JOURNAL OF MODERN SCIENCE
1/61/2025
www.jomswsge.com
DOI: 10.13166/jms/202340

MAGDALENA GIKIEWICZ
Fire University, Poland
ORCID iD: 0000-0002-4568-6750

SOCIAL RESILIENCE - RESEARCH RESULTS AND RECOMMENDATIONS

Abstract

Objectives: The purpose of the article is to present the declaration of the population in the context of building individual resilience in light of preparation for the occurrence of various types of threats, and to provide recommendations for further research on this issue.

Methods: To conduct the study, from the group of theoretical methods, analysis, synthesis, abstraction, comparison, generalization and inference were used. And from the group of empirical methods, the method used was a diagnostic survey using the survey technique, more specifically, the Computer Assisted Web Interviewing method, which was conducted from June to October 2024 on a representative group of the population of the Mazovian region.

Results: The survey showed that the population is poorly prepared for natural hazards, technical hazards, biological hazards, terrorist hazards and ICT network disruptions In addition, a low level of preparedness was classified by considering hazards caused by hybrid actions. It was observed that a small percentage of respondents prepare an evacuation backpack, and have low awareness of community initiatives in the context of building social resilience.

Conclusions: The results indicate the need to strengthen public resilience through comprehensive education, as well as raising awareness in the context of individual preparedness of the population for various threats. In addition, there is a need to better inform the public about available campaigns, training, courses, or tests of the public alert and warning system.

Keywords: *resilience, social resilience, preparedness, threats, awareness*

INTRODUCTION

The starting point for the analyses conducted in this article was a pilot study conducted from January to May 2024, on the topic of *Social resilience to threats in the perspective of the population declaration of the Mazovian province – a pilot study*. The results of this study have been accepted for publication in the yearbook *Scientific Notebooks Pro Publico Bono,* No.1 (1), 2024.

Another point was the definition of the concept of *resilience.* It was observed that the definition in the literature varies depending on the context and research perspective. For example, Huan Zhou and Jiangzhon Wang define resilience as an active process characterized by the ability to function

at a much higher level than expected, given past experiences and capabilities (Zhou, Wang, 2010, p. 21-41). In contrast, the definition cited by Bilal M. Ayyub describes resilience as the ability to prepare, resist and adapt to changing conditions and to recover quickly (Ayyub, 2013).

A common element in both definitions is the ability to adapt and cope with with challenges, but they differ in the details of how and to what extent this adaptation occurs. Thus, it can be said that resilience encompasses both the ability to survive difficult situations and the and the ability to use these experiences to achieve better results in the future. Resilience is also treated as a process that leads to a desired outcome by taking a number of actions and making changes that enhance a society's ability to confront threats. Thus, the huge role of society in building resilience is emphasized (Wojakowska, Gikiewicz, 2020).

Torgeir K. Haavik notes that resilience is an emerging field of research in the discipline of security studies. Based on the growing interest in security in a social context and the natural continuation of the expanding scope of each phase of the *three ages of security*, social resilience is presented as the fourth age of security (Haavik, 2024), (Panfil, 2024 pp. 112).

Robert Rey, captures societal resilience as the development of civilian and military capabilities to hinder hostile actions. It is also one of the basic prerequisites for security, not only domestically, but also in the EU as well as in the allies (Rey, 2024).

Strengthening resilience is the responsibility and task of every state, and is becoming a key aspect of the security of the European Union and the North Atlantic Alliance (NATO). With the development of work on resilience in the international arena, it has been recognized that three domains should be included in the work in order to achieve full synergy in action.

The first domain is the public sector, including civil-military interaction. The second is public-private partnerships The third domain that makes up effective resilience is society, more specifically, its awareness of potential threats, its ability to respond adequately, its committed attitude in countering dangerous phenomena or trends.

At the national level, references to resilience are already found in the National Security Strategy of the Republic of Poland approved on May 12, 2020, where in the description of the security environment, there are references to the need to increase the resilience of the state and society.

