

Electronic documents as resources for sociological research on the level of security of financial and legal relations

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Abstract. Electronic documents, such as contracts, court decisions, financial reports, etc., can contain valuable information about social factors that affect the security of financial and legal relations. Analysis of these documents helps to identify the interrelationships between public trust, power, technology, and other social phenomena in the context of their impact on the security of individuals and society as a whole. The purpose of the article is to determine the possibilities of using electronic documents as resources for sociological research to assess the level of security of financial and legal relations. The study uses historical and logical methods to highlight the current state of affairs in the field of digital data analytics, and the methods of comparison and generalization form the basis for classifying risk indicators available in the texts of electronic documents. It is indicated that in the context of the spread of digital interaction between people, understanding the sociological aspects of their behaviour reflected in electronic documents becomes key to assessing the risks of illegal financial transactions. The article substantiates the important role of electronic documents as a valuable resource for sociological research. The study is based on an interdisciplinary approach, highlighting the possibilities of integrating sociological analysis, network research, linguistic pattern recognition and data mining methods to obtain meaningful information from large amounts of electronic documents. The main results of the study include the classification of indicators of illicit financial transaction behaviour present in the texts of electronic documents. The study highlights the practical value of using electronic documents in sociological research, offering practical guidance for government officials, lawyers, and analysts to improve risk assessment and develop security measures. The materials systematized in this study demonstrate the potential of open-source intelligence (OSINT) and advanced data analytics to build meaningful sociological models using electronic documents, highlighting their importance in addressing contemporary security analytical challenges

Keywords: digitalization; behaviour; risk; security; cybersecurity; rights protection; big data; data mining; OSINT

Introduction

The issue of using electronic documents as resources for sociological research in determining the level of security of financial and legal relations is relevant in the context of

modern digitalization processes. By analysing electronic documents, it is possible to study the dynamics of financial transactions, identify possible risks and violations of legal

Suggested Citation

Article's History: Received: 05.12.2023 Revised: 04.03.2024 Accepted: 28.03.2024

Revak, I., Pidkhomnyi, O., & Chubaievskiyi, V. (2024). Electronic documents as resources for sociological research on the level of security of financial and legal relations. *Social & Legal Studios*, 7(1), 273-282. doi: 10.32518/sals1.2024.273.

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norms. This allows effectively identifying and responding to potential security threats, contributing to the development of effective management strategies and legislative regulation. The use of electronic documents in sociological research also expands the possibilities of collecting objective information, which is key to understanding the dynamics and interpretation of modern financial and legal processes. In addition, the use of electronic documents helps to increase the efficiency of research by providing quick access to large amounts of data and automated processing. Collecting and analysing digital data also contributes to the development of innovative methods of identifying patterns in financial and legal relations, which allows security and management strategies to be adapted to a rapidly changing environment.

Many scientific studies by domestic and foreign scholars have been devoted to the issue under study. For example, A. Macanovic (2022) conducts text mining for the social sciences, focusing on the current state and future development of computer text mining. R. Wenzel and N.V. Quaquebeke (2018) explore the opportunities and risks of using big data in organizational and management research, emphasizing the dual nature of big data, such as offering enormous opportunities and benefits, while also being accompanied by significant challenges and risks. M. Glassman and M.J. Kang (2012), M. Hachem *et al.* (2023) study the emergence and evolution of open-source intelligence (OSINT) in the era of the Internet and total digitalization, emphasizing its role in intelligence gathering. C. Hoffman *et al.* (2024) use a group trajectory approach to predict the criminal careers of new hackers, placing an emphasis on the importance of cybersecurity.

The study of socio-economic factors that encourage investors to invest in cryptocurrencies, the study of factors of distrust and speculation, and the identification of security threats to the dissemination of false information and Internet rumours based on sociological principles are the focus of W. Chu *et al.* (2021), R. Auer and D. Tercero-Lucas (2022), H. Ogbeide *et al.* (2023). O. Pidkhomnyi *et al.* (2019) use the example of Ukraine to study trust as a factor affecting pricing and shadowing of the national economy.

A number of scientific papers are devoted to the problem of assessing the risks of money laundering, terrorist financing and developing effective measures to counter illegal financial transactions, taking into account the use of electronic documents and the results of sociological research. The works by S. Klimova *et al.* (2020), I. Moiseenko *et al.* (2021) present the results of research on modern approaches to risk assessment and automation methods in commercial banks in relation to money laundering and terrorist financing, and the construction of algorithms for identifying money laundering risks. The article also discusses the use of machine learning to build a national anti-money laundering index, which would help improve the results of risk assessment in financial systems. At the same time, the issues of increasing the efficiency and reliability of the use of electronic documents in conducting sociological research on the level of security of financial and legal relations, ensuring legal certainty and protection of financial relations in the context of digitalization and rapid adaptation to changes in the field of electronic documentation require special attention and resolution.

The purpose of the study is to determine the possibilities of using electronic documents as resources for sociological research to assess the level of security of financial

and legal relations. To achieve this goal, the following tasks need to be addressed: to substantiate the role of electronic documents as a valuable resource for sociological research; to study the relationship between electronic documents and legal processes, to determine how these technologies affect legal certainty and security of financial relations; to analyse electronic documents related to financial transactions in order to identify potential risks and security threats; to classify identifiers (indicators) that may be contained in electronic documents; and reflect the risks of illegal financial transactions; develop recommendations for risk prevention and management.

