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Methodological principles of development of information and analytical support of law enforcement efficiency

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■ **Abstract.** The urgent problems related to the deepening socio-economic crisis, numerous challenges in the field of national security, hostilities and occupation of the territory of Ukraine threaten the security of citizens and demonstrate the necessity to revise the key principles of reforming the modern law enforcement system, in particular in the context of its information and analytical support. In this regard, the purpose of the research is to substantiate the system of relevant indicators, rules, techniques and methods that determine the level of a particular structure, unit or system in general, provided that their potential is effectively developed. The methodological tools are based on dialectical, structural and logical methods, a systematic approach, and a statistical method. It is recommended that, based on reliable information support, an analysis of the effectiveness of law enforcement activities should be conducted focusing on further development of proposals for appropriate preventive measures. To implement these approaches, the author highlights the principles of effective law enforcement and proposes to develop a comprehensive monitoring system for tracking and forecasting the dynamics of offences using modern policy instruments, monitoring, control and response. It is proved that the quality of the law enforcement system is conditioned upon the improvement of its efficiency, provided that high results are achieved at the lowest cost of living and embodied labour. The author defines the effect and efficiency of law enforcement activities and based on these indicators, proposes a methodology for factor analysis of the effect, efficiency, and intensity of law enforcement agencies. The practical value of the work lies in the fact that the conclusions presented in it, due to the prescriptive presentation, will allow developing of an optimal model for making managerial decisions on the implementation of specific tasks facing law enforcement agencies and will guarantee a creative approach to the development of algorithms and measures to improve the level of efficiency in this area

■ **Keywords:** integrated monitoring; management; performance; intensity of activity; factor analysis; forecasting

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■ Introduction

In the current challenging socio-economic situation, the impact of relevant factors necessitates particular attention to the organisation and quality of law enforcement agencies. The deep economic crisis, political instability and the growth of crime in Ukraine place increased demands on the efficiency of law enforcement management. In the context of increased competition and military operations, it is necessary to develop and implement measures to combat crime and reduce its adverse impact on society. It is important to ensure the proper level of organisation and quality of law enforcement agencies work, considering all the adverse effects of the external and internal environment.

Under these conditions, it is necessary to develop a system of effective management of law enforcement agencies that would consider the needs of society, features of socio-economic development, and the specifics of combating modern offences. It should be based on reliable and effective information and analytical support of law enforcement activities. The specific feature of such information and analytical support is that it is based on a digital format. It provides a quantitative description of offences, their trends and patterns. It is based on numbers that are organically linked to qualitative content; indicators that are subject to research and reflect their state (level) or intensity in specific conditions of place and time for a particular object of research.

These circumstances determine the relevance, essence, problems and the necessity of making appropriate management decisions on the prevention of offences and the effectiveness of law enforcement agencies. Information and analytical support combine the principles and methods of working with quantitative characteristics of offences, summarise their quantitative correlations and, based on this, characterise trends and patterns.

The practice has demonstrated the important role of statistical tools as a means of knowledge in the development and use of information and analytical support for assessing the effectiveness of law enforcement management (Varenko, 2014). In addition, this approach is based on the fact that statistics have complete (covering almost all types of human activity), reliable, objective, comparable, and timely information, which is directly proportional to its effectiveness, covers wide systemic time horizons, and is under strict state control, which is provided by the State Statistics Service of Ukraine (n.d.). In addition, it manages a systematic analysis toolkit that has been tested in many areas of activity, which is a “full analytical cycle” of techniques and methods ranging from observation and information collection to in-depth analysis and forecasting. This practice is available for mastering and using both scientists and

specialised professionals, and those who have not received special training, in particular mathematical training, but by the nature of their work have to solve problems related to making effective management decisions in the field of law enforcement.

This problem is in demand among modern researchers. In particular, scholars emphasise that police performance indicators have a direct impact on crime rates, trying to determine this interdependence (Dominguez *et al.*, 2015). M.S. Nebeska (2019) states the urgent need to reorganise and improve the management of police bodies and units by establishing an effective system for assessing the effectiveness of its activities and evaluating the professional performance of its leaders. V. Bohdanovych *et al.* (2020) argue for the need to introduce a system of monitoring information in the security environment, which is currently being implemented in the practical activities of the security and defence sector, capable of identifying both hazards, threats and some other destructive phenomena and factors, and providing algorithms for optimising work in this area.

