



## MULTILEVEL ARCHITECTURE OF INFORMATION SYSTEMS FOR MONITORING RADICALIZATION TRENDS IN DIGITAL ENVIRONMENTS

*Associate Professor Florentina-Loredana DRAGOMIR, PhD*

*“Carol I” National Defence University, Bucharest*

DOI: 10.55535/RMT.2025.2.09

*The article proposes a comparative analysis of the ideological typologies of terrorist attacks carried out in the European Union in the period 2017-2022, in order to identify the tendencies of manifestation and chronological differentiation between the main forms of radicalism: jihadist, far-right, extreme-left and nationalist. The research aims to highlight structural transformations in the European terrorist landscape and to investigate the opposition or coexistence relations between these violent ideologies. From a methodological point of view, the study is based on a quantitative approach, supported by a simplified analytical information system, which organises and processes official data from Europol's TE-SAT annual reports. The analysis has been carried out in three consecutive stages: statistical exploration, the examination of relations between variables and the multivariate projection of ideologies. This integrated approach has allowed the delimitation of two distinct periods: 2017-2019, dominated by nationalist and anarchist terrorism, and 2020-2022, characterized by the rise of jihadist radicalism and right-wing extremism. The paper provides a frame of reference for the development of differentiated security strategies, adapted to the ideological specificity of each historical stage.*

*Keywords: ideological terrorism; political extremism; comparative analysis; PCA; European security;*

### INTRODUCTION

The ideological diversification of the terrorist phenomenon in Europe has become increasingly evident in recent years, against the backdrop of social polarization, geopolitical instability and the expansion of radicalization in online environments. Terrorist attacks can no longer be analysed exclusively through the lens of religious fundamentalism, but require a comparative approach that includes multiple ideological motivations: jihadist, far-right, far-left and nationalist. Europol's annual reports (2023) show significant dynamics in the distribution of these types of attacks, with significant variations from one year to the next.

Recent literature supports the need to build analysis models that allow a clear classification of these forms of terrorism, depending on frequency, ideology and social impact (Risius et al., 2023). Comparative studies conducted by Campedelli, Cruickshank and Carley (2020) highlight the potential of information systems in discovering latent ideological clusters in terrorist networks. At the same time, the UN Counter-Terrorism Centre draws attention to the growing threat from right-wing extremism, which is becoming increasingly organized and transnational (United Nations, 2021).

Security analyses conducted by Center for Strategic & International Studies/CSIS (2024) indicate that anti-government ideologies often combine with nationalist or conspiratorial accents, generating new hybrid forms of violence. Also, research recently published in Studies in Conflict & Terrorism emphasizes the role of social perceptions and collective fear in amplifying the impact of terrorist attacks, regardless of the ideological source (Taylor & Francis, 2024).

Against this background, the main objective of this research is to comparatively model the typologies of terrorist attacks according to ideological orientation, in the period 2017-2022. The aim is to identify the distribution and annual variations of jihadist, far-right, far-left, nationalist attacks, as well as those classified as “other types”

*Terrorist attacks can no longer be analysed exclusively through the lens of religious fundamentalism, but require a comparative approach that includes multiple ideological motivations: jihadist, far-right, far-left and nationalist. Europol's annual reports (2023) show significant dynamics in the distribution of these types of attacks, with significant variations from one year to the next.*



or “unspecified”. Through a descriptive analysis supported by a dedicated information system, this paper proposes an integrated perspective on how ideological threats evolve in the European space.

In addition, recent debates in the field of public policies argue that understanding the ideological structure of attacks is essential for the formulation of effective prevention strategies (Zhou, Kim, 2023; The Times, 2025). Thus, the research contributes to the substantiation of security measures adapted to contemporary realities, characterized by multiple, fragmented and dynamic threats.

### INFORMATION SYSTEMS APPROACHES IN COUNTERING TERRORISM

Combating terrorism in contemporary societies can no longer be conceived without the integration of high-performance information systems, capable of collecting, processing and analysing large volumes of data from multiple sources. In the context of diverse ideological threats, from jihadism and political extremism to nationalist terrorism and other hybrid forms, information systems become essential infrastructures for prevention, rapid intervention and data-based policy formulation.