Materials and methods

The study was based on information from the available scientific and specialized literature and methodological tools developed by other researchers in the fields of law, sociology, information technology and security. By synthesizing modern knowledge and methodological ideas, the authors of the article deepened interdisciplinary connections and ensured that a number of theoretical and methodological provisions were aligned with the established practice of preparing analytical materials on security issues.

Given that the assessment of the level of security of financial and legal relations is closely related to the assessment of money laundering and terrorist financing risks, analytical, regulatory and law enforcement agencies are establishing close cooperation to continuously improve the methodology for assessing the relevant risks. For example, Ukraine's Methodology (OSCE, 2018) for conducting a National Risk Assessment (NRA) serves as a framework for identifying and analysing money laundering and terrorist financing risks; it outlines the criteria, factors, and processes for investigating these risks. The relevant methodologies are typically based on a risk-based approach, where resources are allocated based on the level of risk associated with specific customers, transactions, or business relationships. This approach allows for a more targeted and efficient allocation of resources to mitigate money laundering and terrorist financing risks. Therefore, the conclusions of the study are based on a risk-based approach, which involves analysing relevant social problems using the concepts of "threat" and "vulnerability", assessing the potential for threats to affect vulnerabilities, and predicting the relevant social consequences.

For the purpose of the study, the author selected a set of scientific methods designed for a comprehensive analysis of digital data analytics and classification of risk indicators that can be identified through the study of electronic documents. The article uses general scientific research methods, in particular, historical and logical methods to highlight the current state of affairs in the field of digital data analytics; comparison and generalization methods to classify risk indicators available in the texts of electronic documents.

The combination of historical and logical methods allowed deepening our understanding of the evolution of digital data management practices and the consequences of their proliferation for security in the financial and legal sectors. Based on the historical development of electronic document systems and the use of logical analysis of cause-and-effect relationships, the current state of affairs in this area is described and ways for further research are outlined.

The methods of comparison and generalization made it possible to classify the risk indicators present in the texts of

electronic documents. Through a systematic comparison of the content elements of different types of electronic documents, such as regulatory documents, statistical data, and analytical reports of government agencies, NGOs, and international organizations, the author has identified general patterns and risk indicators that indicate the vulnerabilities of the positions of various entities in financial and legal relations.

The study was based on various materials, including legal documents regulating the circulation of electronic data (Law of Ukraine No. 851-IV, 2003; Resolution of the Cabinet of Ministers of Ukraine No. 55-2018-p, 2017; United Nations, 2022), analytical materials (OSCE, 2016) on the risks of offences and typical incidents (Potts, 2019), as well as guidelines from institutions specializing in security and compliance with national and international law. The use of these materials ensured the reliability and relevance of the research results.

Results and discussion

In the context of the methodology of sociological research of various spheres of social life in the context of digitalization, an electronic document is a digital record or textual artefact containing relevant social information, interaction, and discourse, accessible through digital information processing tools. The peculiarity of electronic documents is their ability to provide financial and legal information in real-time. Electronic documents often contain archives of historical financial information, which makes it possible to conduct long-term studies of the behaviour of individuals or groups of individuals to track changes and developments in financial issues over long periods. Such long-term studies allow understanding the evolution of financial phenomena and the effectiveness of systemic solutions in terms of legal regulation of public life. Both quantitative and qualitative research can be conducted with the help of electronic documents.

At the same time, an understanding of the social context, economic conditions, and potential vulnerabilities can help develop and improve the national methodology and conduct the National Risk Assessment. In addition to generalized assessments of existing threats and vulnerabilities, electronic documents can be used to investigate individual episodes of criminal activity. The leading document at the international level that provides guidance for such investigations is the Berkeley Protocol (United Nations, 2022). The Berkeley Protocol was developed as the first-ever guide to the effective use of open-source information in international criminal and human rights investigations. It was created to formulate professional standards and guidelines for the identification, collection, preservation, verification, and analysis of digital information from open sources. According to the Berkeley Protocol's principle of legality, open-source investigations must comply with the requirements of applicable law. One of the key aspects of the Berkeley Protocol's legality principle is the emphasis on measures to verify the authenticity and reliability of visual content, such as videos and photographs, that arise from crises around the world. This verification process is essential to ensure that the information used in an investigation meets legal and ethical standards. In an increasingly digitized world, the Berkeley Protocol's drafters hope that it will help online investigators (lawyers, human rights defenders, journalists, and others) develop and implement effective procedures to document and verify violations of international humanitarian

and criminal law, making best use of digital information from open sources, so that those responsible for these violations are fairly held accountable. Among the important methodological provisions of the Berkeley Protocol is the instruction that investigators should take into account gender, age, geography, socio-economic differences and demographic information.

Finance and law are intrinsically linked, as the legal framework defines the rules and regulations that govern financial transactions and systems in general. Laws are crucial for ensuring transparency, fairness, and accountability in financial markets, protecting investors' rights, and maintaining economic stability at the institutional level. Financial regulations, whether they relate to banking, securities, or taxation, are integral components of the legal system that governs financial activities. At the same time, financial relations often require legal assessment and legal expertise.

As is well known, sociologists can conduct quantitative content analysis to measure the frequency of specific financial characteristics, terms, or intentions in legally relevant documents. At the same time, they can use qualitative methods to gain a clear understanding of the content of financial discourses (Jonušaitė & Ullman, 2024). The advantage of using electronic documents is their ease of use, which allows comparing financial issues in different regions, countries, or time periods without any obstacles or restrictions. This helps to identify similarities and differences in financial practices and policies of different actors, contributing to a deeper understanding of financial and legal issues.

