

THE DIFFERENCES BETWEEN COMPETITIVE INTELLIGENCE, BUSINESS INTELLIGENCE, AND NATIONAL SECURITY INTELLIGENCE: A BIBLIOMETRIC ANALYSIS

Nicolae Alexandru BUDEANU

National University of Political Studies and Public Administration
30A Expozitiei Blvd., Sector 1, 012104 Bucharest, RO
budeanu.alexandru6@gmail.com

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Abstract

The concept of "intelligence" represents an important subject for researchers, developed over time in many categories, such as business intelligence, competitive intelligence, and national security intelligence. Even so, those meanings basically refer to the same capacity for processing data, information, and knowledge, their differences coming from their area of expertise. Given this, national security intelligence is associated with state institutions, while business intelligence and competitive intelligence are associated with private companies. National security intelligence represents the capacity of the leaders of a country to process the significant data, information, and knowledge for that country's security from all possible perspectives. To achieve this performance, each country has its own intelligence structures that must collect data and information, analyze and transform them into valuable knowledge for the decision-makers. The methods and means used by these intelligence structures for conducting specific activities are mainly secret and classified. This paper represents a literature review regarding the possible links and connections between national security intelligence, business intelligence, and competitive intelligence, aiming to discover the possible similarities between these concepts. We used the bibliometric analysis conducted with the specialized software VOSViewer to achieve this goal. This analysis was focused on the co-occurrence procedure using words and expressions from article titles, abstracts, and keywords. The databases used for this paper were retrieved from the Web of Science core collection, using the following expressions for searching: "business intelligence – competitive intelligence," "business intelligence - national security," and "competitive intelligence - national security." The results showed that no publications approach the differences between business, competitive, and national security intelligence.

Keywords

Bibliometric analysis; business intelligence; competitive intelligence; intelligence; national security intelligence

Introduction

Analyzing data, information, and knowledge to find the proper solutions for the problems and issues identified at individual, organizational, and national levels is called intelligence. Thus, intelligence represents the capacity to process data, information, and knowledge of special structures based on legislation and government strategies (Kent, 1949; Spender, 1996).

Referring to intelligence from an organizational and national point of view, we identified three main domains: business intelligence, competitive intelligence, and national security intelligence. Thus, private companies use business intelligence and competitive intelligence, while state-owned institutions act in the national security intelligence area. Thus, the main differences come from the goals, visions, strategies, management, and legislation of each of these intelligence structures.

Over the last decades, both researchers and practitioners developed business intelligence and competitive intelligence to provide the necessary knowledge to achieve a competitive advantage (Grant, 1996; Nonaka, 1994; Nonaka & Toyama, 2003; Porter, 1985; Zack, 1999). Also, from the national security point of view, Kent (1949) considered that the leaders of a nation must possess intelligence, also viewed as knowledge, to ensure its security and prosperity. Thus, it is generally accepted at both national security and business level that intelligence is a driving force for achieving competitive advantage in a specific field (Alnoukari & Hanano, 2017; Bratianu et al., 2021; Fleisher & Blenkhorn, 2001; Ivan, 2016; Jourdan et al., 2008; McGonagle, 2016; Rajnoha et al., 2016; Sjølen, 2017).

In this uncertain world, the most important assets needed to overcome all types of risks and threats from the external environment and vulnerabilities from the internal environment are intelligence and knowledge.

However, we identified a significant literature gap concerning the differences between business intelligence, competitive intelligence, and national security intelligence from a managerial point of view (Bratianu & Budeanu, 2023). Therefore, this research aims to analyze the literature to identify if any papers were published regarding the differences and connections between business intelligence, competitive intelligence, and national security intelligence.

Literature review

The literature has various points of view regarding business intelligence, competitive intelligence, and national security intelligence. However, all these ideas refer to processing data, information, and knowledge and its essential role in decision-making.