These were developed in the chapter entitled State Resilience and Common Defense (National Security Strategy of the Republic of Poland, 2020). In addition, some elements related to resilience are included in the National Crisis Management Plan (National Crisis Management Plan Part A, B,(2021/2022). This concept of action is enshrined in the German Act on Civil Protection and Civil Defense of December 5, 2024. The Act defines societal resilience as the individual and collective ability of people to meet their basic needs, including through the possession of their own stocks of essential products, and their ability to cooperate with civil protection entities, as well as to acquire competences in the field of shaping risk awareness and prevention of risks and desirable behaviors in the event of risks (Act on Civil Protection and Civil Defense, 2024, art. 3. 6)).

In light of the above, the aim was to examine how the population declares its approach to building individual resilience in the context of preparing for various types of threats. The research problem formulated for the adopted research objective was: What is the population's preparedness for potential threats?

Research methods

The research methods, techniques and tools characteristic of the social sciences were used to conduct the study (Smolarkiewicz, Zych, 2022, p. 279-280). From the group of theoretical methods, analysis, synthesis, abstraction, comparison, generalization, and inference were used (Czupryński, Feltynowski, Kochańczyk, 2023), (Czupryński, Górnikiewicz, Kochańczyk, Kogut, 2024, pp. 156-178). From the group of empirical methods, the diagnostic survey method was used with the use of the questionnaire technique, and more precisely the *Computer Assisted Web Interviewing* method, which made it possible to obtain information from respondents via an electronic questionnaire.

The survey was conducted over a period of five months (from June to October 2024) in the Mazowieckie Voivodeship, considered the reference area in terms of the largest number of inhabitants. The survey was anonymous, gender-balanced and consisted of seven closed questions and one open question, starting with personal details and ending with thematic questions.

The questions focused on finding out about the population's preparedness for potential threats, which were defined on the basis of the Crisis Management Plan of the Mazowieckie Voivodeship (2023, pp. 9-94). In addition, the questionnaire was expanded to include questions about how to build individual resilience to threats and awareness of local initiatives to build social resilience. The questionnaire was made available electronically via a link (for residents).

In order to draw conclusions for the entire population of the study area, it was necessary to obtain representative survey statistics. To this end, the population size and minimum sample size were determined.

The population size (Górniak, Wachnicki, 2013, pp. 85) for the Mazowieckie Voivodeship, amounting to 5 510 527 people, was determined on the basis of data from the Central Statistical Office as of December 31, 2023. Then, the obtained population size was substituted into the formula for the minimum sample size (Smolarkiewicz, Zych, 2022, p. 281), with the following indicators:

- 95% confidence level,
- 0.5 fraction level,
- 4% maximum error.

Based on the calculations, the number 600 was determined as the minimum sample size. Between June and October 2024, an attempt was made to reach as many residents of the Mazowieckie Voivodeship as possible, exceeding the minimum sample size. As a result, 656 people took part in the survey, of which 259 (39%) were women, and 397 (61%) were men.

Results of research

Participants in the survey included people of different age ranges. The range was: < 18 years (50 people), 18-26 years (252 people), 27-35 years (88 people), > 36 years (266 people). As for the level of education, the majority of respondents declared higher education (350 people) – 53%, secondary education (231 people) – 35%, primary education (75 people) – 11%. The largest number of respondents were residents of a city with a population of up to 50 thousand – 44%, followed by residents of a city with a population

of over 500 thousand – 23%, cities with a population of 50 thousand to 150 thousand – 14%, from 150 thousand to 500 thousand population – 2%. In contrast, respondents living in rural areas accounted for 18%.

This paper presents the results of the survey, which allowed us to learn, the declarations of the population of the Mazowieckie Voivodeship in the context of preparation for threats caused by forces of nature, technical disasters, biological threats, threats of a terrorist nature, disruptions in the functioning of ICT networks and systems, as well as threats caused by hybrid actions. In addition, the survey provided insight into respondents' proclamations on how to build resilience to threats, as well as the initiatives being undertaken to build community resilience where they live.