Another promising area of electronic documents is the study of the impact of financial policy on social change and the level of security of individual actors, the state as a whole, and international security. By studying management financial documents that reflect certain decisions and public feedback, researchers can assess the effectiveness and impact of financial regulation on different social groups, taking into account levels of financial literacy (Beytia & Müller, 2022) and public trust (Pidkhomnyi *et al.*, 2019). The multidimensionality of topics, situations, objects, and events reflected in electronic documents (ThumalaOlave, 2020; Beytia & Müller, 2022) equates these documents to paper and audiovisual documents in terms of their significance. Electronic documents can record not only the fact of an event, but also reflect its external manifestations. For example, a document in the form of a website can simultaneously convey the content (what a certain subject said) and the form (how they said it) of a particular event. At the same time, such documents have a complex form that affects the further processing of the information they contain.

Sociological research using electronic documents makes it possible to identify various patterns and ideas related to social behaviour, relationships, and interactions in the field of finance. In this regard, the following patterns are worth highlighting:

- ▶ the spread of sentiment on social media, for which sociologists use electronic documents from social media platforms to analyse likes and dislikes, identify patterns of public opinion and emotions about specific social issues, activities, or political events (Chu *et al.*, 2021)
- ▶ the identification of online communities, when sociologists use electronic documents in social media to analyse online communities and forums that share common interests, use words and language constructs specific to a

particular community, or participate in specific discussions related to social, financial, or political topics;

- ▶ radicalization processes, where electronic documents can be used to identify relevant online posts by studying how extremist ideologies are spread and the information and psychological impact on people to decide to join or support violent groups;

- ▶ the influence of opinion leaders, when the analysis of electronic documents makes it possible to identify opinion leaders and influencers in online discussions and on social media platforms, which gives an idea of how individuals shape public opinion;

- ▶ the formation of social problems, in relation to which, by analysing electronic documents, sociologists identify various frameworks and discourses used by the media and online platforms to highlight and interpret social problems, influence public perception and debate;

- ▶ the functioning of social networks of criminal organizations (Hachem *et al.*, 2023; Hoffman *et al.*, 2024), where sociological research using electronic documents reveals patterns of social networks of people involved in activities such as cybercrime, money laundering, human and drug trafficking, etc;

- ▶ public reactions to policy changes, when electronic documents, including media articles and online discussions, are used to study public reactions to policy changes to understand how political decisions affect different social groups;

- ▶ the formation of distinct cultures and subcultures (Thumala Olave, 2020), in which sociologists analyse electronic documents from different regions and countries to make cross-cultural comparisons to understand how social phenomena and attitudes to certain issues differ in different societies.

These and other examples demonstrate the diverse applications of sociological research based on electronic documents, highlighting the importance of digital data for understanding contemporary social dynamics and informing decision-makers with evidence-based information.

Without a doubt, the results of sociological research based on electronic documents can have not only social but also legal significance and be used in various legal contexts, including civil disputes, criminal investigations, and, in particular, in the evidence base of experts. Sociological research can be used to support legal arguments in court cases, or to justify legal acts, or to assess their constitutionality based on sociological evidence. In cases where electronic documents are used as evidence, sociological research can be used to authenticate and verify the reliability and relevance of the data. Such research can help to assess the social harm caused by certain actions or policies, which can be relevant for determining remedies and penalties. The results of sociological research can be relevant to legal discussions on privacy and data protection, especially when it comes to online platforms and electronic communication.

Electronic documents are becoming increasingly common in legal practice due to the digitalization of information and communications (Resolution of the Cabinet of Ministers of Ukraine No. 55-2018-p, 2017; Order of the Cabinet of Ministers of Ukraine No. 1467-p, 2021). These documents may include emails, text messages, social media posts, electronic contracts, digital photos, videos, and other types of digital files. In court cases, e-documents are treated in the same way as traditional paper documents, but there are some unique features and challenges associated with their use.

One of the main challenges associated with electronic documents is ensuring their authenticity. Unlike physical documents, which can often be verified with signatures or seals, electronic documents require authentication methods such as digital signatures, metadata analysis, and forensic analysis. Lawyers can use special methods and tools to authenticate electronic documents to ensure that they are admissible in court. Electronic documents are subject to the same rules of record keeping and research as traditional documents (Law of Ukraine No. 851-IV, 2003). At the initial stage of litigation, the parties are required to produce relevant electronic documents in their possession, custody, or control. This may include a wide range of computer systems, servers, and other electronic data storage devices for the purpose of identifying and collecting relevant evidence. For electronic documents to be admissible in court, they must meet the same evidentiary standards as traditional documents. This includes relevance, authenticity, and reliability. Practitioners may need to consider the storage system for electronic evidence and expert testimony as to its authenticity and accuracy. Practitioners should also consider the legal provisions on confidentiality and data protection (Law of Ukraine No. 851-IV, 2003) when dealing with electronic documents. Depending on the jurisdiction, there may be specific rules governing the collection, storage, and disclosure of electronic information. Failure to comply with the relevant requirements may result in legal consequences and affect the admissibility of electronic evidence in court.