#### The Role of Information Systems in Identifying Radicalization Patterns

One of the most important functions of information systems applied in the field of security is the early identification of radicalization patterns. By correlating historical data on attacks with socio-demographic, economic or cultural information, dynamic maps of terrorist risk can be created. These systems use specialized databases, integrated with monitoring and analysis platforms, to detect anomalies and weak signals of attack preparation. According to Campedelli et al. (2020), network analysis approaches implemented through information systems can identify latent connections between radical groups, highlighting the ideological evolution of non-state actors. Such approaches offer an overview of how extremist alliances are formed and consolidated, depending on ideological orientation and geopolitical context.

### Interoperability and Data Integration

Another fundamental element is the interoperability between the different entities that contribute to preventing and combating terrorism: police, intelligence agencies, counter-terrorism units, European bodies (e.g. Europol). Modern information systems facilitate the exchange of information in real time, ensuring coherence and consistency in risk assessment. Europol (2023) highlights that integrated platforms such as SIENA (Secure Information Exchange Network Application) have been essential in cross-border investigations. In addition, interoperability allows for the comparative analysis of attack typologies, an essential aspect of the present research. Data on jihadist, far-right, left-wing or nationalist attacks are collected and standardized in a unified manner, providing a common basis for analysis for EU Member States.

### Assisted Decision and Strategic Visualization

Information systems also contribute to supporting the decision-making process by developing visualization tools (dashboards, dynamic maps, risk scores) that synthesize the data collected in a form that is easy to interpret by decision-makers. Thus, authorities can allocate resources efficiently according to the dominant threat typology in a region or over a period of time. Risius et al. (2023) propose a matrix approach to extremism, in which ideological typologies are mapped according to intensity, degree of organization and probability of violent manifestation. This logic can be incorporated into information systems to prioritize interventions and anticipate vulnerable areas.

## RESEARCH METHODOLOGY

### Research Design

The present research adopts a quantitative descriptive and comparative design, with the aim of analysing the distribution and dynamics of terrorist attacks according to ideological orientation. The investigation focuses on the comparative modelling of the typologies of jihadist, far-right, far-left, nationalist, other and unspecified attacks using data collected annually during the period



ROMANIAN  
MILITARY  
THINKING

*Modern information systems facilitate the exchange of information in real time, ensuring coherence and consistency in risk assessment. Europol highlights that integrated platforms such as SIENA (Secure Information Exchange Network Application) have been essential in cross-border investigations. In addition, interoperability allows for the comparative analysis of attack typologies, an essential aspect of the present research.*



2017-2022. The methodological approach is supported by a simplified information system, which organizes and structures data extracted from official reports (such as TE-SAT – Europol), to allow for the analysis of medium-term evolution.

### Data Collection

The data used in this research come from secondary, official and validated sources, in particular from the annual EU Terrorism Situation and Trend Report (TE-SAT) published by Europol, which provides a comprehensive synthesis of terrorist activities carried out on the territory of the European Union. In order to ensure methodological relevance and coherence, data for the period 2017-2022 were selected, specifically targeting terrorist attacks classified by ideological motivation: jihadist, far-right, far-left, nationalist, as well as those falling into the categories of “other types” and “unspecified”. The collection process involved extracting the total number of attacks annually and distributing them according to the aforementioned classifications, in a standardized tabular format, adapted for comparative analysis. The selection of this time period was intended to cover relevant social and political contexts, including migration waves, internal security crises and the rise of extremist currents in the European space.

### Data Processing and Analysis

After structuring the dataset in a tabular format, an initial exploration stage of the distributions was carried out, using boxplots and graphical representations to observe the dominant intervals and the variation by year. Thus, through a temporal boxplot (figure 1), a significant concentration of values was highlighted around 2019, with a variation interval of  $\pm 1.7$  years, suggesting an aggregate average of terrorist manifestations in the period 2018-2021. Next, bivariate correlations were performed between the quantitative variables (number of attacks and ideological categories), in order to identify direct or indirect relationships between the typologies of attacks. These correlations were complemented by association analyses on value intervals, using mosaic plot diagrams (figures 2 and 3), to examine the relationships between far-right, far-left and jihadist attacks.