At the state level, national security represents the state of equilibrium and stability required for the state's existence and development, maintaining the national order, and compliance with human rights, freedoms, and duties (Law 51/1991 regarding Romania's national security). The United Kingdom's Security Sector Development Advisory Team gave an important point of view towards national security intelligence, considering it to be the knowledge processed using special analytical processes, which state leaders and policymakers later use to make the best decisions for the nation. Nevertheless, according to the United Kingdom's Security Sector Development Advisory Team, state actors developed national security to hide valuable information and knowledge from other states or third parties and, at the same time, to obtain such information using secret methods and means (Hannah et al., 2005).

In his work on national security intelligence, Kent (1949) proposed a triad of intelligence meanings, analyzing intelligence as the knowledge that is created, intelligence as the organization that creates it and intelligence as the activity that must

be taken to acquire it. Later on, Johnson (2010) proposed another set of meanings regarding intelligence, changing Kent's knowledge-organization-activity triad with his four significances of national security intelligence, as follows: information (what is created), process (what analytic tools are used), missions (what actions must be taken to obtain it), and organizations (what structures are conducting these activities). Given this, it can be concluded that national security intelligence is formed of several subsets of capabilities that include data gathering activities by specialized organizations, data and information processing, and knowledge dissemination towards the decision makers of a country to overcome all types of risks, threats, and vulnerabilities and to take proper actions for protecting and maintaining the national security.

To obtain national security intelligence, the specialized entities named intelligence structures carry out specific activities of collecting raw data, processing and analyzing it to create information and knowledge, and informing the legal beneficiary (MacGaffin & Oleson, 2016; Pili, 2018). These specific activities conducted by intelligence structures are classified. They are based on sources and methods, such as data collected from intercepted communications, espionage, satellites, surveillance, agent recruiting, secret communications, computer-based analytics, and open sources (Wirtz, 2010). Although these sources and methods are known to the general public, the intelligence structures keep their applicability and specific implementation secret.

Based on the origin of the data processed, intelligence is classified as follows: human source intelligence (HUMINT); open source (OSINT); measurement and signatures intelligence (MASINT); imagery intelligence (IMINT); signals intelligence (SIGINT) (Oleson, 2016). Reviewing the literature regarding competitive intelligence and business intelligence, it can be concluded that there is confusion between these two terms (Ivan, 2016). Although "business intelligence is an older term for competitive intelligence" (McGonagle, 2016, p. 371), these two types of activities are totally different, as their mission is oriented on different results. Thus, competitive intelligence is oriented to the external environment, while business intelligence is oriented to the internal environment (Alnoukari & Hanano, 2017).

Competitive intelligence's mission is to identify the external threats that could bring risks to the organization, as well as to create vulnerabilities in internal processes (Alnoukari & Hanano, 2017), and to legally identify competitors' weaknesses and strengths (Botos & Radu, 2017; Bratianu, 2002). Therefore, during the processes specific to competitive intelligence, the organization collects valuable information about the external environment and competitors to improve its performance (Fleisher, 2001). Nevertheless, high knowledge entropy and organizational intellectual capital are essential for achieving competitive intelligence (Bratianu, 2007, 2018).

Another confusion identified in the specialty literature is comparing competitive intelligence to business espionage (Fleisher & Blenkhorn, 2001; Ivan, 2016; McGonagle, 2016). Even if competitive intelligence is oriented to the external environment, its area of interest is public information from open sources, obtained in legal manners, in a legitimate, legal, and ethical way (Fleisher & Blenkhorn, 2001; Ivan, 2016). The data used in competitive intelligence activities is collected from websites, articles, interviews, press releases, speeches, annual reports, investment reports, financial statements, regulatory filings, analyst reports, alliance announcements, political reviews, patent filings, or customers (Fleisher & Blenkhorn, 2001). This

information is later processed using analytic tools, the results being used in the decision-making process for identifying the proper actions that need to be taken to gain competitive advantage. According to Alnoukari and Hanano (2017), the main targets for competitive intelligence are consumer behavior, customer segmentation, industry attractiveness, competitor comparison, and market development.