Examining electronic documents can provide valuable sociological information that may be relevant to legal arguments. For example, analysing social media posts or emails can reveal behavioural patterns, social attitudes, or relationships relevant to the case. Sociological arguments based on the examination of electronic documents can be used to prove or disprove allegations, establish motive or intent, or provide context for other evidence. Also, sociological arguments arising from the study of electronic documents may include an understanding of the impact of technology on communication, record-keeping, and information management patterns within organizations. These arguments may be relevant in legal practice when assessing the reliability, authenticity, and context of electronic documents.

With the advent of automation tools and texts in electronic form, starting in the 1960s, content analysis of large volumes of text – databases and interactive media sources – has developed rapidly. The traditional political use of modern content analysis technologies has been supplemented by an unlimited range of headings covering industrial and social spheres, culture and science, finance, and law. This process, in turn, was accompanied by the development of numerous software systems.

Another interesting feature of content analysis is that this methodology has long been associated with a specific area of human activity (politics and sociology). Nevertheless, today content analysis is increasingly being used in many areas of political and economic life, which contributes to the growth of the applied value of financial concepts, legal categories, sociology, and linguistics used in the process of content analysis. Content analysis in the context of information flow research is a relatively new area that involves the analysis of an array of text documents obtained as a result of monitoring the information space.

In the era of modern technology, sociological research is based on the use of *big data*, electronic data mining and OSINT (Open Source Intelligence) technology – intelligence based on open sources of information. The term “big data” is commonly used to describe a number of different concepts: from the collection and aggregation of huge amounts of data to a wide range of advanced digital methods designed to identify patterns related to human behaviour. It is worth noting that big data creates new opportunities and challenges for sociological research due to a number of circumstances. Firstly, it is the availability of data and access to it. Big data has exponentially increased the availability of large and diverse datasets, including social media content, digital archives, administrative records, and the results of sociological surveys. Sociologists can access these large datasets and study social phenomena on a large scale and with a high level of detail. Big data provides sociologists with the resources to conduct large-scale quantitative analysis. It allows researchers to identify patterns, correlations, and trends in huge data sets, providing a robust statistical understanding of social behaviour and related trends. Big data often involves real-time data streams and historical numerical data sets, enabling sociologists to study social phenomena that evolve over time. This ability to capture temporal dynamics improves understanding of complex social processes.

In this regard, sociologists can use big data (Lahiani & Frikha, 2023) to formulate hypotheses and identify trends, and the combination of quantitative and qualitative methods allows for a deeper understanding of social dynamics. In addition, big data provides a unique opportunity to study human behaviour and various types of interaction in the digital space. Social media data, for example, helps to understand public sentiment, opinions, and trends that dominate society.

Meanwhile, the use of big data in sociology raises ethical issues related to confidentiality, consent to use, and data ownership. In this regard, sociologists must address these issues responsibly, ensuring the protection of the rights of the people being studied and the confidentiality of their personal data. Big data can challenge existing sociological theories and offer new empirical evidence to build new theories. This allows hypotheses to be tested on a scale that was previously unattainable with smaller data sets. Big data analysis leads to interdisciplinary collaboration, so sociologists can participate in interdisciplinary research to use the technical expertise needed to analyse big data. Sociologists can play a crucial role in interpreting and contextualizing the results of big data research for policy development and public decision-making.

At the same time, some researchers emphasize the wide range of opportunities and risks associated with the big data paradigm, the data itself, and the analytical methods used. According to R. Wenzel and N.V. Quaquebeke (2018), big data as a paradigm can be a double-edged sword, capable of significantly improving the tools of relevant research, but also causing a negative reaction if not used properly. New possibilities of using large-scale textual sources in sociological research are discussed by A. Macanovic (2022). Analysing a number of modern methodological developments, the author points out the important consequences of using large datasets and computational methods to determine the complex meaning of texts, and along with traditional methods, suggests using text mining tools.

In general, the use of big data in sociology creates both opportunities and challenges. Sociologists should be aware of the limitations and biases of these data sources and take steps to ensure that their analyses are accurate and reliable. By using computational tools and innovative research methods, sociologists can gain new insights into social phenomena and explore questions that were previously difficult to answer. However, they also need to be aware of the ethical considerations involved in using big data and take steps to ensure the accuracy and reliability of their analyses.

The relationship between sociology and data mining is characterized by the application of data mining techniques to sociological research, which involves the process of identifying patterns, trends, and insights in large data sets. These techniques help researchers draw conclusions based on evidence. For example, clustering and classification methods help identify patterns and relationships in sociological data, so sociologists can uncover hidden connections and group similar entities based on specific characteristics. Using a quantitative approach to the study of sociological phenomena makes it possible to measure the prevalence of certain types of behaviour or trends based on empirical evidence from a single study. Data mining allows sociologists to test hypotheses on a large scale of research objects to check the relationships between variables and to confirm or refute theoretical assumptions.

Furthermore, data mining allows sociologists to create predictive models based on historical data, to predict future trends and the behaviour of individuals in social systems (Maciejewski *et al.*, 2022). Data mining techniques can also be applied to textual data, such as social media content or qualitative responses in surveys. Text mining helps to extract important insights from unstructured data, allowing researchers to analyse large amounts of text efficiently. Data mining speeds up the research process by automating tasks that would be time-consuming using traditional methods. This efficiency allows sociologists to process larger data sets and draw more comprehensive conclusions. This method can be used in combination with other research methods, such as surveys and interviews, to provide a more complete and deeper understanding of social phenomena and processes.

