6,30	-0,92
Slovakia	4,15	7,70	-3,55

An assumption can be made that the country in which the number of recorded crimes per 100,000 population is relatively low, public trust in the police is lower. This correlation is confirmed not only by *ESS round 2012 year* data that have been analyzed, but also by many other sources: ESS Round 1 - 2002, ESS Round 2 - 2004, ESS Round 3 - 2006, ESS Round 4 - 2008, ESS Round 5 - 2010 (European Social Survey 2010), *World Values Survey* (World Values Survey 2015), EVS-2008 (European Values Study 2008), ECA Region - *Life in Transition Survey 2010, After the Crisis* (Life in Transition Survey 2010).

In this way, citizens trust in the police “aggravates” the usual statistical indicators (the dynamics of number of crimes recorded, number of crimes recorded by the police per 100,000 population, clearance rate), but at the same time it also confirms the effectiveness of police operations. Increase in the efficiency of the police operations must ensure that the police is interested to record, and not to hide the reports received about the alleged crimes.

For the arguments mentioned above evaluation of efficiency of the police operations should in no way be associated with either a reduction in number of recorded crimes, nor comparison between several countries of a criterion *crimes recorded by the police (rate per 100,000 population)*. However, data for each country on number of crimes recorded by the police shall be carefully compiled to be used for determination of the proportion of latent crime.

The author considers that one of the criteria for efficiency of the police operations would be not reduction of the number of recorded crimes, but **reduction of the proportion of latent crime**. This approach would allow the police to neutralize the desire to manipulate the statistics by failures to record reports on the crimes committed. On the contrary, the police would be interested in collecting all the information received. The fight against latency of crimes would undoubtedly increase the ability of police to obtain information which would allow to prevent and combat offenses more effectively.

3. Crime detection coefficient (clearance rate)

Crime detection is one of the basic tasks of the police. Therefore often there are attempts to attach the operational efficiency of the police to the percentage of solved crimes. We will proceed with a brief analysis of this indicator to see its role in determination of efficiency of the police operations.

A clearance rate refers to the number of cases that are solved by a particular law enforcement agency. The clearance rate may be divided up in a number of different ways, including the type of crime being committed, or the seriousness of the crime (WiseGEEK 2015).

The author supports the views of the researchers Greenwood, Chaiken, and Petersilia, who already in 1977 argued that variations in defining and recording clearances by individual agencies make the clearance rate an inappropriate measure for comparing investigative effectiveness of agencies (*Greenwood et al.1977*).

What is more, this figure should not be applied even within the definite structure, the main reason for this is named by The Encyclopedia of Police Science, “*It is possible, that politically motivated police administrators might **manipulate data** to secure more funding or improve the appearance of organization success*” (Greene 2007). Actually, clearance rate is calculated by dividing the number of crimes that are “cleared” (a charge being laid) by the total number of crimes recorded. Against this background, artificial reducing of the number of recorded crimes may result in the increase of the clearance rate. The previous section examined the issue of analytical problems of the number of recorded crimes.

Along with the decrease in the number of recorded crimes the proportion of solved crimes increases (if registered are mainly cases with a good solving perspective; if there is a suspect). Reliability of the *Clearance rate* is significantly reduced by an artificial increase of this indicator in the practice of the police (Gregory 2009; End Violence 2013).

Clearance rate varies between countries; however, this difference cannot be taken as the basis for comparison of efficiency of the police operations. An important role here plays the credibility of the amount of recorded crimes, as well as the methodology that is used in the calculations.

The number of police officers and productivity indicators

A conclusion can be drawn, that the statistics prepared by the police are more suitable for the determination of productivity, rather than for comparison of the efficiency. Measurable criteria that are independent from subjective manipulation of the police are: the number of police officers in the country, its size and resident population. Indeed, operation of the police will be more productive in a country where the police is able to perform similar Table 3 functions by using fewer human resources.

