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METHODOLOGY FOR THE FORMATION OF INFORMATION AND ANALYTICAL SUPPORT FOR DECISION-MAKING IN CRIMINAL JURISDICTION

The article reveals the main methodological aspects of forming high-quality information and analytical support for decision-making in criminal justice. Making optimal management decisions in the field of criminal justice is an important component of a state's internal security. This is a complex problem that requires integrated solutions. Reforming the criminal justice system requires new models that would provide prompt information to support effective decision-making. Decision-making in criminal justice is a data-driven process. Quality data is the basis of this process. New information needs often arise when making effective decisions in criminal proceedings, requiring the use of new information technologies and data processing tools. Legislative bodies seek to improve pre-trial practices, improve sentencing laws, and align the practices of correctional institutions and supervision with evidence-based principles.

The paper examines the main problems and obstacles to accessing and using data in criminal justice. The criminal justice system is considered as a vertical hierarchical structure of decision-making. It is noted that only a stable and universally accepted system of rules, norms and laws can guarantee the security of citizens and the rights of suspects. It will also enable security professionals and politicians to obtain reliable assessments of proposed strategies in criminal justice. Such assessments will provide reliable information for reallocating resources of the criminal justice system and achieving public benefits.

Keywords: criminal justice, decision-making, information and analytical support, effective strategies, sentencing criminology

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Методологія формування інформаційно-аналітичного забезпечення прийняття рішень у кримінальному судочинстві

У статті розкрито основні методологічні аспекти формування якісного інформаційно-аналітичного забезпечення прийняття рішень у кримінальній юстиції. Ухвалення оптимальних управлінських рішень у сфері кримінального судочинства є важливою складовою внутрішньої безпеки держави. Це комплексна проблема, яка потребує комплексних рішень. Реформування кримінальної юстиції потребує нових моделей, які б надавали оперативну інформацію для підтримки прийняття дієвих рішень. Прийняття рішень у кримінальній юстиції – це процес, керований даними. Якісні дані є основою цього процесу. При прийнятті ефективних рішень у кримінальному судочинстві часто виникають нові інформаційні потреби, які вимагають використання нових інформаційних технологій та інструментів опрацювання даних. Законодавчі органи прагнуть покращити досудову практику, удосконалити закони про винесення покарання та узгодити практику виправних установ і нагляду з принципами, що ґрунтуються на доказах.

У роботі досліджено основні проблеми та перешкоди для доступу та використання даних у кримінальному правосудді. Розглянуто систему кримінального правосуддя як вертикальну ієрархічну структуру прийняття рішень. Зауважено, що лише стабільна та загальноприйнята система правил, норм і законів може гарантувати безпеку громадян та права підозрюваних. Це також дасть можливість фахівцям з питань безпеки та політикам отримати надійні оцінки запропонованих стратегій у сфері кримінального правосуддя. Такі оцінки забезпечать надійну інформацію для перерозподілу ресурсів системи кримінального правосуддя та досягнення

суспільних благ.

Ключові слова: кримінальне судочинство, прийняття рішень, інформаційно-аналітичне забезпечення, ефективні стратегії, кримінологія засудження.

Statement of the problem. Since the beginning of modern civilization, there has been concern regarding the identification and control of individuals whose behavior deviates from the traditional norms of society. Throughout history, various strategies of social control over those deemed as deviants (individuals whose behavior does not conform to the general standard) have included exile, slavery, transportation, corporal punishment, imprisonment, and death. Most punishments were severe and aimed to separate those convicted of numerous offenses from the rest of society. In many respects, scientific research on criminality and corrective institutions has not progressed far, seemingly remaining at the level of achievements from the 19th century. Despite numerous efforts aimed at ensuring the protection of the accused and understanding the effectiveness of preventive measures as opposed to punitive sanctions, modern industrialized society, in most cases, decides to apply imprisonment to individuals convicted of crimes. According to the annual report “Global Prison Trends 2023”, nearly 11.5 million people were behind bars in 120 countries worldwide at the beginning of 2023 [1]. Convicted individuals increasingly face legal and social prejudices, alienation, and marginalization, including the loss of voting privileges [2]. Additionally, the incarceration of a significant number of individuals in penitentiary institutions imposes additional substantial burdens on the economies of countries worldwide. Effective solutions are needed in the criminal justice system today that are not excessive concerning the convicted and are adequate to ensure societal order.