It is interesting that the results of research by Chinese scientists have confirmed the thesis that combining social science theory and methodology with big data analysis is effective (Luo *et al.*, 2019). This has allowed for the identification of a number of new topics for big data analysis and the conduct of qualitative and quantitative sociological research to provide a basis for verifying the results of data mining. The evidence obtained as a result of such analysis can contribute to the development of theory and the construction of predictive models to draw conclusions and explain numerous phenomena. Using the example of Internet data from the Chinese venture capital industry, the authors substantiate the three-way interaction between data mining, sociological theory, and predictive models.

Thus, data mining involves the process of extracting useful information and knowledge from large volumes of documentary resources. As the amount of available data has increased with the development of digital technologies, sociologists have come to rely more on data mining to gain a deeper understanding of the complex social world. In sociology, data mining is used to analyse large amounts of

electronic resources to identify patterns and trends in social behaviour. This approach allows sociologists to go beyond traditional research methods to study complex social issues such as poverty, inequality, and crime. By using data mining techniques, sociologists can gain new insights into social behaviour that would be difficult or impossible to discover using traditional research methods.

The relationship between sociology and OSINT is the use of open-source intelligence as a valuable source of information for sociological research (Pellet *et al.*, 2019). OSINT refers to the process of collecting and analysing information from publicly available sources such as websites, social media platforms, online databases, news articles, and government publications. OSINT is the result of the changing relationship between people and information due to the emergence and growing dominance of the Internet in everyday life. The Internet opens up new possibilities for accessing information and going beyond the overly deterministic traditional cultural intelligence in solving cognitive problems (Glassman & Kang, 2012).

OSINT also provides sociologists with access to a huge amount of electronic documents that can be collected from various online sources to study social behaviour, public sentiment, attitudes, and trends. OSINT data can be collected in real time to study and monitor current social events and phenomena as they develop. OSINT sources often provide contextual information that helps social scientists understand the broader social, financial, and legal context in which social phenomena occur. OSINT can be used in combination with other data sources, such as surveys, interviews, and archival data, to triangulate results and strengthen the validity of sociological research. In general, the use of OSINT in sociology provides researchers with a powerful tool for studying social phenomena, identifying patterns and relationships that may not be available using traditional research methods.

In the context of assessing the level of security of financial and legal relations, sociology can be very useful for conducting a national money laundering risk assessment (OSCE, 2016). By understanding the problem of money laundering as a complex social phenomenon involving a variety of actors, their behaviours, and institutions, sociological approaches can provide valuable insights into the underlying social dynamics and contextual factors that contribute to money laundering risks. This includes analysing the social structures that facilitate money laundering, studying the relationships between financial institutions, businesses, and criminal networks (Klimova *et al.*, 2020; Moiseenko *et al.*, 2021; Ogbeide *et al.*, 2023). Sociological research can encompass the study of the organizational culture of financial institutions and businesses that are prone to money laundering practices. By analysing financial reports, corporate communications, news flows, and social media content, sociologists can identify the preconditions and signs of potential money laundering operations. Understanding the cultural norms and values that may facilitate or hinder action is also important for effective risk assessment. Social network analysis can reveal patterns of cooperation and communication between individuals and entities involved in illicit financial activities, including cryptocurrency trafficking (Auer & Tercero-Lucas, 2022). Electronic documents used in sociological research can indicate the methods used by criminals, their relationship with legitimate financial

systems, and information on public perception and understanding of financial crime. The study of money laundering at the level of national risk assessment has significant prospects for automation (Zhang *et al.*, 2023).

Money laundering clearly has significant social impacts, including funding organized crime and undermining public confidence in financial systems. Sociological research can assess the impact of money laundering on society and contribute to the development of targeted anti-money laundering policies and prevention strategies. The results of sociological research can also be used to inform national terrorist financing risk assessments. Terrorism and its financing are complex social phenomena, and sociology can provide valuable insights into the underlying social dynamics and contextual factors that contribute to terrorist financing risks. Terrorist financing often takes place through informal financial systems, which makes it important to study informal networks, ways of transferring, concealing and laundering funds through social connections and informal channels. The study of electronic documents through digital platforms can help sociologists examine online content and communications related to radicalization processes and the spread of extremist ideologies that could potentially lead to terrorist financing.

Evidence-based sociological research plays a crucial role in informing law enforcement. By applying the scientific method and conducting case studies, sociologists can provide valuable information and evidence-based recommendations to improve policing strategies and practices. For example, Evidence-based policing (EBP) is an approach that relies on the use of scientific research and evidence to inform law enforcement decision-making. It involves analysing research findings and implementing strategies that have been proven to reduce crime and increase public safety. EBP helps law enforcement agencies make informed decisions about resource allocation, crime prevention, and community engagement (Potts, 2019).

Sociological research contributes to the development of preventive policing strategies targeting “hot spots, hot people and hot times” based on knowledge gained from crime analysis. By identifying high-crime areas and individuals at risk, law enforcement agencies can more effectively allocate resources and implement targeted crime prevention measures. Sociological research supports the implementation of community policing, which emphasizes cooperation between law enforcement agencies and the communities they serve. Research has shown that building trusting relationships with community members can increase the effectiveness of law enforcement. Sociological research helps to identify effective strategies for engaging with the public and provides insight into the social dynamics that affect the relationship between society and the police. Modern information technologies make it possible to conduct at least some of such research on the basis of electronic documents using OSINT methods.