With regard to questions on emergency preparedness, respondents answering could choose a response classified according to the following scale from 1 to 5, where 1 meant – no preparedness, 2 – basic preparedness, 3 – moderate preparedness, 4 – good preparedness, and 5 – meaning very well prepared.

The following is the respondents' declaration to the questions in the survey questionnaire.

Threats caused by forces of nature

Flooding: 43.3% of the population feels unprepared, 31.7% rate their preparation at level 2, and only 4.3% of respondents say they feel very well prepared.

Hurricane/strong winds: 30.9% of the population does not feel prepared, the largest number of people (35.5%) rate their preparation at level 2, and 4.3% think they are very well prepared.

Fire: 34.5% of the population is unprepared, 33.1% rate their preparedness at level 2, and 2.1% feel very well prepared.

Long-term drought/storm: 21.8% of the population does not feel prepared, 32.8% rate their preparedness at level 2, and 6.3% think they are very well prepared.

Intense snowfall/snowstorm or blizzard and severe cold: 21% of the population is not prepared, 32.5% rate their preparation at level 2, and 7.2% feel very prepared.

Landslide: Most people (57.3%) do not feel prepared, 20.4% rate their preparation at level 2, and 5.2% believe they are very well prepared (see Table 1).

Table 1. *Population declarations on preparation for risks caused by natural forces*

To what extent are you prepared for risks caused by natural forces?	1	2	3	4	5
Flooding	43,3%	31,7%	13%	7,8%	4,3%
Hurricane/strong winds	30,9%	35,5%	19,4%	9,9%	4,3%
Fire	34,5%	33,1%	24,7%	5,6%	2,1%
Prolonged drought/storm	21,8%	32,8%	27,9%	11,3%	6,3%
Intense snowfall/snowstorm or blizzard and severe frost	21%	32,5%	24,5%	14,8%	7,2%
Landslide	57,3%	20,4%	8,4%	8,7%	5,2%

Source: own study.

Technical disasters

Chemical contamination/environmental catastrophe: 63.1% of the population feel unprepared, 26.8% rate their preparedness at level 2, Only 2.4% feel very well prepared.

Radiation events: 66.6% of the population does not feel prepared, 24.4% rate their preparation at level 2, 2.4% feel very well prepared.

Construction disaster: 47.9% of the population is unprepared, 24.4% rate their preparedness at level 2, 1.8% feel very well prepared.

Road disaster: 31.6% of the population does not feel prepared, 21.6% rate their preparation at level 2, 3.5% think they are very well prepared.

Rail disaster: 50.3% of the population is unprepared, 20.6% rate their preparation at level 2, 4.7% feel very well prepared.

Aircraft accident: 57.3% of the population do not feel prepared, 28.4% rate their preparation at level 2, 2.0% think they are very well prepared.

IWT disaster: 58.1% of the population is not prepared, 23.3% rate their preparedness at level 2. 5.5% feel very well prepared.

Air pollution/smog: 22.7% of the population do not feel prepared, 26.1% rate their preparation at level 2. 8.2% think they are very well prepared.

Electricity failure/disruption: 23.6% of the population is not prepared, 27.1% rate their preparedness at level 2. 7.2% feel very prepared.

Failure/disruption of oil, oil products and natural gas supply system: 31.6% of the population does not feel prepared. 32.3% rate their preparedness at 2. 5.6% feel they are very well prepared (see Table 2).