Relatively new and controversial within the practical field of correctional services and the academic field of criminology is the concept of Convict Criminology (CC) [3]. It approaches issues of criminality and correctional institutions differently than how researchers, authorities, and policymakers traditionally perceive and discuss them. Convict Criminology emerged partially from scholars’ concerns regarding the existing understanding of criminality and its control. It tackles various aspects: defining the issue of criminality; proposed solutions; the destructive consequences of these solutions for individuals ‘marked’ as criminals, confined in correctional facilities, separated from their loved ones, and deprived of full reintegration into society; record-high incarceration rates, overcrowding in penitentiary institutions, and the lack of meaningful programs both within and outside prisons; as well as the structural impediments to successful reentry, leading to recidivism among the convicted.

The search for effective decision-making strategies becomes increasingly relevant, aiming to reduce the number of incarcerated individuals and the state’s expenditures on their incarceration while ensuring the personal safety of citizens and societal security. To achieve this, the development of reliable information-analytical support for decision-making in criminal justice is crucial.

The state of research of the problem. The issues arising in decision-making and managerial practices of law enforcement agencies, which may be considered inadequate for ensuring justice, are the subject of study for many researchers from different countries worldwide. In particular, the issue of developing effective information and analytical support for decision-making in criminal proceedings has been studied by R. Bedard, L. Prell, M. R. Gottfredson, Don M. Gottfredson, E. Greene, L. Ellis, J. S. Hollywood, Z. Winkelmann, M. Pournara [4–9]. However, this field is insufficiently studied and requires modern thorough research.

In Ukraine, applied research in the field of criminal justice, which would provide relevant and crucial information for decision-making in the field of internal security, is at an early stage of development [10, 11] and requires the establishment of a reliable theoretical basis, evaluated through strictly scientific methods.

Presentation of the main research material. Decision-making in criminal justice is a data-driven process. Its goal is to help governments analyze the factors behind trends and costs in criminal justice, develop and adopt policies aimed at eliminating these factors, and measure the impact of changes after decisions are made [12].

The main stages of decision-making in criminal justice are:

- identifying problems;
- analyzing problems;
- generating possible solutions;
- analyzing solutions;
- selecting optimal solutions;
- planning a strategy of actions;
- analyzing changes.

These decisions include victim reporting, arrest, pretrial release/detention, charging, sentencing, community and institutional corrections, and parole. The decisions in each of these cases differ in terms of goals and

objectives, available alternatives, decision criteria and/or consequences. Decision-making is strongly influenced by potentially conflicting goals of deterrence, rehabilitation, just deserts, and reintegration, as well as relevant scientific social research findings. Also important are the conditions for increasing the rationality of decision-making in criminal proceedings. Facts and the application of scientific methods to support decision-making offer the greatest prospect for improving the criminal justice system.

Decision-making in criminal justice can only be optimal if it is based on data, not emotions. Legislatures must use a broad array of data-driven strategies and tools, including implementing online information dashboards; tracking performance measures; collecting localized data; and partnering with academic researchers and other expert organizations to advance data-driven decisions.

Today there are a number of problems and obstacles to accessing and using data in criminal justice. Among them are the following [12]:

1. Lack of quality, comparable and relevant data. Legislators rely on access to reliable, transparent and comparable data on which to base funding and policy decisions. However, obtaining such data on the criminal justice system is a challenge, largely due to the fragmented nature of information and analytical support in different regions. Data quality issues also affect the ability of legislative or agency staff to produce accurate fiscal impact reports that can help inform reasoned decisions. This makes it difficult to forecast criminal justice and incarceration costs. States often lack uniform, comparable criminal justice data due to several factors, including differences in what information is collected by regional bodies, varying definitions of key terms, and technological barriers that hinder effective disclosure or sharing of data.

The main functions of the justice system – policing, criminal prosecution and incarceration – are typically funded and administered by municipal and regional governing bodies. Data collected by these local entities can be difficult to obtain, and data structures often vary significantly, making it challenging to compare one jurisdiction to another. Lack of access to reliable data hampers legislators' decision-making.