Table 3. The number of police officers

Country	The number of police officers per 100,000 population in 2004	The number of police officers per 100,000 population in 2012	The number of police officers (per 100,000 population) increase from 2004 till 2012
Belgium	356	422	1,19
Czech Republic	463	364	0,79
Denmark	194	193	0,99
Germany	299	298	0,99
Estonia	258	334	1,29
Greece	455	491	1,08
Spain	466	534	1,15
Croatia	456	499	1,09
Italy	435	466	1,07
Cyprus	678	611	0,90
Latvia	435	317	0,73
Lithuania	339	317	0,94
Luxembourg	297	331	1,11
Hungary	292	368	1,26
Malta	444	456	1,03
Netherlands	221	238	1,08
Austria	333	330	0,99
Poland	264	250	0,95
Portugal	455	437	0,96
Romania	213	264	1,24
Slovenia	382	359	0,94
Slovakia	262	448	1,71
Finland	158	149	0,94
Sweden	188	210	1,12
Iceland	231	205	0,89
Liechtenstein	254	239	0,94
Norway	178	159	0,89
Switzerland	210	222	1,06

These data allow us to determine that in 2004 the average number of police officers per 100,000 population in countries that were analyzed was 329, but in 2012 it increased to 339 police officers.

In 2012, the number of police officers was below the average in such countries as Denmark, Germany, Latvia, Lithuania, Netherlands, Poland, Romania, Finland, Sweden, Iceland, Liechtenstein, Norway, Switzerland, but it was above the average in Belgium, Czech Republic, Estonia, Greece, Spain, Croatia, Italy, Cyprus, Luxembourg, Hungary, Malta, Austria, Portugal, Slovenia, Slovakia.

However, the number of police officers as such is not enough to determine productivity for each police officer. It can be estimated indirectly by basing on the number of registered crimes per a police officer and by calculating area of the state (km²) per a police officer (undoubtedly, these indicators will be largely related to climatic conditions, terrain and other national characteristics, still, these data allow us to compare the indicators of states that have similar characteristics).

The collected information suggests that the average number of crimes recorded in 2004 in 28 countries that were analyzed was 19.57 per a police officer, but in 2012 it was 18.35 per a police officer.

In 2012 the number of recorded crimes per 1 police officer was above the average level in such countries as Belgium (22,95), Denmark (40,97), Germany (24,57), Luxembourg (21,68), Netherlands (28,68), Austria (19,73), Finland (52,93), Sweden (70,51), Norway (34,44) and Switzerland (42,56), but it was below the average in such countries as Czech Republic (7,95), Estonia (9,22), Greece (3,55), Spain (9,07), Croatia(3,38), Italy (10,18), Cyprus (1,51), Latvia (7,69), Lithuania (7,90), Hungary (12,93), Malta (8,21), Poland (11,62), Portugal (8,74), Romania (5,80), Slovenia (12,40), Slovakia (3,72), Iceland (17,90), Liechtenstein (13,12).

The indicator of the country's territory in countries that have been analyzed is ranging from 0.166 km² per a police officer in Malta to 157.01 km² per a police officer in Iceland. Undoubtedly, the correlation between area of the country and the number of police officers occurs due to climatic conditions and terrain of the country, as well as to the location of the population. Taken together, the statistics suggests that in the Northern European countries police officer's service area (in Sweden 22,62 km² per 1 police officer, in Finland 41,88 km² per 1 police officer, in Norway 48,50 km² per 1 police officer, in Iceland 157,01 km² per 1 police officer) is significantly higher than in other European countries such as the Netherlands (1,04), Italy (1,08), Germany (1,46), Spain (2,02), Switzerland (2,34), Austria (3,02), Poland (3,24).

Summary

Such statistical data as crimes recorded by the police (rate per 100,000 population) (clearance rate), the number of police officers (rate per 100,000 population) cannot serve as the criteria for determining the effectiveness of the police operations. Not only these but also other statistical quantitative data that regard prevention of violations of law and the fight against offences have serious shortcomings.

For example, in the area of prevention of violations of law statistics do not take into account the fact that presence of the police, as such, is able to prevent some crimes,³⁴ and the number of these potentially prevented crimes cannot be clearly defined and calculated. The same is true for such operations of the police as preventive lectures and discussions. Conclusion can be drawn that intensity of patrols and number of lectures delivered as well as time spent for cooperation with neighbours (neighbourhood policing) demonstrate exclusively productivity of the police, rather than efficiency. Also in the segment of fight against offences (such indicators as response time of the police to calls and responding to crime in the form of detention) statistical data can be used to measure productivity of the police rather than efficiency.