Sociological studies of people’s propensity to engage in illegal activities can become more effective by focusing researchers’ attention on the presence of certain types of indicators in electronic documents. Based on the study, the author grouped the indicators whose presence and prevalence in the texts of electronic documents can be used to assess the risk of illegal financial transactions in a particular society and analyse the relevant trends (Table 1).

Table 1. Groups of risk indicators available in electronic documentation

Presence of mentions and reputation on the Internet	Evaluating Internet mentions and public perception of certain organizations or individuals involved in financial transactions.
Past incidents	Review of historical data in documents to identify patterns of conflict behaviour, incidents that may indicate ongoing participation in illegal financial transactions.
Mentions of detected violations	References in electronic documents to inspections, monitoring, and their results or attempts to evade detection. Such references may indicate awareness of control systems and intentions to circumvent relevant procedures.
Compliance indicators	Assessment of compliance by the organizations or persons referred to in the documents with the relevant provisions of the law, especially with regard to the requirements for the financial monitoring system. Non-compliance or circumvention of regulatory measures may indicate illegal financial activity.
Anomalies in reports and declarations	Cases of inconsistent or suspicious information in financial reports and declarations may indicate potential attempts to conceal illegal activity. By studying such anomalies, researchers can contribute to a more detailed understanding of the social dynamics affecting financial transactions and help identify priority areas for regulatory intervention and risk mitigation strategies.
Changes in behaviour	Detecting changes in behaviour or sudden changes in the roles of organizations or individuals mentioned in the documents. Sudden changes may indicate involvement in illegal activities, which is reflected in the way of life. Fixation of manipulative actions with elements of social engineering requires special attention.
Unusual use of language	Certain threats can be detected by analysing text for unusual language patterns or coded communication that may indicate attempts to hide illegal financial transactions.
Unusual transaction patterns	Checking the details of the transactions mentioned in the documents for anomalies such as irregular frequency, amounts, or methods. Sudden changes in transaction patterns can signal potential risks.
Unusual technological activity	Technological manipulations in electronic documents may include indications of hacking, encryption, or other cybercrime – related activities.
Connections and relations	It is important to pay attention to networks of individuals or organizations mentioned in electronic documents in positive or negative contexts. It is necessary to identify patterns of relationships, cooperation, or associations that may indicate involvement in illegal financial activities.
Ownership structures	Valuable information can be obtained from the results of data analysis on the structure of ownership and control of economic entities. Opaque ownership or control schemes may raise suspicions.
Unusual geographical connections	Unusual ties to high-risk jurisdictions may indicate potential involvement in illicit financial activity. In relevant studies, it is advisable to use content guidelines formed in the field of sociology of international relations.

Source: developed by the authors

Verification of the authenticity of information in sociological research electronic documents is crucial for ensuring the credibility of research results. Electronic documents may have various sources, so it is important to use a system of methods to assess their reliability. Verification of information authenticity encompasses a range of criteria, including: source credibility (it is worth evaluating the trustworthiness and reputation of sources providing electronic documents, considering that reliable sources may include government publications, authoritative information organizations, scientific journals, and official financial reports from well-known institutions); transparency of data collection (methods of filtration or sampling should be applied); data verification (cross-referencing data from multiple sources may reveal discrepancies or errors); triangulation (allows combining analysis of electronic documents with other data sources such as surveys, interviews, or official statistics to enhance the reliability and credibility of conclusions); timestamps (focused attention on such details helps contextualize data and determine if they align with the study's timeframe); data plausibility and consistency (assessing the correspondence of information in electronic documents with existing knowledge and theoretical foundations, establishing the consistency and coherence of data with established facts); metadata usage (identification of authorship, publication date, and version history to assess data reliability and authenticity); bias and objectivity (consideration of potential political or commercial interests and

their likely influence on research results, striving for objectivity in data interpretation); sample representativeness (ensuring the ability of the sample to reproduce the main characteristics of the population to avoid misleading conclusions); expert review and collaboration (conducting expert assessment and organizing collaboration with other researchers to obtain external validation of results ultimately enhance the accuracy and reliability of the research).

Overall, by following the recommended steps and considerations, sociologists can enhance the reliability of information obtained from electronic documents and increase trust in the results of their research. Thorough data assessment ensures that sociological research based on electronic documents contributes to a valuable and fact-based understanding of social phenomena and behaviour.

Conclusions

In general, electronic documents play a crucial role in modern legal practice, and lawyers must be able to deal with the unique challenges and generate and verify versions of such documents. From authentication and admissibility, on the one hand, to privacy issues and sociological analysis, on the other, electronic documents present both opportunities and challenges in the administration of justice.

OSINT technology is a valuable resource for sociological research, providing researchers with a wide range of publicly available data to study social phenomena and identify the level of complexity of society. By incorporat-

ing OSINT into their research methodologies, sociologists can gain valuable insights into social behaviour, attitudes, and trends, and contribute to a deeper understanding of social dynamics and their implications for individuals and communities.

By focusing on understanding social structures, behaviour and context, sociology is a valuable discipline for conducting national money laundering and terrorist financing risk assessments. By applying sociological findings, policy-makers, and authorities can develop more informed and targeted strategies to combat money laundering and promote the integrity and transparency of the financial system. By using e-document data, sociologists can gain insight into the social dimensions of money laundering and terrorist financing risks and make a significant contribution to the development of more effective anti-money laundering and counter-terrorism measures.