Considering this issue in more detail (Dominguez *et al.*, 2015), foreign scholars substantiate the logical idea that the relationship between crime, police effectiveness and other variables is inversely related, except for the literacy variable. Therewith, the issues of combining economic analysis and police effectiveness, criminal justice and crime reduction are being considered (Manning *et al.*, 2016), and the possibility of including data on property and violent acts to assess the technical effectiveness of police work is being discussed (Nepomuceno *et al.*, 2022).

The purpose of this research was to develop a system of theoretical knowledge and practical skills for assessing violations to develop and support effective management decisions to ensure law and order and prevent crime.

The objective of the research - to explore the methods of developing an information base, processing, summarising and analysing it to prepare and support effective management decisions and develop preventive measures to prevent offences.

■ Literature Review

Considering the current dramatic changes in the socio-economic society, the war in Ukraine, the presence of economic crisis problems and, as a result, the growing number of offences, the stated issues are becoming increasingly in demand both by the scientific community and society in general. The problem of making effective management decisions on preventing and combating offences, which should be based on reliable and valid information and analytical support, based on a strong methodological framework, is becoming a priority. A diagnosis of

the latest available scientific research has identified several creative approaches to the development and implementation of information and analytical support for the effectiveness of law enforcement. They are of different types and usually depend on the field of activity, purpose and objectives of the research.

Thus, in the capitalist economies of the 21st century, the effectiveness of actions, organisations and national policies has become a guideline for their development, as evidenced by the empirical work of foreign researchers (Jany-Catric, 2016) in various fields of activity. In addition, national policy evaluation is gradually being organised as a set of mechanisms that are designed to evaluate public services. The emphasis is placed on designing and using progressive scientific tools for the development of the professional competence of police officers (Bondarenko *et al.*, 2022) and the implementation and introduction of simulation situational tasks intended to develop police officers' skills.

In addition, it is known that scientific and technological progress, which has spread and is developing in almost all countries of the world, is the driving force that guarantees a constant increase in efficiency in all areas of human activity. In this regard, using advanced technologies is an urgent need for policing in modern conditions. In particular, such technology as Sentry SIS, proposed by foreign scientists (Weir *et al.*, 2020), is an undeniable basis for improving police performance. In this context, there is a natural interest in the works (Kumar & Kumar, 2015) that discuss the issues of police modernisation and the impact of this process on the effectiveness of police activities. An analytical tool for measuring and evaluating efficiency gains is the statistical method of marginal analysis, which has been used to prove that police departments that are constantly modernised, have more modern communication equipment, and are constantly funded for police training, perform much better and with greater efficiency.

Interesting is the proposal of H. Rahimi *et al.* (2017) to apply a dynamic approach, considering epidemiological concepts and complex statistical models, which can significantly improve the effectiveness of law enforcement activities of the State Automobile Inspectorate under study. The author emphasises the need to consider the theory and specific aspects in this area.

The search for the main criteria that characterise the police evaluation system abroad (UK, Canada, Ireland, Poland, Czech Republic, etc.) demonstrates that they are: reduction of crime, protection of citizens' rights and interests by the police, achievement of strategic purposes by police units, economic efficiency, etc. (Serdyuk, 2015), which is a natural process of solving the issue. In continuation of this, using a practical example, Hong Kong scholars demonstrate how

to develop a policing policy with limited resources that allows for greater efficiency using the "unified boundary analysis method" (Wong & Manning, 2022).

In the current context, there is a growing opinion that in the process of studying the criteria for police effectiveness, it is advisable to consider, first of all, such an indicator as public opinion, which makes it advisable to involve the so-called public councils in the work of police agencies, which, among other things, will include representatives of NGOs (Lupalo, 2019), while raising the issue of the professionalism of law enforcement officers themselves, people's trust and cooperation, multidimensional assessment of their performance, and consideration of the final results of their work. Therewith, such an assessment should not underestimate using analytical methods and techniques, in particular those based on statistical methodology, which are often used in departmental assessments. It would be advisable to use them to assess the effectiveness of police work concerning public opinion.

The above analysis of the studies demonstrates the considerable attention and significant achievements of both domestic and foreign scholars and practitioners concerning this issue. Therewith, it seems that certain basic things, strategic approaches and specific mechanisms for its implementation are not yet clearly substantiated. It confirms the necessity and timeliness of this research.

■ Materials and Methods

The subject of information and analytical support is the characterisation of offences and measures as a foundation for developing proposals for combating crime and reducing their adverse and destructive effects. The key components of the methodological tools of the research are the dialectical method, which is used to highlight law enforcement activities from the standpoint of objective factors that characterise the system based on characteristic links and internal contradictions. In addition, using the systemic method allowed determining the place of the proposed issues in the law enforcement management system. The structural and logical method allowed disclosing the structural elements, principles and mechanisms of law enforcement.