Table 2. *Declarations of the population in terms of preparedness for technical disasters*

To what extent are you prepared for technical disasters?	1	2	3	4	5
Chemical contamination/environmental disaster	63,1%	26,8%	4,0%	3,7%	2,4%
Radiation events	66,6%	24,4%	3,8%	2,7%	2,4%
Construction disaster	47,9%	24,4%	18,8%	7,2%	1,8%
Road disaster	31,6%	21,6%	29,9%	13,4%	3,5%
Rail disaster	50,3%	20,6%	16,2%	8,2%	4,7%
Aircraft accident	57,3%	28,4%	8,1%	4,3%	2,0%
Inland shipping disaster	58,1%	23,3%	9,1%	4,0%	5,5%
Air pollution/smog	22,7%	26,1%	29,4%	13,6%	8,2%
Failure/disruption of electricity supply	23,6%	27,1%	22,1%	20,0%	7,2%
Failure/disruption of the oil, oil products and natural gas supply system	31,6%	32,3%	16,5%	14,0%	5,6%

Source: own study.

Biological hazards

Epidemiological threat: 22.4% of the public feels unprepared, 24.7% rate their preparedness at level 2, and 7.2% feel very well prepared.

Epizootics (infectious animal diseases): 45.0% of the population does not feel prepared, 25.5% rate their preparation at level 2, and 3% feel very well prepared.

Epiphytosis (plant infectious diseases): 46.5% of the public is unprepared, 28.2% rate their preparation at Level 2, and 2.7% feel very well prepared (see Table 3).

Table 3. *Population's declarations regarding preparedness for biological threats*

To what extent are you prepared for risks biological?	1	2	3	4	5
Epidemiological risk	22,4%	24,7%	28,7%	17,1%	7,2%
Epizootics (infectious diseases of animals)	45,0%	25,5%	20,0%	6,6%	3,0%
Epiphytosis (infectious diseases of plants)	46,5%	28,2%	18,9%	3,7%	2,7%

Source: own study.

Terrorist threats

Terrorist threat: 38% of the population feels unprepared, 33.1% rate their preparedness at level 2. Only 2.6% feel very well prepared (see Table 4).

Table 4. *Population's declarations on preparation for terrorist threats*

To what extent are you prepared for terrorist threats?	1	2	3	4	5
Terrorist threat	38,0%	33,1%	20,9%	5,5%	2,6%

Source: own study.

Disruptions in the functioning of ICT networks and systems

Disruption of ICT networks and systems: 25.8% of the population feels unprepared. 41.2% rate their preparation at level 2. 16.9% say they are prepared at level 3, 12% at level 4. And only 4.1% feel very well prepared (see Table 5).

Table 5. *Population's declarations on preparedness for disruptions to ICT networks and systems*

To what extent are you prepared for disruptions to your ICT networks and systems?	1	2	3	4	5
Disruptions in the operation of ICT networks and systems	25,8%	41,2%	16,9%	12%	4,1%

Source: own study.

Hybrid activities

On hybrid actions: 32.9% of the population feels that they are not prepared. 38.1% rate their preparation at level 2. 17.8% rate their preparation at level 3. 9.0% rate their preparation at level 4. Only 2.1% feel very prepared (see Table 6).

Table 6. *Population declarations on preparation for hybrid actions*

To what extent are you prepared for the threats posed by hybrid activities ?	1	2	3	4	5
Hybrid activities	32,9%	38,1%	17,8%	9,0%	2,1%

Source: own study.

The way to build individual immunity

The penultimate question asked respondents: *How do they build individual resilience to threats?* Respondents were able to give multiple answers to this question from a closed cafeteria, which included the following response options: by participating in safety training, by preparing an evacuation backpack, by learning foreign languages, by learning to shoot, by learning first aid. Individuals build resilience (47%) by participating in safety training. By preparing an evacuation backpack 10%. By learning foreign languages 23%. By learning to shoot, 8% declare, while 12% learn first aid (see Table 7).

Table 7. *Population declarations on how to build individual immunity*

The way to build individual immunity	% of respondents' answers
by participating in safety training	47%
by preparing an evacuation backpack	10%
through language learning	23%
by learning to shoot	8%
by learning first aid	12%

Source: own study.

Awareness of local initiatives building social resilience

The last question asked respondents *Are there initiatives in their place of residence that build social resilience?* The question was open-ended.