Efficiency of the police in theory should correlate to achievement of the objectives stated by the laws and regulations, however, these aims should not be attributed to the reduction in the number of registered crimes, the decreasing number of complaints about work of the police, the increase in percentage of solved crimes.

In a situation when the aforesaid indicators are favourable to the police, but at the same time the public has a negative view of the police, the view of the population is more preferable. Indeed, if the person does not trust

the police, than the person will not turn to the police either with the report of crime that took place, nor with complaints about the conduct of a police officer.

Public safety standard is not and cannot be fixed in laws and regulations, therefore the efficiency can be associated only with the public's satisfaction with the good name of the police in society. Both residents' satisfaction with the work of the police and their sense of security are associated with the population's subjective (internal) assessment. Therefore, the effects the police is leaving to the public can only be studied by sociological research - population surveys. Sociological surveys allow you to clarify with a high degree of confidence at least the following essential aspects:

1. each respondent's assessment of the police work (e.g., positive, neutral or negative evaluation);
2. the real crime rate in the country and, in conjunction with the recorded number of crimes – proportion of latent crimes;
3. the trust of citizens in the police (also in comparison with other state institutions);
4. the respondents' view on the public perception of the level of safety;
5. population motives in cases when they did not approach the police with a report on the planned or already committed crime;
6. how often the police itself violates the rights of citizens;
7. whether society is sufficiently aware of operations of the police and it results;
8. Residents' proposals to increase the efficiency of police operations.

Sociological survey allows stratifying the obtained results depending on the respondents' experience in co-operation with the police. Applying of the sociological survey eliminates the problem with regard to the division of efficiency of the police in preventing and fighting the violation of law, as this public assessment regards evaluation of the operations of the police in general. To increase the reliability of data, conduction of this research shall not be assigned neither to the police nor state institutions.

Conclusions

The dynamics of the number of crimes recorded in the state, number of crimes recorded by the police per 100,000 residents, as well as the clearance rate cannot be the criteria to determine the efficiency of the police operations. There is no linear dependence between these indicators and the operational efficiency of the police. Statistical analysis may be purely a secondary element to be used in determining secondary values – productivity of the police officers, decrease of the proportion of latent crime.

Taking into account the fact that the police efficiency assessment is related to subjective criteria (sense of public safety, public satisfaction with police work), it can only be determined by a wide range of criminological research - sociological surveys. Such surveys should be carried out by independent institutions.

In the situation when regulatory enactments of various countries do not state the same results to be achieved, the author proposes to establish satisfaction with the work of the police and the level of latent crime in the country as universal criteria for transnational comparison.

References

- 'Encyclopaedia Britannica', Police and the State, (Britannica article), February 12, 2015, Available on the Internet: <<http://www.britannica.com/EBchecked/topic/467289/police/260916/Police-and-the-state>>.
- DeAngelo G.J.; Vitaliano D.F.; Lang H. 2014, Crime Rates and Police Efficiency, *Eastern Economic Journal* 40(4): 535-559.
- Dimofte, G.; Dimofte G.; Bolea, I. 2012. 'Measurement and Evaluation of Efficiency. Criteria for Police Units', *Annals of the University Dunarea de Jos of Galati: Fascicle: I*, .18(2): 10-31.
- Dominguez, J.P.; Sanchez, I.M.G.; Dominguez L.R. 2013. Relationship between police efficiency and crime rate: a worldwide approach, *European Journal of Law and Economics* 39(1): 203-223.