The chi-square ( $\chi^2$ ) statistical tests applied in this context indicated that there is no statistically significant association between the variables ( $p > 0.05$ ), but still allow for a coherent visual segmentation to identify frequent or absent combinations. Subsequently, a principal component factor analysis with radial visualization was applied (figure 4), in order to determine the semantic proximities between the ideological variables and the total number of attacks.

This approach allowed the identification of significant clusters: nationalist attacks and the total number of attacks were grouped in a common area, suggesting an association between volume and ideological specificity, while jihadist and far-right attacks occupied a distinct space, indicating a disjunct manifestation in terms of frequency and intensity.

### Methodological Limitations

The present research, although relevant in terms of objectives and well anchored in official data, is subject to methodological limitations that must be explicitly acknowledged. First, the lack of precise geographical details within the available data does not allow for a breakdown of the terrorist phenomenon at national or regional level, which limits the possibility of correlating ideological typologies with contextual variables specific to the member states of the European Union. Second, the classification of attacks in the categories of “other types” or “unspecified” indicates a degree of ambiguity in the reporting or interpretation of events, which partially affects the precision of the comparative analysis. Also, the research did not include complementary explanatory variables, such as socio-economic context, political polarization or the presence of online radicalization networks, which could have contributed to a deeper understanding of ideological motivations. Finally, the lack of methodological triangulation through which the quantitative analysis would have been supported by interviews, direct observations or content analysis determines an exploratory nature of the study, which can however be used as a basis for future research with a mixed or in-depth approach.



ROMANIAN  
MILITARY  
THINKING

*Nationalist attacks and the total number of attacks were grouped in a common area, suggesting an association between volume and ideological specificity, while jihadist and far-right attacks occupied a distinct space, indicating a disjunct manifestation in terms of frequency and intensity.*

*The data used in this research come from secondary, official and validated sources, in particular from the annual EU Terrorism Situation and Trend Report (TE-SAT) published by Europol, which provides a comprehensive synthesis of terrorist activities carried out on the territory of the European Union.*



## RESULTS AND DISCUSSION

In order to deeply understand the distribution, intensity and relationships between the different types of terrorist ideologies registered in Europe during the period 2017-2022, the analysis was structured in a logical sequence of complementary stages, each bringing a distinct perspective on the data. The interpretative process began with an exploratory examination of temporal distributions, continuing with the analysis of ideological relationships through correlations and associations, the projection of variables in a factor space and ending with the identification of ideological clusters through unsupervised learning methods. This methodological structuring allows not only a description of the terrorist phenomenon, but also the highlighting of ideological trends and ruptures relevant for the formulation of security policies adapted to the contemporary context.

The exploratory stage of the analysis involved a visual examination of the distribution of terrorist attacks reported annually, through a boxplot that highlights the central trends and dispersion of the data in the period 2017-2022. The graph reveals a weighted average of the values located around **2019.5**, accompanied by a standard deviation of approximately **±1.7 years**, which indicates a statistical concentration of the values in the period **2018-2021**. This temporal core coincides with a period of significant ideological transition in the European terrorist landscape, which justifies the deepening of the analysis based on the resulting temporal delimitations.

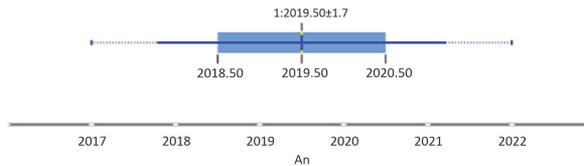


Figure 1: Exploratory stage (author's design)

The boxplot allows not only to identify the median year of high intensity, but also to delimit **structurally significant intervals**, providing an empirical basis for segmenting the analysis into two sub-periods: **the first, between 2017 and 2019**, characterized by the predominance

of attacks with nationalist or anarchist motivation; **the second, starting with 2020**, marked by a profound ideological reconfiguration, with the notable rise of jihadist attacks. This temporal delimitation is essential for validating the hypothesis that the dynamics of terrorism in Europe is not linear, but marked by **significant ideological discontinuities**, reflected both in the absolute frequency of attacks and in their motivational structure. The preliminary exploration through the boxplot thus provides a robust analytical framework that underpins the decision to apply subsequent methods such as bivariate analysis and factor analysis in relation to this **paradigm shift** observed in the vicinity of 2020.