The availability of accessible and actionable data is also necessary. Clear communication of data by highlighting important information from large volumes of complex data is critical for legal decision-making. Data must be succinct, visual, understandable, and speak to core goals of ensuring legality and fairness of judicial decisions. Visualization greatly simplifies legislators' comprehension of information [13].

The most common types of queries to data warehouses in criminal justice decision-making include:

- Percentage of inmates charged with drug-related crimes;
- Number of people convicted for specific types of crimes, e.g. homicide;
- Crime statistics including number committed, average sentence length;
- Number incarcerated annually, amount spent on incarceration annually, recidivism rates and cost of repeat offending;
- Inmate demographics;
- Information on data sharing systems and privacy concerns;
- Correctional officer vacancy rates;
- Characteristics of repeat offending.

2. Lack of timely and actionable data when it is needed most. Quality, reliable information is critical for criminal justice decision-making, but timeliness is equally important. State agencies typically publish annual data, which may not align with relevant decision timeframes. Timely delivery is crucial for decision-making. Decision-makers rely on performance tracking and reporting over time to assess if desired outcomes are being achieved and identify areas for improvement. However, they do not always receive post-decision data or performance reports demonstrating the effectiveness of enacted policies. Proper data use and interpretation is also key.

3. The need for contextual and return on investment data to prioritize resource allocation decisions for the justice system. Today there is a need for analytical tools that can help understand the impact of policy actions and identify which investments or interventions are most likely to achieve specific policy goals. Legislators lack contextual data that could help decide how to rebalance public safety priorities. Beyond the fundamental need for data on numbers of arrests, incarcerations, or charges, policymakers require additional information and understanding of what the data means and how it relates to policy actions taken. Decision-makers can compare such data to prior periods or other jurisdictions, analyze trends, and determine causes behind shifts.

For example, information on the number of incarcerated individuals who have violated parole or probation terms is important. Data and resources are required that can provide reliable information support for decision-making that will maximize returns on public safety investments. Among the most impactful in this area are interactive diagnostic tools.

4. Lack of data and data sharing. Data silos where individual state or local agencies maintain their own data systems, and lack of integration, impede management decision-making and broad reforms. Lack of data sharing on parole, probation, dismissals etc. between the justice system and oversight bodies hampers effective criminal justice decision-making.

New information needs often arise when making decisions in criminal proceedings, requiring the use of new information technologies and data processing tools. The criminal justice system is organized as a vertical hierarchy of decision-making. This decision-making system inevitably involves lags and delays in policy implementation. Fig. 1 shows a scheme of the decision-making and feedback process in the criminal justice system [13].

The individual components of the hierarchy were created to support proportionality in punishment and address disparities, but this process has several impediments to making effective decisions to achieve the stated goal. At the base of the hierarchy is the general public, represented by voters. Voters participate in elections and elect officials who they believe best represent their political interests. The dotted line between voters and judges indicates some judges may be elected through independent voting or political appointment [13].