These methods helped to determine the methodological foundations for developing information and analytical support for the effectiveness of law enforcement. The latter is based on the principles of applied statistics methodology as a set of principles of scientific research, and based on them, the rules, techniques and algorithms for exploring specific processes and phenomena inherent in the field of law enforcement - accumulation of information, its processing, quantitative analysis of indicators, etc.

The range of tasks that can be performed by methods in management activities is quite wide. It allows searching for the necessary information, analysing it according to specific criteria, and comparing certain data blocks and indicators, which, through practical analysis, will allow identifying the problems of the relevant area of activity and establishing priority areas and algorithms for solving them.

At the stage of making managerial decisions in law enforcement, the most effective is using factor analysis, which considers key indicators of individual management objects, such as volume, structure, dynamics and other performance parameters. The result of the research on the effectiveness of management decisions is presented graphically or in the form of a table, based on which a comparative analysis of the relevant aspects of service activities is performed and compared with potential opportunities.

In the event of uncertainty caused by ambiguity or instability of legislative provisions in the law enforcement sector, risk assessment methods are in demand to allow for an appropriate response to atypical situations and unforeseen circumstances.

Using the modelling method is important for the research since the widespread use of relevant models allows for a comprehensive improvement of the management system based on the principles of meth-

odological foundations for developing information and analytical support for the effectiveness of law enforcement activities. The following types of models are the most popular in practice: descriptive, predictive and normative.

■ Results

Improving the system of economic governance requires effective legal protection of the rights and interests of citizens, government and public organisations. The necessary tasks include recording and analysing violations of the law, assessing the effectiveness of law enforcement agencies and exploring the factors that influence offences. Making appropriate management decisions is important for the prevention of offences and increasing the effectiveness of law enforcement agencies. New requirements for law enforcement management will ensure effective governance and consider changes in socioeconomic development. Diagnostics of the management system become an important component to identify changes and problems that may affect the system (Zakhozhai, 2022).

Management in the fight against crime is a complex activity designed to achieve appropriate positive results through the efficient use of resources and the application of the principles, functions and methods of law enforcement (Fig. 1).

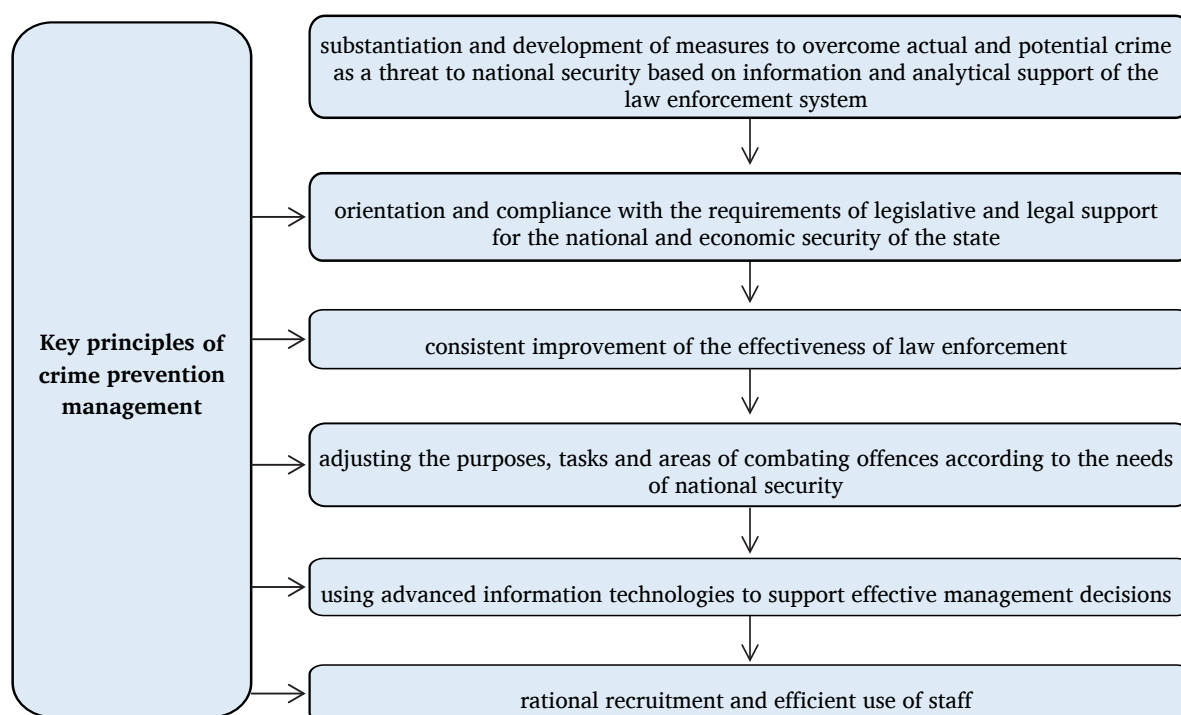


Figure. 1. Key principles of crime prevention management

Source: Provided by the authors

The conceptual development of an effective system for combating crime should be based on the development of comprehensive monitoring, i.e. a

