

THEORETICAL MODEL OF SECURITY ANALYTICS - SrbAn

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Abstract: *Security is a concept that has several theoretical definitions, depending on the field of application. Observed at the national level and in the relationship between states, security has recently expanded from only the military to the political, economic, social and environmental sectors. In accordance with the above, in many developed countries great importance is attached to security analytics, up to the level of development and application of national intelligence-analytical systems, such as NIM in Great Britain, ECIM in the European Union, or the model of the US Intelligence Community.*

This paper deals with security analytics in Serbia, for the basic reason that analytics is called security analytics by inertia, and in essence it is about intelligence (army), criminal (police) and other types of analytics. Therefore, the goal of this work is to offer a theoretical model of security analytics that would include all security sectors, analyst work procedures and standards that are applied on that occasion. The general conclusion of the paper could be formulated as follows: To improve the management of the national security system in Serbia, at the strategic level, it is necessary to develop and apply a theoretical model of security analytics.

Keywords: *Security, Security analytics, Theoretical model of security analytics.*

1. INTRODUCTION

The research problem is located on the security of the Republic of Serbia (hereinafter: Serbia). The essence of the problem is the way in which the strategic level of management of the national security system of Serbia understands the state of national security, for the sake of adequate response. Therefore, the essence of the research problem is security analytics at the strategic level.

Security analytics exists in us as a term used in theory and for teaching purposes. Various types of analytics function in practice, such as: intelligence (Army), criminal or criminal-intelligence (Police, security services), corporate - analytical (civilian sector) and others (Forca & Anocic, 2018).

In accordance with the above, a basic research question was posed: How can a theoretical model of security analytics be developed and applied in practice?

Theory and practice served us as starting experiences in answering the basic research question. Theory in the domain of the degree of development of security sciences, and practice in the sphere of the application of national intelligence models of some countries.

The theory of security sciences, in the middle of the second half of the last century, led to the expansion of the concept of security from the purely military to the political, economic, social and ecological sector (Buzan, et.all, 1998).

In the practice of individual countries or integration in this century, national intelligence models are applied that give a complete picture of the state of security. Such models are, for example: 1) NIM (National Intelligence Model) in Great Britain (Sebek, 2017); 2) ECIM (European Criminal Intelligence Model) in the European Union (Bradley, 2008) and 3) Intelligence Community Model in the USA (Carter & Phillips, 2015).

The analysis of the mentioned national models, in a general sense, led to the realization that the theoretical model of security analytics should consist of the necessary knowledge about: 1) the extended concept of security, 2) the work procedures of security analysts and 3) the standards used in the work.

The mentioned aspects of the theoretical model of security analytics are also the segments of the research subject of this work.

2. THEORETICAL MODEL SETTING

The essence of the theoretical model of security analytics is knowledge, which is necessary for the entire process, and which includes: 1) knowledge about security; 2) knowledge of analyst work procedures and 3) knowledge of standards used in that process (Figure 1).