- Drake, L.M.; Simper, R. 2001. An Economic evaluation of inputs and outputs in policing: problems in efficiency and measurement. Available on the Internet: <<https://dspace.lboro.ac.uk/dspace-jspui/bitstream/2134/422/3/01-06.pdf>>.
- Drake, L.M.; Simper, R. 2005. The Measurement of Police Force Efficiency: An Assessment of U.K. Home Office Policy, *Contemporary Economic Policy* 23(4): 465-482.
- End Violence Against Women International 2013. *Training Bulletin: Police Clearance Methods Problems with Unfounding*. Available on the Internet: <<http://www.evawintl.org/Library/DocumentLibraryHandler.ashx?id=57>>.
- European Social Survey 2010. *ESS Round 2010*. Available on the Internet: <<http://www.europeansocialsurvey.org>>.
- European Values Study 2008, *Survey 2008*. Available on the Internet: <http://www.europeanvaluesstudy.eu/fmShowpage?v_page_id=9002471901798834>.
- Farrell, M.J. 1957. The Measurement of Productive Efficiency, *Journal of the Royal Statistical Society. Series A (General)* 120(3): 253-290.
- Fondevila, G. 2008. Police Efficiency and Management: Citizen Confidence and Satisfaction, *Mexican Law Review* I(1): 109-118.
- Giriūnas, L.; Mackevičius, J. 2014. Evaluation of frauds in public sector, *Entrepreneurship and Sustainability Issues* 1(3): 143-150. DOI: [http://dx.doi.org/10.9770/jesi.2014.1.3\(3\)](http://dx.doi.org/10.9770/jesi.2014.1.3(3))
- Giriūnienė, G. 2013. Public sector's subsidies to business – suitability valuation of labor market support measures, *Entrepreneurship and Sustainability Issues* 1(1): 37-44 DOI: [http://dx.doi.org/10.9770/jesi.2013.1.1\(4\)](http://dx.doi.org/10.9770/jesi.2013.1.1(4))
- Greene, J. R. 2007. *The Encyclopedia of Police Science. Clearance Rate. Problems using Clearance Rates to Examine Performance*. Third edition. Volume 1, A-I index. 183.p.
- Greenwood, P.; Chaiken, J.; Petersilia, J. 1977 *The Criminal Investigation Process*. Lexington, Mass.: D. C. Heath and Company.
- Gregory, P. 2009. Police fudge figures to improve rates of solved crimes: report. Available on the Internet: <<http://www.smh.com.au/national/police-fudge-figures-to-improve-rates-of-solved-crimes-report-20090311-8uq8.html>>.
- HMIC 2012, *Increasing efficiency in the Police Service. The role of collaboration*. Available on the Internet: <<http://www.justiceinspectors.gov.uk/hmic/media/increasing-efficiency-in-the-police-service.pdf>>.
- Kirby, S. 2013, *Effective Policing?* Available on the Internet: <<http://www.palgraveconnect.com/pc/doi/10.1057/9781137026798>>.
- Lankauskienė, T.; Tvaronavičienė, M. 2012. Security and sustainable development approaches and dimensions in the globalization context, *Journal of Security and Sustainability Issues* 1(4): 287-297. DOI: [http://dx.doi.org/10.9770/jssi.2012.1.4\(5\)](http://dx.doi.org/10.9770/jssi.2012.1.4(5))
- Life in Transition Survey 2010, *Life in Transition Survey 2010, After the Crisis*. Available on the Internet: <<http://microdata.worldbank.org/index.php/catalog/1533>>.
- Mačiulis, A.; Tvaronavičienė, M. 2013. Secure and sustainable development: Lithuania's new role in taking the Presidency of the EU, *Journal of Security and Sustainability Issues* 3(2):5-13. DOI: [http://dx.doi.org/10.9770/jssi.2013.3.2\(1\)](http://dx.doi.org/10.9770/jssi.2013.3.2(1))
- Matyasik, M. 2014. Secure sustainable development: impact of social media on political and social crises, *Journal of Security and Sustainability Issues* 4(1): 5-16. DOI: [http://dx.doi.org/10.9770/jssi.2014.4.1\(1\)](http://dx.doi.org/10.9770/jssi.2014.4.1(1))
- New Zealand Police 2012. *Prevention First: National Operating Strategy 2011-2015*. Available on the Internet: <<http://www.police.govt.nz/about-us/publication/prevention-first-national-operating-strategy-2011-2015>>.
- 'Oxford Dictionaries', Effectiveness (Oxford Dictionaries article), Available on the Internet: <<http://www.oxforddictionaries.com/definition/english/effectiveness?q=Effectiveness>>.
- 'Oxford Dictionaries', Efficiency (Oxford Dictionaries article), Available on the Internet: <<http://www.oxforddictionaries.com/definition/english/efficiency?q=Efficiency>>.
- 'Oxford Dictionaries', Efficient (Oxford Dictionaries article), Available on the Internet: <<http://www.oxforddictionaries.com/definition/english/efficient>>.
- 'Oxford Dictionaries', Productivity (Oxford Dictionaries article), Available on the Internet: <<http://www.oxforddictionaries.com/definition/english/productivity>>.