multi-level system for tracking and forecasting the dynamics of crime using modern policy, monitoring, control and response tools.

The implementation of these tasks should be performed by a system of information and analytical support for the interrelationships between law enforcement and socio-economic activities.

The process of developing such a system includes the following components: defining the essence of the problem and tasks of further development; developing a system of analysis indicators; developing information support for analysis; designing methodological support for analysis of development efficiency; designing proposals for substantiating and supporting management decisions based on the results of analysis on the performance of legislative and law enforcement requirements for national and economic security; real-time assessment of the consequences of implementation of management decisions.

The effectiveness of law enforcement agencies depends significantly on the quality of implementation of measures to combat crime according to the legislative and law enforcement support of national security and its components: economic, financial, innovative, social, territorial and law enforcement security.

A scientifically based research should be based on the comprehensive use of analytical methods to identify the mechanism of occurrence and existence of particular offences. For the entire law enforcement system and its components, it is primarily research on the effectiveness of the police, prosecutors, courts and their structural units.

The key to this is to increase efficiency, i.e. to achieve the highest results with the lowest costs of living and embodied labour or to reduce total costs per unit of output. It, in turn, is a prerequisite for dynamic and balanced socio-economic development based on a close link between the level of economic development and the ability to address social needs. It is the reason for the organic link between the effectiveness of the country's socio-economic development and the efficiency of law enforcement agencies. A prerequisite for this is the provision of law enforcement measures.

Justification of managerial decisions to improve the efficiency of law enforcement agencies is based on a set of elements of information and analytical support, which allows defining a modern system of indicators, based on which to analyse the dynamics of development, interrelationships, the level of efficiency of domestic and foreign policy, etc.

An efficiency indicator is usually understood as the ratio of the result of an activity to the resources or costs of obtaining it, and an increase (decrease) in this ratio is considered as an increase (decrease) in the efficiency of the activity. Efficiency is the main characteristic of the functioning and development of the national system (law enforcement, economic, social, etc.) of Ukraine. A system of performance indicators is used to continuously compare costs with

performance. Efficiency should be improved at each stage of the reproduction process - in production, distribution, finance, circulation, consumption and law enforcement.

The development of society in general and its components is driven by two groups of factors: the attraction of additional resources (extensive path) and the increasingly rational use of resources due to technological progress, organisational, economic and other factors (intensive path). In the process of analysing the effectiveness of law enforcement activities, models are used to identify opportunities for relative reduction of certain offences. Notably, unlike in such areas as production, distribution, finance, circulation, etc., where the growth of the "efficiency" indicator is expressed as a positive number, in the research of the "crime" indicator, the growth of efficiency will be expressed as a decreasing number.

The term "effect" (Latin *effectus*) is interpreted as an action, a final result of an activity, a consequence. The effect indicator is determined according to the area of activity examined. When analysing offences, the increase in the effect is expressed as a decreasing number.

In the definition of the cost category, the concepts of "current costs" and "resources" are distinguished. The latter is obtained as a result of using resources. Resources are a generalised indicator of a person's targeted activity, which consists of a set of elements of the vital activity of certain systems that determine their functioning. They include material and technical, financial, labour (human), information and other components. Resources are advance costs, i.e. the amount of such costs advanced before the start of an activity.

The effect can be seen as the result of a feature (*R*), which is established in the interaction of a volumetric or quantitative feature (*Quant*) – resources, costs, etc. and a relative or qualitative feature (*Qual*) – efficiency and its varieties (offences and their types, etc.). In this case, the effectiveness (qualitative attribute) will be determined by the ratio of the effect (resultant attribute) to the volumetric (quantitative attribute).