To explore possible relationships between ideological typologies of terrorist attacks, mosaic plot diagrams were used, which provide a two-dimensional representation of associations between the frequencies of categorical variables. This method is suitable for small samples, such as the one analysed (N = 6 years), and allows for the rapid identification of disproportionate distributions within predefined intervals. The chi-square ( $\chi^2$ ) test was applied for each set of variables in order to determine the statistical significance of the association.

The graphic structure revealed by *figure 2* suggests an inverse relationship between the incidence of far-right and far-left attacks. Specifically, in years in which the number of far-right attacks exceeds the threshold of 39.5 values observed especially after 2020, the frequency of far-left attacks decreases significantly. Complementarily, in intervals with a low frequency of far-right attacks (below 20), far-left attacks are more widespread and show a constant presence in the data set.

This opposition indicates the existence of a possible ideological compensation, in which the manifestation of one type of radicalism seems to correlate negatively with the other, most likely in the context of social, political or cultural factors specific to each period. However, the chi-square test associated with this distribution does not confirm a statistically significant association ( $\chi^2 = 12.00$ ,  $p = 0.213$ ), which limits the generalizability of the conclusions. However, from an analytical perspective, this relationship provides valuable clues regarding alternative ideological manifestation behaviour, depending on the dynamics of the year and the prevailing socio-political climate.

*The dynamics of terrorism in Europe is not linear, but marked by significant ideological discontinuities, reflected both in the absolute frequency of attacks and in their motivational structure.*

*The exploratory stage of the analysis involved a visual examination of the distribution of terrorist attacks reported annually, through a boxplot that highlights the central trends and dispersion of the data in the period 2017-2022. The graph reveals a weighted average of the values located around 2019.5, accompanied by a standard deviation of approximately ±1.7 years, which indicates a statistical concentration of the values in the period 2018-2021.*



In years when jihadist attacks reach very high levels ( $\geq 257$ ), far-left attacks are noticeably reduced, being located in the lower frequency range ( $< 21.5$ ). In contrast, in intervals when jihadist attacks are moderate (between 22.5 and 143.5), far-left attacks show increased variability, being present in a wider frequency range.

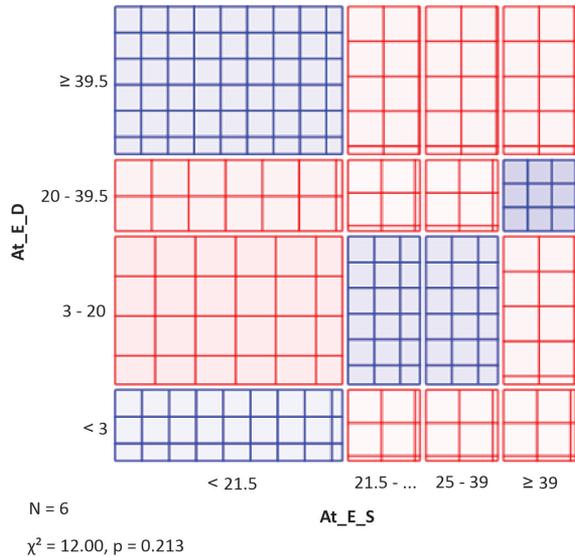


Figure 2: Association between extreme right-wing attacks (At\_E\_D) and extreme left-wing attacks (At\_E\_S) (author's design)

Figure 3 examines the relationship between jihadist and far-left attacks. The distribution highlights that in years when jihadist attacks reach very high levels ( $\geq 257$ ), far-left attacks are noticeably reduced, being located in the lower frequency range ( $< 21.5$ ). In contrast, in intervals when jihadist attacks are moderate (between 22.5 and 143.5), far-left attacks show increased variability, being present in a wider frequency range.