Business intelligence is internally oriented and can be seen as the specific activity conducted by a particular group of employees using a specific technology platform to obtain valuable information the decision-makers need (Skyrius, 2021). The main targets of business intelligence are identifying the best solutions for improving activity in certain fields, analyzing informational and material movement beneath the organization, and determining the possibility of improving interdepartmental activities (Ivan, 2016). Therefore, business intelligence activities focus on internal affairs such as market position, cost structure, value chain, core competencies, and value chain (Alnoukari & Hanano, 2017) and are based on advanced analytic tools (Botos & Radu, 2017). Thus, the main activity of business intelligence consists of data analysis to obtain information about internal indicators and performance, which helps the strategic management create the company objectives and strategies.

Given the statements presented above, it can be concluded that national security intelligence, competitive intelligence, and business intelligence are different in terms of objectives, sources, and methods, and, therefore, there are specific challenges for managers regarding each type of activity. The differences between national security intelligence, business intelligence, and competitive intelligence, from a managerial point of view and concerning the methods and sources, legal framework, analysis, planning, cost, beneficiaries, measurement, and organizational culture, were studied by Bratianu & Budeanu (2023), their conclusion being presented in the table beyond:

Table 1. The differences between national security intelligence, competitive intelligence, and business intelligence
(Source: Bratianu & Budeanu, 2023, p. 195)

Field	Differences	
	National security intelligence	Competitive/business intelligence
Methods and sources	Classified and secret	Open source
Legal framework	National security and classified information legislation	Internal regulations and contractual amendments
Analysis	Cognitive methods and hypotheses testing	Processing and shaping data for obtaining evaluations
Planning	Policy-maker/governmental level	Managerial team
Cost	No direct cost for beneficiaries	Direct cost for beneficiaries
Beneficiaries	Outside the organization	Inside the organization
Measurement	Cannot be quantified	Could be assimilated to

		profit and measured
Organizational culture	Quality-oriented	All types of organizational culture

Based on their research, Bratianu and Budeanu (2023) have shown that the managers from the national security intelligence structures face different challenges than the ones from the private companies that use competitive intelligence and business intelligence. Therefore, the main difference comes from the fact that the activity of the national security intelligence structures is classified as state secret, according to state laws, while the activity in business intelligence and competitive intelligence areas is regulated internally in the company.

Another important differentiator for a manager could be the beneficiary of the intelligence, respectively external beneficiaries for national security intelligence and internal beneficiaries for business intelligence and national security intelligence. Therefore, the manager of a national security intelligence structure must know enough about the beneficiary's interest in sensitive topics and his capacity to make good decisions with the information he receives. In this context, the manager of a national security intelligence agency needs to build relationships with all the legal beneficiaries and policymakers to know their lack of knowledge, their interest, and their focus on different topics at a certain time (Waltz, 2003).

Nevertheless, measurement differences for the outcome produced by national security intelligence, on the one hand, and business intelligence and competitive intelligence, on the other hand, should also be discussed. While the intelligence obtained in private companies using the described tools could be quantified and assimilated to profit, intelligence cannot be measured using conventional methods in the national security field.

Methodology

This research presents a bibliometric analysis of the literature concerning the publications from the competitive intelligence, business intelligence, and national security intelligence fields, using specialized software to visualize similarities in VOSviewer. This research is based on the co-occurrence investigation procedure, which aims to find the possible connections and similarities between article titles, abstracts, and keywords. The data used for conducting this research was retrieved on June 3, 2023, from the Web of Science core collection, the world's largest scientific abstract and citation database.