Hence, the factor analysis of the dynamics of the effective attribute (effect) is performed using the following formulas:

$$\Delta R_{quant} = (Quant_1 - Quant_0) Qual_0, \quad (1)$$

$$\Delta R_{qual} = (Qual_1 - Qual_0) Quant_1, \quad (2)$$

$$\Delta R_{overall} = \Delta R_{quant.} + \Delta R_{qual.} = R_1 - P_0. \quad (3)$$

Factor analysis of the dynamics of the efficiency level is performed using the following formulas:

$$\Delta Qual_r = \frac{R_1 - R_0}{Quant_1}, \quad (4)$$

$$\Delta Qual_{quant} = \frac{R_0}{Quant_1} - \frac{R_0}{Quant_0}, \quad (5)$$

$$\Delta Qual_{overall} = Qual_1 - Qual_0 = \Delta Qual_r + \Delta Qual_{quant}. \quad (6)$$

The analysis uses intensive factors, driven by efficiency gains, and extensive factors, related to an increase in resources. The intensification of activities is assessed using the following formulas:

$$\frac{\Delta R_{qual}}{\Delta R} \cdot 100\% \quad (7)$$

$$\frac{\Delta R_{quant}}{\Delta R} \cdot 100\%. \quad (8)$$

Here, equation (7) is an indicator of intensification. It demonstrates the share of the effect increase due to intensive factors in the total effect increase.

Consider the above analytical dependence on the example of factor analysis of the dynamics of such a qualitative indicator (efficiency) as the level of detection of corruption offences (Dco), which is calculated by the ratio of the number of detected offences (Nco) to the total number of detected cases of corruption offences (Cco), i.e:

$$Dco = \frac{Nco}{Cco}. \quad (9)$$

Using this relationship, factor analysis is performed according to the following methodology:

- absolute change in detected offences (effect):

$$\Delta Nco = Nco_1 - Nco_0. \quad (10)$$

- due to the dynamics of the qualitative indicator – the level of detection of corruption offences:

$$\Delta Nqiq_{co} = (Dco_1 - Dco_0) Cco_1. \quad (11)$$

- due to the dynamics of the quantitative indicator – overall number of detected cases of corruption offences:

$$\Delta Nqid_{co} = (Cco_1 - Cco_0) Dco_0. \quad (12)$$

- the sum of changes in the factor indicators must satisfy the following equation:

$$\Delta Nqiq_{co} + \Delta Nqid_{co} = Nco_{overall} = Nco_1 - Nco_0. \quad (13)$$

To conduct a factor analysis of the intensity of corruption offences, it is advisable to use the following dependencies:

- the share of change in the number of detected corruption offences due to the dynamics of the qualitative indicator - the level of detection of corruption offences in the overall change in their growth:

$$\frac{\Delta Nqiq_{co}}{\Delta Nco_{overall}} \cdot 100\%. \quad (14)$$

- share of changes in the number of detected corruption offences due to the dynamics of the quantitative indicator – the number of detected offences in the overall change in their growth:

$$\frac{\Delta Nqid_{co}}{\Delta Nco_{overall}} \cdot 100\%. \quad (15)$$

If the calculation is made in percentage terms, the sum of these indicators is 100%, if in coefficients, it is 1.

The absolute change in the average level of disclosure of corruption offences in the reporting period compared to the baseline period, and the factors that develop it, can be determined using the following dependencies:

$$Cco_{overall} = Dco_1 - Dco_0. \quad (16)$$

In addition, it is due to the dynamics of the number of corruption offences detected:

$$\Delta Dco_{Nco} = \frac{Nco_1 - Nco_0}{Cco_1}. \quad (17)$$

Due to the dynamics of the total number of detected cases of corruption offences

$$\Delta Dco_{Cco} = \frac{Nco_0}{Cco_1} - \frac{Nco_0}{Cco_0}. \quad (18)$$

The correctness of the calculation is made using the equation:

$$\Delta Dco_{Nco} + \Delta Dco_{Cco} = \Delta Dco_{overall} = Dco_1 - Dco_0. \quad (19)$$

It is advisable to supplement and deepen such an analysis using the index method, which is based on generally accepted logic and methodology.

The foundation of this method is the concept of an index as a relative indicator that characterises the correlation in time (dynamic index) or in space (regional index) of law enforcement phenomena and processes, different types of criminal offences, etc. The specificity of this method is as follows: in the index, quantitatively incomparable values lead to some general unity, which makes their comparison comparable. Such unity can be, for example, a cost estimate of incomparable elements of a phenomenon, labour costs, etc. To this end, national systems of indicators and “law enforcement and economic barometers” are used at the national level; sectoral systems of indexes-indicators are used at the level of regions and types of activities; systems of indexes-indicators of companies and relevant structures are used at the micro level; the role of “quality indices” based on scoring and other “conditional” assessments is growing.