This observation supports the existence of a clear ideological segregation between radical Islamist and far-left manifestations. The two orientations do not seem to coexist, significantly, in the same period, but rather manifest themselves in distinct temporal contexts, possibly determined by geopolitical factors or media polarization. Even though the chi-square test does not indicate a statistically



In order to better understand the relationships between the ideological typologies of terrorist attacks and to identify possible latent groupings between the analysed variables, a factor analysis of the PCA (Principal Component Analysis) type was applied. This method reduces the dimensionality of the data and allows for the graphical representation of variables according to principal component 1 (PC1) and principal component 2 (PC2), capturing most of the total variation in an easy-to-interpret two-dimensional space.

significant association ( $\chi^2 = 14.00, p = 0.122$ ), the visual structure of the graph confirms an ideological and operational distance between these two typologies of radicalism.

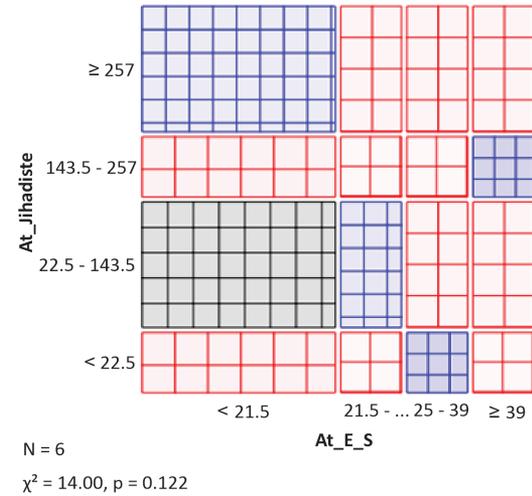


Figure 3: Association between jihadist and far-left attacks (author's design)

Overall, the mosaic analysis revealed that, although the relationships between the different types of extremism are not robust enough to be considered statistically significant within this limited sample, they reflect important qualitative trends, useful in formulating additional hypotheses or in guiding future research on the ideological correlations between terrorist typologies.

In order to better understand the relationships between the ideological typologies of terrorist attacks and to identify possible latent groupings between the analysed variables, a factor analysis of the PCA (Principal Component Analysis) type was applied. This method reduces the dimensionality of the data and allows for the graphical representation of variables according to principal component 1 (PC1) and principal component 2 (PC2), capturing most of the total variation in an easy-to-interpret two-dimensional space.



Jihadism and right-wing extremism constitute a new form of ideological polarization in the post-2019 space, without being directly influenced by the general dynamics of the attacks.

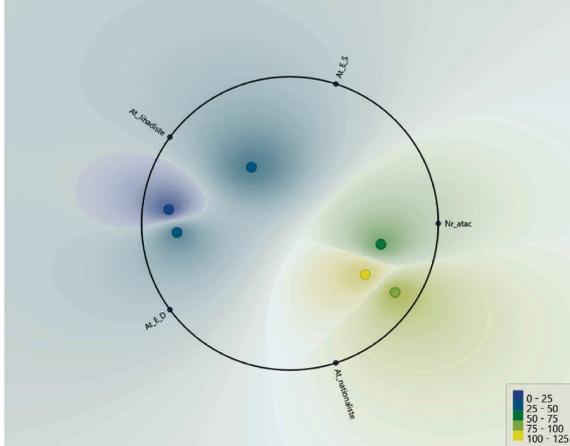


Figure 4: PCA (Principal Component Analysis) factor analysis (author's design)

The results of the spatial projection (figure 4) indicate a clearly differentiated distribution of the ideological categories of attacks. On the one hand, nationalist attacks and the total number of attacks are positioned in proximity, in the lower-right quadrant, suggesting a consistent association between the overall volume of incidents and the frequency of this type of ideology. This significant proximity signals the fact that, especially in the period 2017-2019, nationalist attacks represented a major structural component in the architecture of European terrorism, contributing substantially to the annual total of reported events.