It is important to note that the search was conducted within "All Fields," using all the time ranges from the Web of Science core collection. The search in the Web of Science core collection was made using the following expressions: "business intelligence – competitive intelligence," "business intelligence - national security," and "competitive intelligence - national security" (see Table 2). For the following expressions, the search engine from the Web of Science core collection did not display any data: "business intelligence - national security intelligence," "competitive intelligence - national security intelligence," and "business intelligence - competitive intelligence - national security intelligence."

Table 2. Expressions used to retrieve database from Web of Science*(Source: Authors' own research results)*

Expression	Total number of publications	The first year of appearance
"business intelligence - competitive intelligence"	128	1997
"business intelligence - national security"	12	2002
"competitive intelligence - national security"	6	1998

As the search engine from Web of Science displayed all types of publications for the indicated expressions, the table below shows the number of different document types, such as *articles*, *proceeding papers*, and *other types of documents* (see Table 3).

Table 3. Types of documents from Web of Science database*(Source: Authors' own research results)*

Expression	Number of articles	Number of proceeding papers	Number of other types of documents
"business intelligence - competitive intelligence"	70	51	7
"business intelligence - national security"	6	5	1
"competitive intelligence - national security"	4	1	1

After the search was conducted using the credentials presented above, the databases were exported from the Web of Science core collection under the ".ris" extension with the "Full record" option. These raw data were processed and analyzed using VOSviewer to identify the co-occurrence of certain keywords within the chosen domains and generate a map based on the exported databases.

Results and discussion

This research aimed to identify if any papers were published regarding the semantic difference between business intelligence/competitive intelligence on one hand and national security intelligence on the other. Given the fact that the search engine from Web of Science core collection did not display any data for "business intelligence - national security intelligence," "competitive intelligence - national security intelligence," and "business intelligence - competitive intelligence - national security intelligence" keywords, the purpose of this research switched to the possible relationships between business intelligence, competitive intelligence, and national security. Given this motivation, this research analyses the three expressions that generated results in the Web of Science core collection search engine, respectively "business intelligence - competitive intelligence," "business intelligence - national security," and "competitive intelligence - national security," to identify any co-occurrence between this publications.

Using the 128 publications related to the “business intelligence – competitive intelligence” expression, VOSviewer generated 217 keywords, while only 17 met the threshold of a minimum of three occurrences, placing them in four clusters (Figure 1).

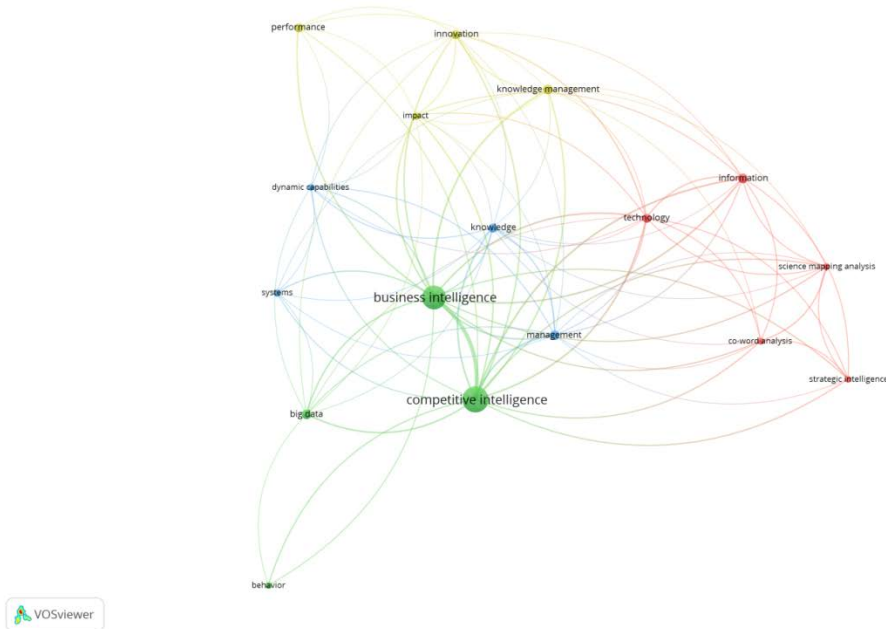


Figure 1. Keywords co-occurrence and the relationship between them for “business intelligence – competitive intelligence” expression with minimum three occurrences – VOSviewer