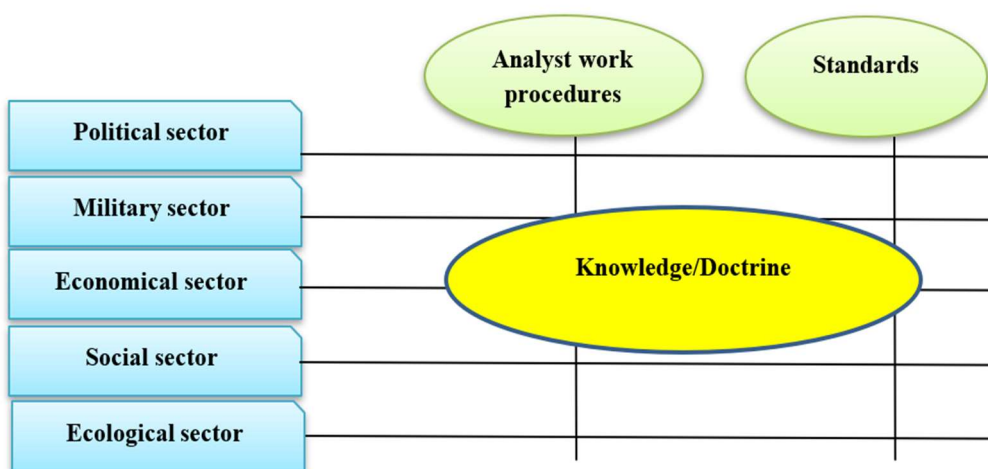


Figure 1. *Theoretical Model of Security Analytics*

Source: Andric Jasmina, Tisma Milos, 2022

3. KNOWLEDGE OF SECURITY

Security sciences (security studies) developed after the Second World War, through different research directions. In order to delimit the field of research, a number of analysts have identified the basic questions of security science. In our literature, the questions identified by Professor David Baldwin and Paul D. Williams are most often mentioned (Table 1).

Table 1. *Questions of Security Studies*

DAVID A. BALDWIN	PAUL D. WILLIAMS
Security for whom?	What is security?
Security - for which values?	Whose security?
How much security?	What can be understood as a security issue?
From what threats?	How is security achieved?
By what means?	
At what price?	
For what period of time?	

Source: Forca Bozidar, 2021

In accordance with the above, numerous research directions have been developed in theory (Table 2).

Table 2. *Research directions of security sciences (studies)*

AUTHOR	CLASSIFICATION OF RESEARCH DIRECTIONS
Paul D. Williams (2012)	(1) realism, (2) liberalism, (3) game theory, (4) constructivism, (5) peace studies, (6) critical theory, (7) feminist perspectives, and (8) international political sociology
Mijalkovic Sasa and Popovic Marija (2015)	(1) realism, (2) liberalism, (3) critical approaches and (4) other alternative approaches (social constructivism, feminist approaches and postmodern security thinking)
Ejdus Filip (2012) Bajagic Mladen (2012)	(1) Traditional (realism and liberalism) and (2) Alternative (social constructivism, critical theories, feminist approach and postmodernism)

Source: Author

In Serbia, all the mentioned research directions of security theory (studies) are studied, but priority is given to social constructivism, i.e. the theory developed by the *Copenhagen School of Security* from the *Peace Research Institute - COPRI* from Copenhagen (Denmark). One of the merits of the *Copenhagen School of Security* is the sectorial approach to security, which in theory is named as - the expansion of the concept of security. In addition to the military sector, Professor Buzan and his colleagues identified others, such as: political, economic, societal and ecological (Forca, 2023).

In 2019, Serbia adopted the second *National Security Strategy*. In that document, for the first time in our country, the term "national security" was defined as follows: "National security of the Republic of Serbia is the objective state of protection of national values and interests from all forms of threats, and the subjective sense of security of the citizens of the Republic of Serbia." (National Security Strategy, 2019).

Analyzing the aforementioned definition of national security, we observe that the national values and interests of Serbia, as well as citizens, can be threatened by various forms of threats. The fact is that the *National Security Strategy* document does not use the expression "forms of endangerment", which is from the domain of theory (Stajic, 2013), but the phrase "challenges, risks and threats". In this sense, following numerous security strategies of foreign countries, numerous challenges, risks and threats to security have been identified in the National Security Strategy: "Armed aggression against the RS; Separatist aspirations in the RS; Extremism; Organized crime; Problems of the RS's economic development; Incomplete delimitation of the RS SFRY; Natural disasters and technical-technological

accidents; Climate change; High-tech crime and threats to information and communication systems" (National Security Strategy, 2019).

In principle, by analyzing the challenges, risks and threats identified in the *National Security Strategy*, it can be concluded that they belong to military and non-military sectors, as identified by the *Copenhagen School of Security*.

Another approach to the necessary knowledge about security, created in the domestic theory, are the views on the components of security, as seen by Professor Ljubomir Stajic (Figure 2).