On the other hand, jihadist and far-right attacks are projected in the opposite quadrant, in the upper-left area of the graph, relatively isolated from the other variables. This positioning indicates an ideological and operational distancing from the dominant structure of terrorism in the period before 2020. Moreover, the fact that these two typologies are close to each other, but distant from the centre of the data mass, suggests that jihadism and right-wing extremism constitute a new form of ideological polarization in the post-2019 space, without being directly influenced by the general dynamics of the attacks.



This clear separation between the two groups of variables (nationalist-total vs. jihadist-far right) reinforces the hypothesis of the existence of two distinct ideological blocs that dominate the European space in turn, depending on the geopolitical context and the social climate specific to each period. In addition, the far-left attacks are positioned in a transition zone, without significant proximity to other variables, which suggests a more fragmented and less predictable behaviour, with variations in frequency and intensity unevenly distributed over the analysed period.

In conclusion, the factor analysis provides a synthetic image of the proximity and differentiation relationships between the ideological orientations of terrorist attacks, supporting their classification into distinct groups and validating, from a statistical perspective, the transition from a nationalist dominance (pre-2020) to a new paradigm marked by radical Islamism and right-wing radicalism (post-2020).

The results obtained from the comparative analysis of the ideological typologies of terrorist attacks in the period 2017-2022 reveal a significant dynamic of violent manifestations in the European space, characterized by a clear transition from a phase dominated by nationalist and anarchist terrorism, to a recent period in which jihadist and far-right extremism are gaining an increasing share. This ideological mutation, validated by exploratory, correlational, factorial statistical methods, suggests that security strategies must be adapted not only according to the frequency of attacks, but also in relation to the **dynamic and cyclical nature of dominant ideologies**. One of the main challenges highlighted by the present analysis is the **increasing fragmentation of the terrorist ideological spectrum**, accompanied by the emergence of forms of extremism that can no longer be clearly classified into classic patterns (left/right/religious/nationalist). This complex evolution raises major problems of anticipation, classification and intervention, especially for national security systems that operate in rigid paradigms. In addition, the observed cycles (e.g. the decrease in left-wing terrorism along with the increase in jihadist terrorism) suggest the existence of **ideological compensations and mirror reactions**, which require continuous and real-time monitoring. From an institutional perspective, the data support the need to develop **dynamic and integrated information**

*The factor analysis provides a synthetic image of the proximity and differentiation relationships between the ideological orientations of terrorist attacks, supporting their classification into distinct groups and validating, from a statistical perspective, the transition from a nationalist dominance (pre-2020) to a new paradigm marked by radical Islamism and right-wing radicalism (post-2020).*



*In the context of a clear intensification of jihadist attacks after 2020, institutional efforts should focus on countering transnational networks, combating online radicalization and strengthening international cooperation.*

**systems**, capable of capturing, correlating and anticipating ideological patterns of radicalization. It is evident that traditional models of terrorist risk assessment, based exclusively on historical data or single indicators, no longer provide a true picture of reality. In this sense, a shift from reactive to **predictive analysis**, based on multidimensional data and machine learning algorithms, is required. Regarding security policies, the research results support the adoption of differentiated measures, aligned with the **dominant ideological profile in the short and medium term**. For example, in the context of a clear intensification of jihadist attacks after 2020, institutional efforts should focus on countering transnational networks, combating online radicalization and strengthening international cooperation. In parallel, the increase in far-right attacks requires investments in the surveillance of identity groups and in the development of counter-narratives that limit social polarization. Last but not least, the persistence of nationalist terrorism, even in moderate forms, suggests the need for increased attention to domestic political dynamics, including separatist or anti-state discourses. Critically, it should be noted that quantitative analysis, although rigorous, is dependent on the quality and granularity of the available data. The lack of contextual, geographical or behavioural details limits the depth of interpretations and may lead to relevant omissions in understanding the motivations and mechanisms of radicalisation. Also, validating the model over time and extending it to other geographical areas remain future research objectives, necessary for generalising the conclusions. Overall, the research demonstrates that the fight against terrorism requires a refined understanding of ideological evolution, integrated into an adaptable, scalable information architecture connected to the rapid changes in the European geopolitical and socio-cultural environment.