A particular place is occupied by the index method of analysis in the process of assessing the effectiveness of law enforcement structural policy and combating criminal offences.

An index is a relative indicator that characterises the correlation in time or space of specific offences, or the degree of deviation of an indicator from a certain standard or provision. The research method determines the function that the index performs in a particular analysis (Fig. 2) and the characteristics of comparisons. If the population considered consists

of several groups, it allows defining composite group indices (sub-indices) and a composite index for the population, i.e. a general index. The methodology for constructing indices, their classification and interpretation are described in detail in the literature. Thus, the index method determines the dynamics of average values in absolute terms and as a percentage.

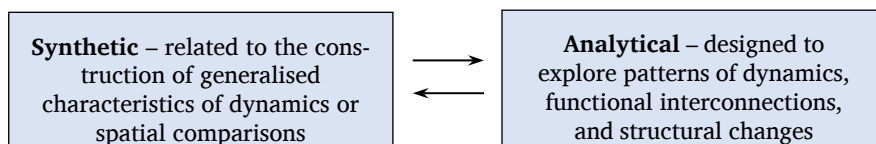


Figure. 2. Indexes functions

Source: proposed by the author based on previous research V.B. Zahozhai (2022)

The index of the average level of detection of corruption offences of variable composition is calculated by the formula:

$$I_d^{v.c.} = \frac{\sum D_{co1} d_1}{\sum D_{co0} d_0} = \frac{\bar{D}_{co}}{\bar{D}_{co0}}; \Delta_1 = \bar{D}_{co1} - \bar{D}_{co0}, \quad (20)$$

where, D_{co0} , D_{co1} – the level of disclosure of corruption offences by their individual types in the baseline and reporting periods; d_0 , d_1 – share of types of corruption offences in the total number of corruption offences in the baseline and reporting periods; $\sum D_{co0} d_0 = \bar{D}_{co0}$ – average level of detection of corruption offences in the baseline period; $\sum D_{co1} d_1 = \bar{D}_{co1}$ – average level of disclosure of corruption offences in the reporting period.

The result of the index calculation demonstrates how the average level of corruption offences detected in the reporting period has changed compared to the baseline.

The index of the average level of detection of corruption offences of fixed composition is determined by the formula:

$$I_{Dco}^{f.c.} = \frac{\sum D_{co1} d_1}{\sum D_{co0} d_1}; \Delta_2 = \sum D_{co1} d_1 - \sum D_{co0} d_1. \quad (21)$$

This index demonstrates how the average level of detection of corruption or corruption-related offences has changed due to the dynamics of this indicator by its individual types.

The index of the average level of detection of corruption offences of structural changes is calculated by the formula:

$$I_d^{s.ch.} = \frac{\sum D_{co0} d_1}{\sum D_{co0} d_0}; \Delta_3 = \sum D_{co0} d_1 - \sum D_{co0} d_0. \quad (22)$$

The index demonstrates how the average level of detection of corruption offences has changed due to changes in the structure of detected persons suspected of corruption.

The correlation between indexes:

$I_d^{v.c.} = I_{Dco}^{f.c.} \times I_d^{s.ch.}$ – index multiplicative model of the average level of detection of corruption offences.

The correlation between absolute values:

$\Delta^1 = \Delta^2 + \Delta^3$ – additive model of detecting corruption offences.

An essential condition for conducting such an analysis is the interpretation of the results obtained and the corresponding development of management decisions to prevent and counteract offences, including their disposal.

The methodological techniques, the methods of analysis, the construction of indicators used in different subsystems of information and analytical support are practically similar, which allows limiting the consideration of their application both to research a particular type of offence and at the territorial, regional and departmental levels. In the first case, this may be an analysis by the focus of offences, their types, severity categories, organisation, areas of human activity, forms and types of offences, motivation, socio-demographic characteristics of perpetrators, etc. In the second case, it is advisable to use this methodology at almost all levels of law enforcement management. Depending on the purpose and tasks, multifactorial index analysis of law enforcement phenomena and processes, using elements of decomposition analysis, etc are used.

■ Discussion

The approaches presented in the research should be used comprehensively depending on the tasks set. Ukrainian scientists have a similar methodological approach (Fomenko, 2021), who propose to calculate the effectiveness of law enforcement agencies using qualitative indicators, but it is doubtful that in the course of such a calculation it is necessary to distinguish them from statistics and quantitative indicators, since, firstly, statistics are based on and operates with values that in themselves reflect the

quantitative and qualitative characteristics of a particular phenomenon or process. Secondly, the indicator of “efficiency” itself is a relative, qualitative indicator, which is a criterion of performance.