(Source: Authors’ own research results)

As we expected, the map generated by VOSviewer shows a strong correlation between “business intelligence” and “competitive intelligence,” proving that these two fields are related, as described earlier. These two domains were placed together in the green cluster, among “big data” and “behavior.” However, their position in the center of the map and the strong links with all the other clusters and keywords prove that these two domains are related and were researched together. The relevant information retrieved from VOSviewer is presented in Table 4.

Table 4. Keyword analysis for “business intelligence – competitive intelligence” expression

(Source: Authors’ own research results)

Keywords	Occurrences	Total link strength
behavior	3	6
big data	6	18
business intelligence	37	86
co-word analysis	3	18
competitive intelligence	44	88
dynamic capabilities	3	14

impact	4	20
information	6	27
innovation	5	21
knowledge	5	22
knowledge management	6	20
management	6	27
performance	5	10
science mapping analysis	3	18
strategic intelligence	3	15
systems	4	10
technology	5	30

Using the database retrieved from the Web of Science core collection for the "business intelligence - national security" expression, which includes 12 publications, 72 keywords were obtained, with none meeting the minimum threshold of three occurrences. Given this circumstance, the research was extended to the minimum threshold of 2 occurrences, generating six keywords divided into one cluster. Following this, we generated the map in VOSviewer using all 72 keywords, with only 31 being linked by the software and placed in 4 clusters, as seen in Figure 2.

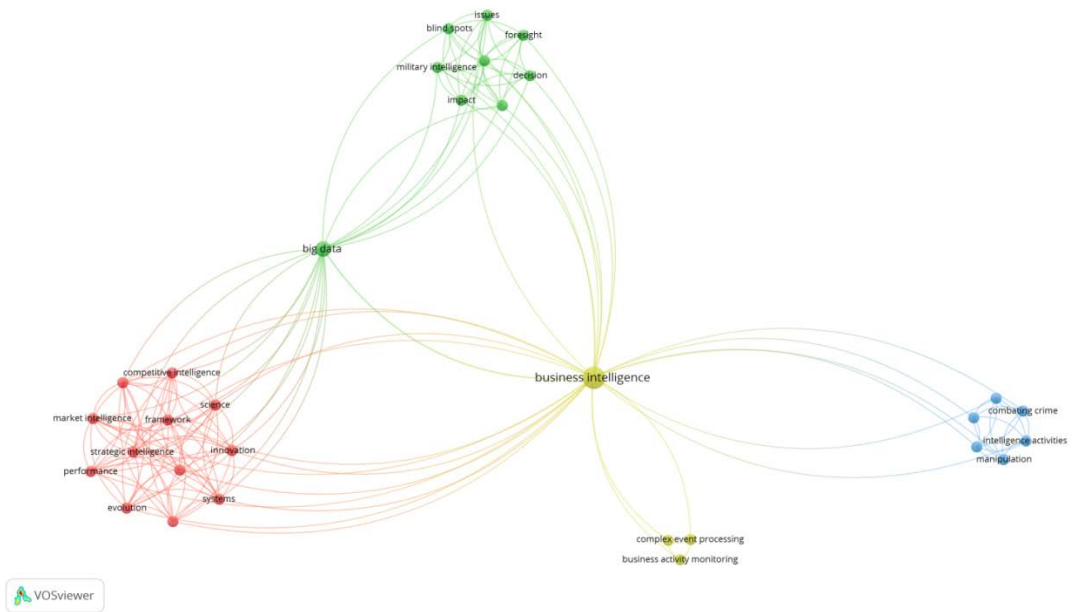


Figure 2. Keywords co-occurrence and the relationship between them for "business intelligence - national security" expression – VOSviewer
 (Source: Authors' own research results)