## CONCLUSIONS

The objective of this research was to comparatively model the ideological typologies of terrorist attacks carried out in the European Union during the period 2017-2022, with a focus on identifying their dynamics and distribution according to ideological orientation. The significant increase in jihadist attacks after 2020, in contrast to previous periods dominated by other ideologies, can be interpreted

as an alarm signal regarding the reactivation of some networks or the adaptation of propaganda and recruitment strategies. Such serial “*anomalies*” can precede cycles of intensifying violence. As observed in the mosaic analysis, when far-left attacks decrease, far-right or jihadist attacks increase. This ideological compensation relationship suggests that the diminution of one form of radicalism does not automatically imply a reduction in the overall risk, but a redistribution of motivations. Such behaviour must be monitored, as changes may announce the emergence of “*germs*” of latent ideological violence. If future analysis identifies a recent year that aligns with a previous risk cluster (e.g. 2020-2022), this may represent a dangerous continuity, indicating that the triggers of past attacks persist. Thus, typological alignment can be a predictive indicator. Far-right and jihadist attacks, although seemingly antagonistic, begin to emerge around the same time (after 2020). This ideological coexistence over time indicates a dual polarization and possibly even mutual radicalization. If this convergence deepens, it may herald hybrid forms of threat or a mirror spiral of violence.

The analysis, structured in successive stages – exploration, correlations, factor analysis, has highlighted a clear transition from a period dominated by nationalist and anarchist terrorism to a recent stage in which jihadism and right-wing extremism are becoming the dominant ideologies in the European terrorist landscape. By applying a quantitative methodology supported by an analytical information system, the research has highlighted that terrorist attacks do not evolve in a statistical vacuum, but in complex contexts, where the coexistence or exclusion of ideologies manifests itself according to historical, geopolitical and cultural factors.

This perspective has been made possible by the use of IT tools capable of supporting multivariate analysis and generating interpretable visualizations in real time. The importance of information systems in this research is manifested by their role as an essential analytical infrastructure for organizing, processing and interpreting complex volumes of data from official sources. More than a simple storage and processing platform, the information system functions as a strategic decision support, allowing the identification of hidden trends, ideological correlations and anomalies that are not visible



ROMANIAN  
MILITARY  
THINKING

*By applying a quantitative methodology supported by an analytical information system, the research has highlighted that terrorist attacks do not evolve in a statistical vacuum, but in complex contexts, where the coexistence or exclusion of ideologies manifests itself according to historical, geopolitical and cultural factors.*



to a linear or intuitive analysis. In this context, the integration of intelligent information systems, based on machine learning algorithms, predictive analysis and advanced data processing, becomes not just a methodological option, but an operational necessity. Such systems could directly support national and European authorities in anticipating threats, prioritizing resources and calibrating security policies according to the ideological specificity of the dominant risks. Through their ability to learn from historical data and generate real-time warnings, these systems can transform terrorism management from a reactive process into an anticipatory and strategic one.

In conclusion, the paper demonstrates that a rigorous understanding of the dynamics of ideological terrorism cannot be separated from the capacity of institutions to integrate advanced information technologies into analytical and decision-making activity. This synergy between scientific analysis and digital infrastructure represents an essential direction for strengthening European security in the face of multiple, fragmented and constantly changing threats.

#### BIBLIOGRAPHICAL REFERENCES:

1. Campedelli, G.M., Cruickshank, I., Carley, K M. (2020). *A complex networks approach to find latent clusters of terrorist groups*. arXiv, <https://arxiv.org/abs/2001.03367>, retrieved on 2 March 2025.
2. Center for Strategic&International Studies/CSIS. (2024). *The rising threat of anti-government domestic terrorism*, <https://www.csis.org/analysis/rising-threat-anti-government-domestic-terrorism-what-data-tells-us>, retrieved on 22 March 2025.
3. Dragomir, F.-L. (2017). *The modelling of decisional problems*. In *Bulletin of "Carol I" National Defence University*, 01, pp. 72-75, <https://www.cceol.com/search/article-detail?id=548376>, retrieved on 22 March 2025.
4. Dragomir, F.-L. (2025-a). *Algorithmic Transparency in Information Systems: A Legal Necessity for the Protection of Fundamental Rights*. *Acta Universitatis Danubius. Juridica*, 21(1), pp. 126-136, <https://dj.univ-danubius.ro/index.php/AUDJ/article/view/3298>, retrieved on 6 April 2025.
5. Dragomir, F.-L. (2025-b). *How information systems are reshaping national security strategies*. In *Romanian Military Thinking journal*, no. 1, pp. 202-213.
6. Dragomir, F.-L. (2025-c). *Integrating artificial intelligence into operational research – New horizons for national security*. In *Romanian Military Thinking journal*, no. 1, pp. 174-187.