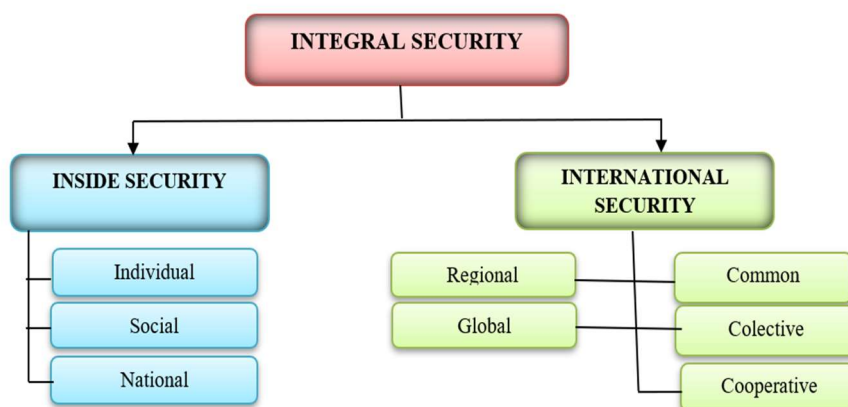


Figure 2. *Clasification – Components of Security*
Source: Stajic Ljubomir, 2021

Given that in order to understand the state of security and its threats in the second approach (integral security), the expansion of the concept of security must be taken into account, the first variant is proposed for the theoretical model of security analytics, i.e. the approach of the *Copenhagen School of Security*.

4. WORK PROCEDURES OF SECURITY ANALYSTS

Another aspect of the required knowledge for the theoretical model of security analytics is the work procedures of security analysts. This aspect includes: security analytics process; application of methods and techniques and characteristics of security analysts.

Even in the current practice, where certain types of security analytics (intelligence, criminal...) are functioning, it is a broader process that takes place within the so-called *intelligence cycle*. Analytics itself is, in fact, part of that process. Although there are different views on the structure of the *intelligence cycle* (See: Bajagic, 2012), its essence is shown in Figure 3.

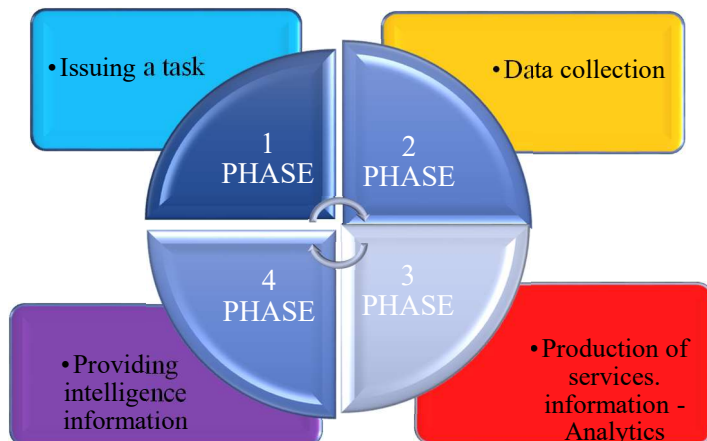


Figure 3. *Intelligence cyclez* (Source: Forca Bozidar, Anocic Branislav, 2018)

From the previous picture, we can see that analytics is one of the stages of the intelligence cycle. Its essence is to create intelligence from the collected and verified data and information, as a product that will be submitted to the competent levels in the national security system for decision. The analysis itself consists of several steps, which are named differently in different types of analysis. For example, a frequently applied analytics model - ANACAPA, is shown in Figure 4.