The keyword "business intelligence" is placed in the yellow cluster alongside "service-oriented architecture," "business activity monitoring," and "complex event processing," representing the publications that cover the business domain strictly. In the map's

center, the "business intelligence" keyword is linked with all the other clusters and keywords, with the red cluster also representing the innovation and business domain. It is interesting to see that "business intelligence" is linked with the green cluster, and especially with "military intelligence" (link strength: 1), which represents one publication that could have approached the possible relationship between these two fields. Also, "business intelligence" is linked with the blue cluster, which contains the following keywords: "criminality," "combating crime," "criminological intelligence," "simulacra," "manipulation," and "intelligence activities." This linkage between the keyword and the blue cluster represents one publication that covered a possible relationship between business intelligence and intelligence from the criminal field.

Extending this research, we identified the three possible articles that could have generated these links between the mentioned keywords respectively: "We Never Expected That: a comparative study of failures in national and business intelligence", a review by Krishnamurty (2022), "30 years of intelligence models in management and business: A bibliometric review" by Lopez-Robles, Otegi-Olaso, Porto Gomez, and Cobo (2019), and "Criminological Intelligence" by Kleymenov, Kleymenov, and Metelev (2019).

Going further, this research analyzes the "competitive intelligence – national security" database, which includes six publications. From the total of 34 keywords, only 5 met the minimum requirement of two occurrences. Given this circumstance, the research was extended to the minimum threshold of one occurrence, and the keywords were divided into 4 clusters (Figure 3).

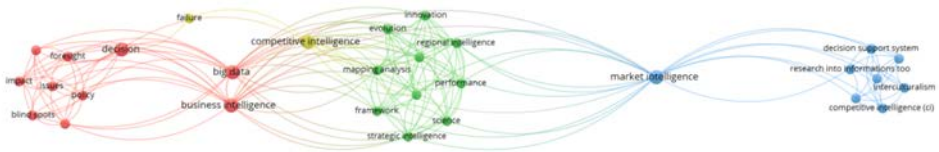


Figure 3. Keywords co-occurrence and the relationship between them for "competitive intelligence – national security" expression– VOSviewer
 (Source: Authors' own research results)

The majority of the keywords indicated in the map generated by VOSviewer are related to the business area, such as "market intelligence," "performance," "mapping analysis," or "innovation." However, a link indicates possible articles that connect the keyword "business intelligence" to "military intelligence." In this case, we identified the same possible article that was indicated above in the "business intelligence – national security" analysis, respectively "30 years of intelligence models in management and business: A bibliometric review" by Lopez-Robles, Otegi-Olaso, Porto Gomez, and Cobo (2019).

Conclusions

This paper primarily aimed to identify any publications (indexed in the Web of Science core collection) covering the differences between national security intelligence, business intelligence, and competitive intelligence. Therefore, this research focused on analyzing the databases retrieved from the Web of Science core collection and searching for the possible links and connections between these three concepts.

We can conclude that, after conducting this research, no publications cover the area of research regarding the differences between national security intelligence, business intelligence, and competitive intelligence, based on the journals indexed in the Web of Science core collection. Given this, I consider that these three domains should be researched together to determine the differences of these concepts that may look related, but are completely different based on their target and purpose. Nevertheless, I think these three domains should be researched together from a managerial point of view, starting from the article by Bratianu and Budeanu (2023).

Being the first bibliometric analysis that researched the main differences regarding national security intelligence, business intelligence, and competitive intelligence and showed that these domains were never researched together could be seen as the main contribution of this paper. Also, the fact that this research was conducted using only the databases retrieved from Web of Science core collections represents the main limitation of this paper. Therefore, in the future, our research should include databases from Scopus and Google Scholar to compare the outcomes.

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