Several scholars share the same approach, exploring in detail the essence of such categories as “criterion”, “parameter”, and “indicator” and correctly emphasising that these indicators should be based on strong regulatory and legal support (Kinzurska, 2019). Therewith, the author provides a reasonable expediency of improving the current legislation of Ukraine regarding the system of criteria and indicators for assessing the effectiveness of interaction between civil society institutions and state authorities. Based on the experience of Western European countries and Ukraine and the analysis of public trust in police activities, the author examines the factors that reduce the level of trust in the police and social monitoring as the main form of public control over police activities and suggests appropriate ways to intensify interaction between the police and the public as a form of public control over the activities serving it (Myronyuk & Myronyuk, 2020).

As of 2023, an important problem for both Ukraine and several foreign countries is the fight against corruption in all its manifestations and various fields of activity, especially among professionals who are directly involved in eradicating such acts. And the priority task of solving them is to assess the risks of effective work of the authorised units for the prevention and detection of corruption in the National Police (Han, 2019). It refers to measures designed to establish guarantees of impartial and objective appointment and unlawful dismissal of anti-corruption commissioners “at will” (pressure, unjustified reprimands, etc.). To avoid such adverse cases, several effective measures are proposed for close cooperation with the National Anti-Corruption Bureau.

Security problems are becoming more acute, which directly affect the effectiveness of police work (Milic *et al.*, 2017). For example, the Ministry of Internal Affairs of Serbia is working to identify hotspots of crime on the ground using information from patrol police, analytical approaches and relevant calculations. As a result, constructive proposals are being made to decentralise the analytical department, etc.

In addition, police management scholars (Mrgan *et al.*, 2018) advocate an integrated approach, suggesting a combination of preliminary statistical and strategic SWOT analysis, which results in the recommendation of reasonable constructive proposals for improving performance (professional criterion) and rationality (economic criterion).

In the context of the research, the conclusions of Ukrainian scholars who propose to develop a single standard for assessing the effectiveness of law enforcement agencies, their interaction with communities

and the level of trust in them based on a perfect reporting and control system are valuable (Kubayenko, 2023). Therewith, conceptual approaches to the development of a system of performance evaluation criteria should combine quantitative and qualitative characteristics of indicators that should determine the content of individual priorities for a certain period (Stryzhak, 2021).

The Oxford Police’s proposal to use a comprehensive approach that would cover a multidimensional role in society by using a harm index as a basis for sentencing guidelines is important. This position is justified by the fact that this indicator has significant advantages over other indicators, such as the cost of crime. Testing this approach in such US cities as Philadelphia and Transylvania confirms the feasibility of this proposal (Ratcliffe, 2015).

The works of scientists devoted to the information and time support of global, local and other processes in the security environment are appropriate (Bohdanovych *et al.*, 2020). The proposed methodology must be based on several analytical, logical and other procedures, with the information obtained during the assessment of threats, events, etc. and the conditions under which national interests are implemented over time. Facts and events are compared, considering global and local processes, which improves the quality of information and analytical support of the national security system.

Therewith, the scientific approach to improving the methodology of information and analytical support for law enforcement efficiency necessitates its logical structuring, which is being worked on by both domestic and foreign scholars (Asif *et al.*, 2018). First of all, this means establishing a structured foundation for a system of indicators to assess various aspects of police performance both from a technical standpoint and to make appropriate creative management decisions.

In the current context of police work, one of the main factors affecting the level of efficiency is the consideration of the vulnerability and riskiness of the work of officers (Soltes *et al.*, 2021). To explore this important issue, scientists are conducting quite in-depth research using cluster analysis and subsequent confirmation of the results by linear and logical analysis, which leads to reasonable proposals to reduce the impact of these factors on the overall effectiveness of police work.

Having analysed various studies, it can be concluded that a comprehensive approach to solving the problems of law enforcement effectiveness is appropriate. Scholars suggest paying attention to qualitative indicators, using regulatory and legal support and improving legislation. The analysis of public trust in the police and the fight against corruption are identified as priority tasks. In addition, it is important to develop a unified standard for assessing

the effectiveness of law enforcement agencies. Using harm indexes and analytical approaches is noted as a viable means of influencing police effectiveness. To summarise, a combination of quantitative and qualitative approaches with strong analytics and reporting is key to achieving successful and effective law enforcement.