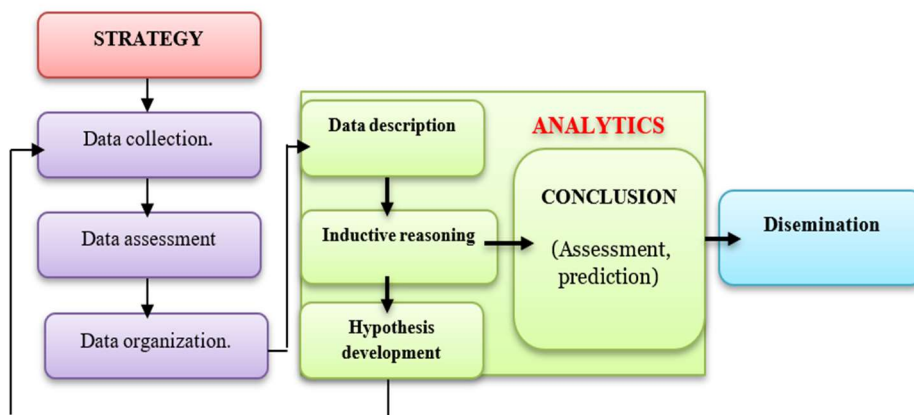


Figure 4. *ANACAPA analytics model*
Source: Forca Bozidar, Anocic Branislav, 2018

In accordance with what is shown in the previous picture, it can be seen that the analytical process is a constant review by the analyst of whether they can, based on the collected and processed data, develop hypotheses of the analytical process, from which they can extract intelligence information (process, prediction) of security events, which they will deliver to the competent levels of national security system management.

In the process of analysis, analysts use numerous scientific and so-called unscientific methods and techniques. Therefore, analytics is understood as a practical process that uses scientific methods. It is a very illustrative example of the analysis of security analytics in the USA after the terrorist attacks on New York and Washington, September 11, 2001. year. Namely, the question was asked - What was not enough in the work of CIA operative

analysts to prevent a terrorist act? In the search for an answer, the authorities concluded that operatives do not know and do not apply modern analytical methods and techniques. In this sense, higher education in the USA has been given the task of preparing and implementing an extensive training program for analysts, which will, first of all, include the mastery of modern methods and techniques of analytical work. (Collier, 2005). Collier himself writes about this:

"Analysts working to forecast short-term, unique events must first be experienced in applying the range of descriptive and explanatory analytical 'tools' discussed earlier. In most cases, the analyst must be able to explain past decisions or behavior before being able to predict the future. Academic contributions to "forecasting tools" include "Bayesian statistical analysis, simulation techniques, probability trees, and the analytic hierarchy process. The business community has also contributed to predictive analysis by developing a number of analytical procedures in the area of political and economic risk analysis, which future political and economic conditions in foreign countries are assessed for banks and companies considering foreign investment. OZ has also been one of the key players in the development of analytical "tools" for predicting short-term, unique events. These "tools" include the "Delphi Technique", alternative scenarios/futures and the "Lockwood Analytical Method for Prediction" (LAMP). LAMP is a powerful "tool" that uses a unique procedure of comparison of similar pairs to rank alternatives of future outcomes. Therefore, politico-military analysts tasked with descriptive, explanatory, and predictive studies must possess a vast "toolkit" to ensure the effectiveness of their intelligence products" (Collier, 2005:27).

A special question of security analytics that theorists and practitioners deal with is - what should a security analyst be? And in this domain we can find many approaches in the literature. The approach of a larger group of theoreticians, which we present in Table 3, is interesting for this paper.

Table 3. *Required qualities of an analyst*

AUTHOR	ABILITIES, SKILLS, ATTRIBUTES AND CHARACTERISTICS	ENVIRONMENT
(Clauser, 2008; Clauser & Weir, 1976)	Characteristics: Reasoning, accuracy, intellectual honesty, openness, skepticism, detachment, patience, diligence, perseverance, imagination	National Security
(Katter et al., 1979)	Characteristics: Understanding complex conceptual models, generating conceptual models, knowledge, memory, mental flexibility	Army
(Fischl & Gilbert, 1983)	Attributes: High-level reasoning, inductive reasoning, intellectual flexibility, writing skills, memory, intellectual curiosity, intentionality, interpersonal skills, achievement motivation, self-discipline, perseverance	Defense
(Schneider, 1995)	Attributes: intellectual curiosity, memory, quick assimilation of information, persistence, making judgments Characteristics: wide range of interests, developed research ability, experience, initiative self-management, disciplined, intellectual courage Skills: writing skills, oral communication skills	Law enforcement
(Wing, 2000)	Characteristics: knowledge, foresight, curiosity, innovation, determination, intuition, logic, imagination, inspiration	Army