7. Dragomir, F.-L. (2025-d). *Thinking Traps: How High-Performance Information Systems Correct Cognitive Biases in Decision-Making*. In *New Trends in Psychology*, 7(1), pp. 99-108, <https://dj.univ-danubius.ro/index.php/NTP/article/view/3257>, retrieved on 23 March 2025.
8. Dragomir, F.-L. (2025-e). *Thinking Patterns in Decision-Making in Information Systems*. In *New Trends in Psychology*, 7(1), pp. 89-98, <https://dj.univ-danubius.ro/index.php/NTP/article/view/3255>, retrieved on 17 May 2025.
9. Dragomir, F.-L. (2025-f). *The potential for intensifying Austria's opposition to Schengen enlargement*. In *European Journal of Accounting, Finance & Business*, 12(2), pp. 120-128.
10. Dragomir, F.-L., Alexandrescu, G. (2017-a). *Applications of artificial intelligence in decision-making process*. In *Buletinul Universității Naționale de Apărare "Carol I"*, 4(2), pp. 56-61, <https://www.cceol.com/search/article-detail?id=547684>, retrieved on 22 March 2025.
11. Dragomir, F.-L., Alexandrescu, G. (2017-b). *The axiomatic character of decision*. In *Buletinul Universității Naționale de Apărare "Carol I"*, 6(1), <https://www.cceol.com/search/article-detail?id=548274>, retrieved on 2 March 2025.
12. Dragomir, F.-L., Alexandrescu, G., Postolache, F. (2018). *Tools for Hierarchical Security Modeling*. In *The 14<sup>th</sup> International Scientific Conference "Strategies XXI"*, 4, pp. 34-38.
13. Europol (2023). *EU Terrorism Situation and Trend Report (TE-SAT)*, <https://www.europol.europa.eu/publications-events/main-reports/tesat-report>, retrieved on 22 March 2025.
14. Risius, M., Blasiak, K.M., Wibisono, S., Jabri-Markwell, R., Louis, W. (2023). *Dynamic matrix of extremisms and terrorism (DMET)*, arXiv, <https://arxiv.org/abs/2312.00337>, retrieved on 2 March 2025.
15. Taylor&Francis (2024). *Deconstructing fears of terrorism*. *Studies in Conflict& Terrorism*, <https://www.tandfonline.com/doi/full/10.1080/09546553.2024.2308223>, retrieved on 22 March 2025.
16. The Times (2025). *Ideology is at the heart of terrorism, says extremism tsar*, <https://www.thetimes.co.uk/article/ideology-terrorism-extremism-violence-t3rl7bhv9>, retrieved on 23 March 2025.
17. United Nations (2021). *CTED Trends Alert: Extreme Right-Wing Terrorism*, [https://www.un.org/securitycouncil/ctc/sites/www.un.org/securitycouncil.ctc/files/documents/2021/Jan/cted\\_trends\\_alert\\_extreme\\_right-wing\\_terrorism.pdf](https://www.un.org/securitycouncil/ctc/sites/www.un.org/securitycouncil.ctc/files/documents/2021/Jan/cted_trends_alert_extreme_right-wing_terrorism.pdf), retrieved on 22 March 2025.
18. Zhou, Y., Kim, D. (2023). *How technological, organizational, and environmental factors drive the digital economy: A comprehensive review*. In *Sustainability*, 15(16), 12248.

*The integration of intelligent information systems, based on machine learning algorithms, predictive analysis and advanced data processing, becomes not just a methodological option, but an operational necessity.*