259 (39%) respondents answered that there are no resilience-building initiatives in their area. (53%) of respondents answered that they are not aware of such initiatives in their area that are aimed at building community resilience. Only (8%) – 50 respondents – said they were aware of initiatives being undertaken. In terms of initiatives undertaken, the most common response was information about conducting public campaigns in the form of posters in public places. There was also information about holding first aid courses and conducting tests of the public alert and warning system.

Conclusions

The analysis of the obtained research results allowed the following conclusions to be drawn, which, due to the size of the research sample, were considered representative:

1. **Preparation for natural hazards**: Most of the population rates their preparedness at a low level (1 or 2). The population feels least prepared for landslides, and most prepared for heavy snowfall, snow blizzards and severe cold.
2. **Technical disasters**: the population declares low level (1 or 2) preparation for these types of hazards. The population declares a lack of preparedness for radiation events, chemical contamination, environmental disasters, inland shipping and aviation accidents. However, they rate their preparation for air pollution/smog very high.
3. **Biohazards**: Respondents rate preparedness at a low level (1 or 2). They feel least prepared for infectious animal diseases (epiphytoses), and best for epidemiological threats.
4. **Terrorist threats**: 38% of the population assesses a lack of individual preparedness for such threats.

5. **Disruptions to ICT networks and systems**: Only 4.1% of respondents say they are very well prepared for disruptions to ICT networks and systems.
6. **Hybrid actions**: 71% of respondents report a low level of preparedness for threats from hybrid activities.
7. **Ways to build resilience**: The most popular ways to build resilience are participating in safety training (47%), learning foreign languages (23%) and learning first aid (12%). Only 10% of respondents prepare an evacuation backpack, and the fewest (8%) say they learn to shoot.
8. **Awareness of social initiatives**: 53% of respondents are unaware of initiatives underway in the context of building social resilience. Only 8% of respondents are aware of social campaigns, first aid courses and tests of the public alert and warning system.

Considering the above results, the following observations were made:

- Low preparedness for natural hazards**,** points to the need for increased education and preparation measures, especially for less predictable hazards.
- The large lack of preparedness for technical disasters suggests the need for increased awareness and protective measures.
- Low preparedness for biological threats underscores the need for education and preventive measures in this area.
- Low preparedness for terrorist threats indicates the need for increased awareness and preparedness measures.
- Low preparedness for ICT network disruptions**:** emphasizes need for education in this area.
- Low preparedness for hybrid operations**:** suggests need for more preparatory measures.
- A small percentage of respondents are preparing an evacuation backpack or learning to shoot, which may indicate the need to promote ways to build resilience.
- Low awareness of community initiatives: More than half of those surveyed are unaware of initiatives underway in the context of building social resilience. This indicates the need to better inform the public about such initiatives.

The survey showed that the population is poorly prepared for various threats, highlighting the need for increased education and preparedness measures. Low preparedness for natural, technical, biological, terrorist and ICT disruptions indicates the need to take measures to increase awareness and protection in these areas.

Moreover, the low level of preparedness for hybrid operations and the low percentage of respondents preparing an evacuation backpack suggest the need to promote different ways and methods of building resilience. In addition, the low awareness of public initiatives in the context of building public resilience indicates the need to better inform the public about available campaigns, courses, or tests of the public alert and warning system.

The above observations and conclusions underscore the need for a comprehensive approach to educating and preparing the public for various threats to increase overall security and resilience.

Education is one of the most effective forms of preparing for and countering threats. Around the world, security topics have been introduced earlier and earlier into the process of upbringing and public education for many years. However, a prerequisite for the effectiveness of education is a systemic approach, i.e. one that would assume not only the earliest possible introduction of these issues into the curriculum of educational institutions, but also assume the continuation of this type of training throughout the educational period and the inclusion of adults already outside the process of school education (Grabowska-Lepczak, 2017, p. 8). Undoubtedly, the education of society should be a comprehensive activity, properly programmed, involving the interaction of many government institutions, local governments, non-governmental organizations (NGOs), services, and educational institutions and facilities. In this way, the programmed educational path will include all target groups (of all ages, from different backgrounds, etc.) and will use all forms of education (formal, informal, incidental and self-education) (Grabowska-Lepczak, Przybysz, 2021, p. 415).