AUTHOR	ABILITIES, SKILLS, ATTRIBUTES AND CHARACTERISTICS	ENVIRONMENT
(Wolfberg, 003)	Attributes: Innovation, Synthesis, Learning, Inquiry, Pattern Recognition, Uncertainty Adaptation, Visual Thinking, Experimentation, Metaphors, Non-Linear Systematic Thinking	National Security
(Moore, Krizan, & Moore, 2005)	Abilities: communication, cooperation, thinking Traits: insatiably curious, self-motivated, fascinated by puzzles, prone to aha thinking, avid observer, voracious reader, takes changing perspectives, makes creative connections, playful, sense of humor, sense of wonder, concentrates intensely, Knowledge: Purpose, Community, Policy, Customer, Resource Skills: Critical Reasoning, Literacy, Computer Literacy, Foreign Language, Research, Information Collection Manipulation, Project Management, Visualization	National Security
(Allen, D. M. 2008).	Attributes: Order of information, pattern recognition, reasoning Skills: Technical expertise, target knowledge, analytical techniques, search and organizational skills, ability to synthesize data, inductive reasoning, expression of ideas	Defense
(Quarmby & Young, 2010)	Attributes: Communication, cooperation, critical thinking, Skills: creativity, expertise, process expertise, disciplinary expertise, generic knowledge	Coordination and management
(Richards, 2010)	Skills: Critical thinking, creativity, reasoning, communication	National Security
(Evans & Kebbell, 2011)	Attributes; Thinking and communication	Law enforcement
Corkill, (UnPub)	Attributes: Ability to diagnose and contextualize problems, communication, self-awareness	Law enforcement

Source: J.D.Corkill, T.K. Cunow, E. Ashton, & A. East, 2015

5. STANDARDS AND STANDARDIZATION

In every human and social activity in modern conditions, for the sake of more efficient and effective work, standards are developed and applied. In general, in the documents of international organizations, *a standard* is defined as a document that establishes requirements, specifications, rules, guidelines or characteristics that should be consistently followed and fulfilled in order to ensure that material, products, processes, services can really serve their basic purpose. Standards should be based on proven results (Dragisic & Radojevic, 2014). *Standardization* is a framework of agreements that must be adhered to by all parties in the organization (company) in order to ensure that all processes related to creation (business, services, etc.) take place in accordance with the set guidelines (Ibidem).

The international standards (ISO) in the field of social security that have so far been adopted and adopted by national standardization bodies mainly cover the areas of management in emergency situations and business continuity, and recently the area of standardization extends to other issues of personal, property and business security: internal security from

various forms of terrorist and criminal threats, fraud prevention, private security. The most well-known ISO standards include:

- Quality: ISO 9001,
- Environmental protection: ISO 14001,
- Energy: ISO 50001,
- Safety and health at work: ISO 45001, SCC,
- Information security: ISO 27001,
- Management of crisis or emergency situations: ISO 22301,
- Risk management: ISO 31000 and many others (Forca & Zupac, 2024).

In accordance with the mentioned international standards, Serbian standards (SRPS) are adopted in Serbia for a specific area. For example, only for the standard in the field of information security - ISO 27001, 25 Serbian standards were adopted in Serbia.

In the world, numerous standards are applied in all the mentioned security sectors. Due to text volume limits, we will only list some of the standards (Table 4).

Table 4. *Standards of Security Sectors*

SECURITY SECTORS	STANDARDS
Political (general)	ISO TC 292
Economical	ISO 22301; ISO 22341; ISO 22313; ISO/TC 223018...
Military	NATO standards (STANAG) are most often used, within the framework of standardized operating procedures (SOP).
Societal	ISO 22341; ISO 27001...
Ecological	ISO 14000; ISO/TC207; ISO/TC 331; ISO/TC 147; ISO/TC 190; ISO/TC 276, ISO/TC 297...