■ Conclusions

In modern socio-economic society, marked by economic and political instability, and numerous crisis phenomena, there are fundamentally new requirements for the work of law enforcement agencies, which necessitates the search for an optimal model of management designed to ensure high performance. For appropriate managerial decisions to be made to implement these tasks, it is necessary to develop a system of law enforcement management that would be consistent with the intensive type of activity and would facilitate a qualitative update of methods, and scientific and practical approaches to management.

It is determined that under these conditions, the most reliable is the information and analytical support of law enforcement activities based on an integrated approach, based on systematic monitoring of the current situation, proper planning, control of management decisions, consideration of changes in structural transformation and implementation of preventive forecasting to prevent crime. In this regard, it is advisable to use information and analytical management methods that should meet the needs of a socially and law-oriented market economy. It is an objective necessity to consider the trends in informatisation, i.e. the development of appropriate software products and using IT technologies in this area. The research has established that the conceptual development of an effective system for overcoming offences enables comprehensive monitoring.

The essence of information support for police activity is to present it in a digital format, which involves quantitative characterisation of offences, considering their trends and patterns. These are quantitative indicators that are organically linked to the qualitative

content examined and reflect their state (level) or intensity in specific conditions of place and time for a particular object of research. It allows for a proper analysis of the effectiveness of law enforcement activities, and thus, for police officers to acquire the skills of analysts, experts, advisers and consultants of the highest qualification, who can effectively collect, accumulate and analyse information about relevant offences. It ensures that law enforcement agencies perform extraordinary tasks in the functions of their activities. To objectively reflect the multifaceted nature of offences, disclose their inherent characteristics, trends and patterns, information and analytical support widely uses specific techniques and methods and exposes the research logic, calculation methods and relevant analytical capabilities.

The methodology and techniques of information and analytical support for efficiency analysis are reflected in specific procedures for transforming information in the process of substantiating and making managerial decisions on crime suppression. In this sense, the information and analytical support of law enforcement efficiency analysis characterises the technology of substantiating management decisions by appropriate methods. It can be defined as a unity of methodological, organisational and informational aspects, covering the set and classification of tasks examined, the sequence of their solution and methods of substantiation.

The results of this research provide promising ways to explore other aspects of the subject to improve the effectiveness of the policy on the lawful use of resources at the disposal of law enforcement agencies; to increase the productivity of law enforcement agencies in various types of their activities through the analysis and regulation of crises, and to ensure compliance with the standards of their implementation.

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■ Conflict of Interest

None.

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Методологічні засади побудови інформаційно-аналітичного забезпечення ефективності правоохоронної діяльності

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■ **Анотація.** Нагальні проблеми, пов'язані з поглибленням соціально-економічної кризи, численними викликами у сфері національної безпеки, веденням бойових дій та окупацією території України, загрожують безпеці громадян і засвідчують потребу в перегляді ключових засад реформування сучасної правоохоронної системи, зокрема в контексті її інформаційно-аналітичного забезпечення. У зв'язку з цим метою дослідження є обґрунтування системи відповідних показників, правил, прийомів і методів, за допомогою яких визначають рівень певної структури, підрозділу або системи загалом за умови ефективного розвитку їх потенціалу. Основу методологічного інструментарію становлять діалектичний, структурно-логічний методи, системний підхід, а також статистичний метод. Рекомендовано на основі достовірного інформаційного забезпечення проводити аналіз ефективності правоохоронної діяльності, орієнтуючись на подальше розроблення пропозицій щодо проведення відповідних профілактичних заходів. З метою реалізації цих підходів висвітлено принципи ефективної правоохоронної діяльності, запропоновано формування комплексного моніторингу з відслідковування та прогнозування динаміки правопорушень з використанням сучасних інструментів політики, спостереження, контролю та реагування. Доведено, що якість роботи правоохоронної системи зумовлена підвищенням її ефективності за умови досягнення високих результатів за найменших витрат живої та уречевленої праці. Сформульовано визначення ефекту й ефективності правоохоронної діяльності, а також на підставі цих показників запропоновано методику факторного аналізу ефекту, ефективності, інтенсивності роботи правоохоронних органів. Практична цінність роботи полягає в тому, що сформульовані в ній висновки завдяки рецептурному викладу уможливають формування оптимальної моделі прийняття управлінських рішень щодо виконання конкретних завдань, які стоять перед правоохоронними органами, а також гарантуватимуть творчий підхід у розробленні алгоритмів і заходів щодо підвищення рівня ефективності діяльності в цій сфері

■ **Ключові слова:** комплексний моніторинг; управління; ефективність роботи; інтенсивність діяльності; факторний аналіз; прогнозування