Electronic documents are an integral part of modern legal practice, and their use is regulated by specific rules and, in some countries, case law. These regulations ensure proper authentication, admissibility, and management of electronic documents in the workflow process. Sociological arguments related to electronic documents can provide additional criteria for assessing and understanding the practices and behaviours of various actors involved in the creation and use of the relevant media.

By integrating modern methods of sociological research with automated information processing, a deeper understanding of the social factors that influence the security of financial and legal relations can be gained. The use of an interdisciplinary approach will facilitate the development of a new or improvement of the existing methodology for national risk assessment, considering the proposed groups of indicators. The use of the latest digital technologies and methods of statistical analysis will increase the accuracy of the results of the national risk assessment and thus facilitate the implementation of effective risk management measures.

Acknowledgements

We express our deep gratitude to the State Financial Monitoring Service of Ukraine, the Academy of Financial Monitoring of Ukraine and international partners represented by the United Nations Office on Drugs and Crime, the Organization for Security and Co-operation in Europe, the Royal United Services Institute for Defence and Security Studies for disseminating ideas that contribute to the quality of the National Illicit Financial Transactions Risk Assessment and updating efforts aimed at improving the methodology of its conduct in accordance with the requirements of today.

Conflict of interest

There is none.

References

- [1] Auer, R., & Tercero-Lucas, D. (2022). Distrust or speculation? The socioeconomic drivers of U.S. cryptocurrency investments. *Journal of Financial Stability*, 62, article number 101066. doi: [10.1016/j.jfs.2022.101066](https://doi.org/10.1016/j.jfs.2022.101066).
- [2] Beytía, P., & Müller, H.P. (2022). Towards a digital reflexive sociology: Using wikipedia's biographical repository as a reflexive tool. *Poetics*, 95, article number 101732. doi: [10.1016/j.poetic.2022.101732](https://doi.org/10.1016/j.poetic.2022.101732).
- [3] Chu, W., Lee, K.T., Luo, W., Bhambri, P., & Kautish, S. (2021). Predicting the security threats of internet rumors and spread of false information based on sociological principle. *Computer Standards & Interfaces*, 73, article number 103454. doi: [10.1016/j.csi.2020.103454](https://doi.org/10.1016/j.csi.2020.103454).
- [4] Glassman, M., & Kang, M.J. (2012). Intelligence in the internet age: The emergence and evolution of Open Source Intelligence. *Computers in Human Behavior*, 28(2), 673-682. doi: [10.1016/j.chb.2011.1.014](https://doi.org/10.1016/j.chb.2011.1.014).
- [5] Hachem, M., Mizouni, R., Alawadhi, I.M., & Altamimi, M.J. (2023). Digital forensic intelligence for illicit drug analysis in forensic investigations. *iScience*, 26(10), article number 108023. doi: [10.1016/j.isci.2023.108023](https://doi.org/10.1016/j.isci.2023.108023).
- [6] Hoffman, C., Howell, J.C., Perkins, R.C., Maimon, D., & Antonaccio, O. (2024). Predicting new hackers' criminal careers: A group-based trajectory approach. *Computers & Security*, 137, article number 103649. doi: [10.1016/j.cose.2023.103649](https://doi.org/10.1016/j.cose.2023.103649).
- [7] Jonušaitė, I., & Ullman, T.D. (2024). The invisible hand as an intuitive sociological explanation. *Journal of Experimental Social Psychology*, 110, article number 104546. doi: [10.1016/j.jesp.2023.104546](https://doi.org/10.1016/j.jesp.2023.104546).
- [8] Klimova, S., Zhampeis, N., & Grigoryan, A. (2020). Contemporary approaches to money laundering/terrorism financing risk assessment and methods of its automation in commercial banks. *Procedia Computer Science*, 169, 380-387. doi: [10.1016/j.procs.2020.02.233](https://doi.org/10.1016/j.procs.2020.02.233).
- [9] Lahiani, H., & Frikha, M. (2023). A systematic review of social media data mining on android. *Procedia Computer Science*, 225, 2018-2027. doi: [10.1016/j.procs.2023.10.192](https://doi.org/10.1016/j.procs.2023.10.192).
- [10] Law of Ukraine No. 851-IV "On Electronic Documents and Electronic Document Management". (2003, May). Retrieved from <https://zakon.rada.gov.ua/laws/show/851-15#Text>.
- [11] Luo, J.D., Liu, J., Yang, K., & Fu, X. (2019). Big data research guided by sociological theory: A triadic dialogue among big data analysis, theory, and predictive models. *The Journal of Chinese Sociology*, 6, article number 11. doi: [10.1186/s40711-019-0102-4](https://doi.org/10.1186/s40711-019-0102-4).
- [12] Macanovic, A. (2022). Text mining for social science – The state and the future of computational text analysis in sociology. *Social Science Research*, 108, article number 102784. doi: [10.1016/j.ssresearch.2022.102784](https://doi.org/10.1016/j.ssresearch.2022.102784).
- [13] Maciejewski, P.K., Falzarano, F.B., She, W.J., Lichtenthal, W.G., & Prigerson, H.G. (2022). A micro-sociological theory of adjustment to loss. *Current Opinion in Psychology*, 43, 96-101. doi: [10.1016/j.copsyc.2021.06.016](https://doi.org/10.1016/j.copsyc.2021.06.016).
- [14] Moiseienko, I., Dronyuk, I., & Revak, I. (2021). [Money laundering risk identification algorithms](#). *CEUR Workshop Proceedings. 1st Symposium on Information Technologies and Applied Sciences, IT and AS 2021*, 2824, 120-129.
- [15] Ogbeide, H., Thomson, M.E., & Gonul, M.S. (2023). The anti-money laundering risk assessment: A probabilistic approach. *Journal of Business Research*, 162, article number 113820. doi: [10.1016/j.jbusres.2023.113820](https://doi.org/10.1016/j.jbusres.2023.113820).