Phillips, L.; Votey, H.L. 1984, 'The Economics of Crime Control', *The British Journal of Criminology*, Vol. 24, no. 4, pp. 418-420.

Račkauskas, M.; Liesionis, V. 2013. The relationship between government expenditure and public safety in Lithuania, *Journal of Security and Sustainability Issues* 3(2): 31–40. DOI: [http://dx.doi.org/10.9770/jssi.2013.3.2\(3\)](http://dx.doi.org/10.9770/jssi.2013.3.2(3))

Šileika, A.; Bekerytė, J. 2013. The theoretical issues of unemployment, poverty and crime coherence in the terms of sustainable development, *Journal of Security and Sustainability Issues* 2(3): 59–70. DOI: [http://dx.doi.org/10.9770/jssi.2013.2.3\(5\)](http://dx.doi.org/10.9770/jssi.2013.2.3(5))

Song, R.L. 2012. Police Efficiency and the Fourth Amendment, *Indiana Law Journal* 87(3): Article 6. Available on the Internet: <<http://www.repository.law.indiana.edu/ilj/vol87/iss3/6>>.

Stańczyk, J. 2011. European security and sustainability issues in the context of current international environment, *Journal of Security and Sustainability Issues* 1(2): 81–90. DOI: [http://dx.doi.org/10.9770/jssi.2011.1.2\(1\)](http://dx.doi.org/10.9770/jssi.2011.1.2(1))

Stelfox, P. 2009, *Criminal Investigation: An Introduction to Principles and Practice*. Willan Pub.

Tunčikienė, Ž.; Drejeris, R. 2015. Entrepreneurship ecosystem: methodological approaches to functions' review of public sector institutions, *Entrepreneurship and Sustainability Issues* 2(3):118–132. DOI: [http://dx.doi.org/10.9770/jesi.2014.2.3\(1\)](http://dx.doi.org/10.9770/jesi.2014.2.3(1))

Tvaronavičienė, M.; Grybaitė, V. 2012. Sustainable development and performance of institutions: approaches towards measurement, *Journal of Security and Sustainability Issues* 1(3): 167-175. DOI: [http://dx.doi.org/10.9770/jssi/2012.1.3\(2\)](http://dx.doi.org/10.9770/jssi/2012.1.3(2))

Vasiliūnaitė, R. 2014. Sustainable development: methodological approaches toward issues, *Journal of Security and Sustainability Issues* 3(3): 69–75. DOI: [http://dx.doi.org/10.9770/jssi.2014.3.3\(6\)](http://dx.doi.org/10.9770/jssi.2014.3.3(6))

WiseGEEK 2015, *What Is Clearance Rate?* Available on the Internet: <<http://www.wisegeek.com/what-is-clearance-rate.htm>>.

World Values Survey 2015, *Data & Documentation*. Available on the Internet: <<http://www.worldvaluessurvey.org/WVSCContents.jsp>>.

Zahars, V.; Stivrenieks, M. 2014. Security implementation facets: convicted women imprisonment sentence execution, *Journal of Security and Sustainability Issues* 3(3): 45–53. DOI:[http://dx.doi.org/10.9770/jssi.2014.3.3\(4\)](http://dx.doi.org/10.9770/jssi.2014.3.3(4))

Anatolijs KRIVIŅŠ. Dr. iur., Rīga Stradiņš University. Research interests: criminology, policing, corruption, criminal justice.