In terms of initiatives to prepare for various threats. Some examples are cited below:

1. Sendai Framework for Action 2015-2030: Adopted at the Third UN World Conference in Sendai, Japan, this program aims to significantly reduce the number of fatalities and minimize the impact of disasters

on basic state processes. The program promotes disaster risk management through risk assessment, risk management planning and investment in disaster-resilient infrastructure (Sendai Framework for Disaster Risk Reduction 2015 – 2030).

2. The European Union's Security Union Strategy 2020-2025: This strategy focuses on promoting security in Europe by combating terrorism, organized crime, preventing hybrid threats and improving the resilience of critical infrastructure. As part of the strategy, the European Union is supporting member states in building a security ecosystem that encompasses both physical and digital environments (EU Security Union Strategy: all the pieces of the puzzle in the right place – a new security ecosystem).
3. A Resilient Society: This initiative, implemented by the Government Security Center, aims to ensure the continuity of government and key state processes, such as energy, water and food supplies, and the ability to respond to events with large numbers of casualties (Rey, 2024).
4. RCB Safety Academy: This initiative, implemented by the Government Security Center in cooperation with the Polish Radio, is a series of 12 advisories, the theme of each of which is a different threat (RCB Safety Academy).
5. Safe behavior guides prepared by the Government Security Center (RCB) provide practical tips on how to prepare for and respond to various emergencies. In addition to the guides, the RCB prepares infographics, animations and educational videos, which are available on their website and social media.

These initiatives show how, through various strategies and programs to spread knowledge and raise awareness (Ziobro, Gikiewicz, 2023), society's preparedness and resilience to various threats can be increased, but nevertheless this should be done in a systematic and systemic way, using all available forms of education.

This study provides a context for further, more detailed research on social resilience that would define and identify the key knowledge, skills, and behaviors required to operate effectively.

References

Ayyub, B. M. (2013). *Systems Resilience for Multihazard Environments: Definition, Metrics and Valuation for Decision Making*, *Risk Analysis* 34(2), DOI: 10.1111/risa.12093.

Czupryński, A., Feltynowski, M., Kochańczyk, R., (red. nauk.) (2023). *Metoda naukowa w badaniach bezpieczeństwa. Wybrane elementy*, Dąbrowa Górnicza, Wydawnictwo Naukowe Akademii WSB. ISBN: 978-83-67673-21-1

Czupryński, A., Górnikiewicz, M., Kochańczyk, R., Kogut, B. (2024). *Postrzeganie problemu badawczego w naukach o bezpieczeństwie*, *Journal of Modern Science*, nr 4(58), s.156-178, DOI: doi.org/10.13166/jms/192288

Górniak, J., Wachnicki, J. (2013). *Pierwsze kroki w analizie danych IBM SPSS STATISTICS*, Kraków, Predictive Solutions. ISBN: 978-83-912871-0-1

Grabowska-Lepczak, I, H., Przybysz, M. (2021). *Rola edukacji w zakresie kształtowania świadomości społeczeństwa na wypadek zagrożeń terrorystycznych*, *Journal of Modern Science*, nr 1(46), s. 211–233. DOI: 10.13166/JMS/138317

Grabowska-Lepczak, I. (2017). *Edukacja dla bezpieczeństwa. Aspekty teoretyczne i praktyczne*, Warszawa, Szkoła Główna Służby Pożarniczej, s. 8. ISBN: 9788388446894.