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- [16] Order of the Cabinet of Ministers of Ukraine No. 1467-p “On Approval of the Strategy for the Implementation of Digital Development, Digital Transformation and Digitalisation of the Public Finance Management System for the Period up to 2025 and Approval of the Action Plan for its Implementation”. (2021, November). Retrieved from <https://zakon.rada.gov.ua/laws/show/1467-2021-%D1%80#Text>.
- [17] OSCE. (2016). *National Risk Assessment report on preventing and countering legalization (laundering) of proceeds of crime and financing of terrorism*. Kyiv: OSCE.
- [18] OSCE. (2018). *Methodology of National Risk Assessment on Money Laundering and Terrorist Financing in Ukraine (Updated)*. Kyiv: OSCE.
- [19] Pellet, H., Shiaeles, S., & Stavrou, S. (2019). Localising social network users and profiling their movement. *Computers & Security*, 81, 49-57. doi: 10.1016/j.cose.2018.10.009.
- [20] Pidkhomnyi, O.M., Demchyshak, N.B., & Dropa, Y.B. (2019). *Confidence as the national economy pricing and shadowing factor: The case of Ukraine*. *Espacios*, 40(20), 21-32.
- [21] Potts, J. (2019). *5 examples of how evidence-based policing enhances law enforcement*. Retrieved from <https://www.police1.com/police-training/articles/5-examples-of-how-evidence-based-policing-enhances-law-enforcement-wYCdSM1IqXq58xUN/>
- [22] Resolution of the Cabinet of Ministers of Ukraine No. 55-2018-p “Some issues of documenting management activities”. (2018, January). Retrieved from <https://zakon.rada.gov.ua/laws/show/55-2018-%D0%BF/ed20180117#Text>.
- [23] Thumala Olave, M.A. (2020). Book love. A cultural sociological interpretation of the attachment to books. *Poetics*, 81, article number 101440. doi: 10.1016/j.poetic.2020.101440.
- [24] United Nations. (2022). *Berkeley Protocol on Digital Open Source Investigations. A practical guide on the effective use of digital open source. Information in investigating violations of international criminal, human rights and humanitarian law*. New York and Geneva: Office of the United Nations High Commissioner for Human Rights.
- [25] Wenzel, R., & Quaquebeke, N.V. (2018). The double-edged sword of big data in organizational and management research: A review of opportunities and risks. *Organizational Research Methods*, 21(3), 548-591. doi: 10.1177/1094428117718627.
- [26] Zhang, G., Gao, Z., Dong, J., & Mei, D. (2023). Machine learning approaches for constructing the national anti-money laundering index. *Finance Research Letters*, 52, article number 103568. doi: 10.1016/j.frl.2022.103568.

Електронні документи як ресурси соціологічного дослідження рівня безпеки фінансових і правових відносин

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Анотація. Електронні документи, такі як контракти, судові рішення, фінансові звіти тощо можуть містити цінну інформацію про соціальні чинники, які впливають на безпеку фінансових і правових відносин. Аналіз цих документів допомагає виявити взаємозв'язки суспільної довіри, влади, технологій та інших соціальних явищ у контексті їхнього впливу на рівень безпеки окремих індивідів і суспільства загалом. Метою статті є визначення можливостей використання електронних документів як ресурсів для соціологічних досліджень щодо оцінки рівня безпеки фінансових і правових відносин. У дослідженні використано історичний і логічний методи для висвітлення сучасного стану справ у сфері аналітики цифрових даних, методи порівняння й узагальнення стали основою класифікації індикаторів ризиків, наявних у текстах електронних документів. Вказано, що в умовах поширення цифрової взаємодії між людьми розуміння соціологічних аспектів їх поведінки, що мають відображення в електронних документах, стає ключовим для оцінки ризиків нелегальних фінансових операцій. У статті обґрунтована важлива роль електронних документів як цінного ресурсу для соціологічних досліджень. Дослідження опирається на міждисциплінарний підхід, висвітлюючи можливості інтегрування соціологічного аналізу, мережевих досліджень, розпізнавання лінгвістичних шаблонів та методів інтелектуального аналізу даних, щоб отримати значущу інформацію з великих масивів електронних документів. Головні результати дослідження включають класифікацію присутніх у текстах електронних документів індикаторів поведінки, пов'язаної з незаконними фінансовими операціями. Дослідження підкреслює практичну цінність використання електронних документів у соціологічних дослідженнях, пропонуючи практичні орієнтири для урядовців, правників та аналітиків щодо покращення оцінки ризиків і розробки заходів безпеки. Матеріали, систематизовані в цьому дослідженні, демонструють потенціал розвідки на основі відкритих джерел (OSINT) і розширеної аналітики даних для побудови значущих соціологічних моделей з використанням електронних документів, підкреслюючи їх значення для вирішення сучасних аналітичних проблем у сфері безпеки

Ключові слова: діджиталізація; поведінка; ризик; безпека; кібербезпека; захист прав; big data; data mining; OSINT