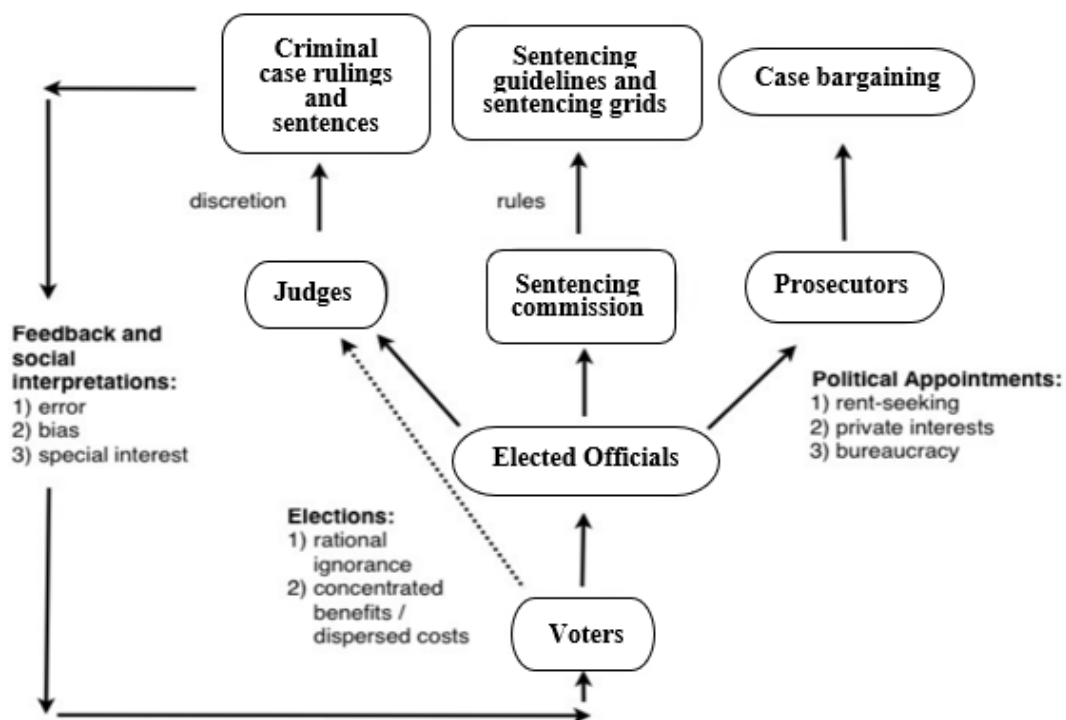


Figure 1. Criminal justice decision-making structure

Criminal punishment issues are often secondary political concerns after unemployment, economic welfare, healthcare, foreign policy etc. In addition, the electoral process suffers from rationally uninformed voters and political coalitions. Voters have little incentive to become informed about political issues as they bear direct costs substantially higher than their actual influence on the election outcome. Thus, the political process exhibits a bias toward the status quo, as the costs of implementing policy reforms impede social change, including in judicial proceedings.

At the next level of the decision-making hierarchy, elected officials appoint decision-makers across several distinct but interconnected areas of criminal justice. This is depicted in Fig. 1 by the three arrows leading from elected officials to judges, sentencing commissions, and prosecutors. In states without sentencing commissions, judges have wider discretion. The decision arrow from judges to case dispositions is labeled “discretion,” while the arrow from sentencing commissions to guidelines and tables is labeled “rules” in the diagram. Prosecutors are another key decision-making group regarding criminal sentencing. Through pre-trial and trial bargaining they influence actual sentencing outcomes. While prosecutors do not necessarily have a set level of discretionary authority (exercising government functions) *de jure*, they have considerable *de facto* power to influence sentencing judges or circumvent formal sentencing guidelines systems with mitigating evidence, increasing sentences.

The political appointment process introduces further time lags and systematic biases not conducive to efficient decision-making. If elected officials are overly concerned with re-election, they will cater to the median

voter and the issues of greatest constituent concern. Once in office, the official has the ability and incentives to maximize the budget of their bureaucratic agency. They are also inclined and able to appoint individuals to positions that serve private interests rather than public needs.

Available resources within criminal sentencing end up allocated in ways that do not reflect the true preferences and tastes of society for proportional punishment – some are expended as efforts toward political allegiance, others through bureaucratic inefficiency, and some as a result of private interests.

Actual decision-making takes time and introduces further systematic political biases against proportionality. Actual cases can take several years from initial criminal charges to trial, sentencing, appeal, and final disposition. Sentencing commissions require multiple years to formally establish, convene commissioner meetings, agree on a guidelines system, draft proposals, and finally implement stable policy. Such long lags contribute to increased sentencing. Prosecutors use bargaining to influence actual sentencing outcomes, usually resulting in guilty pleas.

The prolonged, unstable time lags in criminal justice decision-making related to sentencing policy lead to biases that such decisions will be either ineffective or unacceptable. Only stable and universally accepted rules, norms and laws can guarantee citizen security and the rights of the accused, enabling security professionals and politicians to obtain reliable assessments of developed strategies in criminal proceedings. Such assessments can provide information on reallocating criminal justice resources and ensuring public benefits.

Conclusions. Decision-making in criminal justice involves a complex process that encompasses various stages and considerations. It involves a series of choices made by law enforcement officers, prosecutors, judges, jurors, and other actors within the criminal justice system. Decision-making in the criminal justice system is guided by laws, statutes, and established procedures that provide a framework for handling cases. Developing high-quality information and analytical support to facilitate effective criminal justice decision-making strategies could help reduce incarceration and state spending on imprisonment, while still ensuring citizens' personal safety and overall public safety.

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