Source: Author

6. ORGANIZATIONAL ASPECT OF SECURITY ANALYTICS

In order to unify the existing models (types) of analytics into one - security analytics, a key question arises - where and in what form should the organizational structure for analytics be formed? To answer the above question, it is necessary to carry out a short analysis of the management of the national security system at the strategic level.

The national security system is defined in the *National Security Strategy* as follows: "The national security system represents a normatively, structurally and functionally regulated entity whose activities ensure the protection and realization of the national interests of the Republic of Serbia" (National Security Strategy, 2019). In accordance with the above, the structure of the national security system consists of a management and an executive part. The governing part of the national security system consists of: the National Assembly, the President of the Republic, the Government and the National Security Council. The executive part of the national security system includes: Defense System, Internal Security System, Security-Intelligence System and Other Subjects Significant for National Security (Ibidem).

Therefore, at the strategic level of managing the national security system, the Council for National Security (Figure 4) is recognized, whose organization and tasks are listed below.

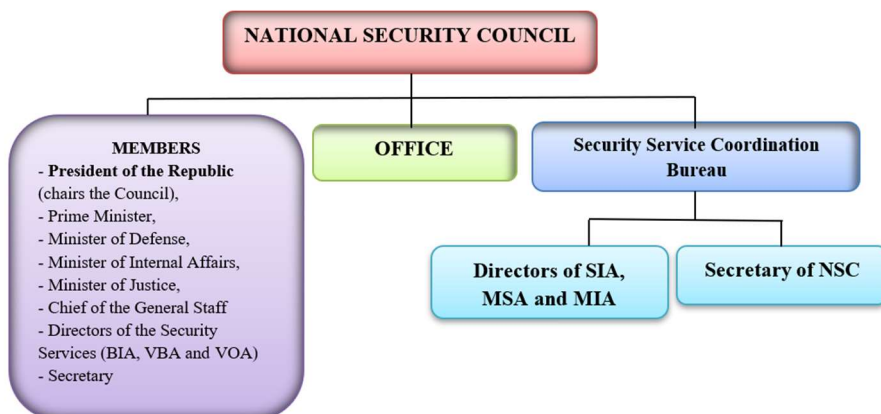


Figure 4. *National Security Council*

Source: Forca Bozidar, 2021:519

The National Security Council has the following responsibilities established by law: 1) Taking care of national security and 2) Coordinating the work of the security services (Table 5).

Table 5. *Jurisdictions of the National Security Council*

NATIONAL SECURITY CONSIDERATION	COORDINATION OF THE WORK OF SECURITY SERVICES
Considers issues in the field of defense, internal affairs and the work of security services; Considers mutual cooperation between the authorities responsible for defense, authorities responsible for internal affairs and security services and their cooperation with other competent state authorities, as well as cooperation with the authorities and security services of foreign states and international organizations; Proposes measures to the competent state authorities to improve national security; Considers proposals for improving national security submitted to it by the authorities responsible for defense, authorities responsible for internal affairs, security services and other competent state authorities; Considers issues within the scope of the state administration bodies, autonomous provinces, municipalities, cities and the City of Belgrade that are significant for national security; Considers other issues that are significant for national security.	• draws conclusions regarding the work of the security services and the Coordination Bureau; • draws conclusions that direct and coordinate the work of the security services; • draws conclusions that direct the cooperation of the security services with the security services of foreign states and international organizations; • draws conclusions that coordinate the activities of state bodies that are dedicated to international cooperation in the field of national security and defense; • monitors the implementation of the conclusions it has drawn; • provides opinions on proposals for annual and medium-term work plans for the security services; • provides opinions to the Government on budget proposals for the security services and monitors the implementation of approved budget funds; • gives an opinion to the Government on the proposal for the appointment and dismissal of the Director of the Security Service

Source: Zakon o osnovama uredjenja sluzbi bezbednosti Republike Srbije, 2012

In accordance with the presented competences of the National Security Council (Table 5), it would be logical for it to include an organizational unit for security analytics.