Haavik T., (2020). *Societal resilience – Clarifying the concept and upscaling the scope*, Safety Science Tom 132, https://www.sciencedirect.com/science/article/pii/S0925753520303611#fn1 (dostęp 11.02.2025)

Krajowy Plan Zarządzania Kryzysowego Część A (2022). Rządowe Centrum Bezpieczeństwa. Dostęp 01.02.2024 z https://www.gov.pl/web/rcb/krajowy-plan-zarzadzania-kryzysowego.

Krajowy Plan Zarządzania Kryzysowego Część B, (2022). Rządowe Centrum Bezpieczeństwa. Dostęp 01.02.2024 z https://www.gov.pl/web/rcb/krajowy-plan-zarzadzania-kryzysowego

Panfil R. B., (2024). Spójność i odporność społeczna – analiza współzależności z perspektywy nauk o bezpieczeństwie, Wiedza Obronna, Vol. 288 No. 3, s. 112. https://doi.org/110.34752/2024-3-8

Plan Zarządzania Kryzysowego Województwa Mazowieckiego. (2023). Mazowiecki Urząd Wojewódzki w Warszawie, Wydział Bezpieczeństwa i Zarządzania Kryzysowego, Warszawa.

Ustawa z dnia 5 grudnia 2024 r. o ochronie ludności i obronie cywilnej. Dz.U.2024.1907, tekst jednolity. Dostęp 11.02.2025 z https://isap.sejm.gov.pl/isap.nsf/download.xsp/WDU20240001907/T/D20241907L.pdf

Główny Urząd Statystyczny w Warszawie. Dostęp 1.06.2024 r. z https://demografia.stat.gov.pl/bazademografia/CustomSelectData.aspx?s=lud&y=2023&t=00

Ziobro, J., Gikiewicz, M. (2023). *Personalne determinanty bezpieczeństwa*, *Zeszyty Naukowe Pro Publico Bono* Nr 1(1). DOI: 10.5604/01.3001.0054.1718

Smolarkiewicz, M., Zych, P. (2022). *Ocena poziomu bezpieczeństwa w powiecie przysuskim w perspektywie ekspertów i społeczności lokalnej*, *Zeszyty Naukowe Pro Publico Bono*, Nr 1(1). DOI: 10.5604/01.3001.0016.1979

Strategia Bezpieczeństwa Narodowego Rzeczypospolitej Polskiej, Biuro Bezpieczeństwa Narodowego, (2020). Dostęp 01.02.2024 z https://www.bbn.gov.pl/ftp/dokumenty/Strategia_Bezpieczenstwa_Narodowego_RP_2020.pdf

Szafrańska, E., Szafrański, J. (2014). *Edukacja na rzecz bezpieczeństwa*, *Journal of Modern Science*, nr 21(2), s. 211–233. ISSN: 1734-2031.

Wojakowska, M., Gikiewicz, M., (red. nauk.) (2020). *Kultura bezpieczeństwa społeczności lokalnych*, Warszawa, Szkoła Główna Służby Pożarniczej. ISBN: 978-83-959134-0-2

Zhou H., Wang J., Wan J., Jia H., (2010). *Resilience to natural hazards: a geographic perspective, Natural Hazards* (53), s. 21-41. DOI:10.1007/s11069-009-9407-y

Online sources

Akademia Bezpieczeństwa RCB. Dostęp 5.06.2024 z https://www.gov.pl/web/rcb/akademia-bezpieczenstwa-rcb

Rey R., *Społeczeństwo odporne na zagrożenia*. Dostęp 01.02.2024 z https://www.gov.pl/web/rcb/spoleczenstwo-odporne-na-zagrozenia

Sendai Framework for Disaster Risk Reduction 2015 – 2030. Dostęp 5.06.2024 z https://www.undrr.org/media/16176/download?startDownload=20241007

Strategia UE w zakresie unii bezpieczeństwa: wszystkie elementy układanki we właściwym miejscu – nowy ekosystem bezpieczeństwa. Dostęp 5.06.2024 z https://ec.europa.eu/commission/presscorner/api/files/document/print/pl/ip_20_1379/IP_20_1379_PL.pdf