7. CONCLUSION

Security is a prerequisite for the survival and development of human communities and their environment. Although war (the military sphere) is the most severe form of security threat, threats also come from other sectors, such as: political, economic, social and environmental. The common denominator of these threats is that they rarely occur individually, and are most often complex.

Knowledge of security threats has led to the emergence of intelligence and other types of analytics, primarily in the army, police and security services. These analytics significantly contribute to the improvement of the activities in which they are implemented, so that national and international models are created.

Given that national security has two components - internal and external, which manifest as integral security, it seems reasonable to integrate individual intelligence models into a single national model of security analytics. That national model, named SrbAn, is based on knowledge: security knowledge (security sectors); knowledge of analyst work procedures and knowledge in developing and implementing standards.

The theoretical model of security analytics is presented in the work at the level of analysis of intelligence models in the army and police, with the basics of SrbAn, which needs both scientific and professional verification, for the eventual adoption of the idea, its development and introduction into practice.

REFERENCES

- Andric, J., Tisma, M., (2022), *New Models of Security Analytics*; International journal of economic and law, Volume 11 | No. 33 Bajagic, M., (2012), *Medjunarodna bezbednost*, Kriminalisticko-policijska akademija, Beograd.
- Andrtic, J., (2025), *Optimizacija bezbednosne analitike na strategijskom nivou u Republici Srbiji*, Izlaganje na medjunarodnom naucnom skupu "Evropa na raskrsnici – da rata ne bude", 9.maj 2005, Fakultet za poslovne studije i pravo, Beograd.
- Bradley, H., (2008). *Europol and the European Criminal Intelligence Model: A Non-state Response to Organized Crime*, Policing 2(1):107.
- Buzan, B., Wreaver, O., and De Wilde, J.,(1998), *Security: a New Framework for Analysis*. Boulder: Lynne Rienner.
- Carter J. G. & Phillips S. W. (2015) *Intelligence-led policing and forces of organisational change in the USA*, Policing and Society, 25:4, 333-357.
- Collier M., W., (2005), *A Pragmatic Approach to Developing Intelligence Analysts*, page 27, "Defence Intelligence Journal: 14-2", November.
- Corkill J.D., Cunow T.K., Ashton E., & East A., (2015) *Attributes of an analyst: What we can learn from the intelligence analysts job description*.DOI: <https://doi.org/10.4225/75/57a83ad2d2cf7>.
- Dragisic, Z., Radojevic, K. (2014). *Bezbednosni menadzment*. Beograd: "Sluzbeni glasnik".
- Ejdus, F., (2012), *Medjunarodna bezbednost, teorije, sektori i nivoi*, Sluzbeni glasnik, Beograd.

- Forca B., Anocic, B., (2018); *Bezbednosna analitika*, Fakultet za poslovne studije i pravo, Beograd.
- Forca, B., (2021), *Sistemi bezbednosti*, Fakultet za poslovne studije i pravo, Beograd.
- Forca, B., (2023), *Nacionalna bezbednost i odbrana*, Fakultet za poslovne studije i pravo, Beograd.
- Forca, B., Zupac, G., (2024), *Krizni menadzment u sistemu bezbednosti*, Fakultet za poslovne studije i pravo, Beograd.
- Mijalkovic, S., Popovic, M., (2015), *Uvod u studije bezbednosti*, Kriminalisticko-policijska akademija, Beograd.
- Sebek, V., (2017), *Dominantne karakteristike razvijenih kriminalisticko-obavestajnih modela i njihov uticaj na kriminalisticko-obavestajni model u Republici Srbiji*, *Bezbednost*, br. 1/2017, str. 16-35.
- Stajic, LJ., (2021), *Osnovi sistema bezbednosti*, Pravni fakultet, Novi Sad.
- Vilijams, D. P., (2012), *Uvod u studije bezbednosti*, Sluzbeni glasnik, Beograd.
- Zakon o osnovama uredjenja sluzbi bezbednosti Republike Srbije (2012), „Sluzbeni glasnik RS“, br. 72/2012.