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Sense of Threat of Artificial Intelligence*

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Abstract
The fact that human existence is accompanied by a constant sense of uncertainty and threat is an intrinsic phenomenon thereof. This is because in addition to the 'old', apprehended and partly controlled threats, there appear some 'new' forms against which it is difficult to establish any procedures (Bonβ, 1995; Beck, 2002). One such aspect is, undoubtedly, the relation between humans and digital innovations including tools based on artificial intelligence. In order

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to contribute to this debate, an empirical study was designed the main objective of which is to determine the level of the sense of threat of AI. The method of diagnostic survey was employed to design a survey questionnaire. The survey was conducted in 2024 and included a random sample of 310 participants from Poland. The findings presented in this paper indicate that both socio-demographic factors (i.e. sex, age, education, and social and occupational status) and individual factors (i.e. frequency of AI use, assessment of the level of knowledge about AI, and assessment of level of AI skills) have an impact on the level of the sense of threat of AI. In the cognitive domain, women experienced a higher sense of threat of AI than men. The level of concerns regarding AI in the cognitive domain is reduced with the age and education level of the respondents. The study has shown that more frequent use of AI is associated with a decrease in in the cognitive and psychosocial domains. The sense of threat of AI also decreases with increasing level of the participants' self-assessed AI awareness and their skills in using AI tools.

Keywords: sense of threat, artificial intelligence, AI development, AI awareness.

Sense of threat in theoretical and empirical perspectives

A sense of threat has accompanied man since the dawn of time and is not unfamiliar in the world today, either. The advancement of technology and the development of civilisation is proceeding at a rapid pace, presenting man with ever new challenges, and often exceeding his resources and capabilities. A sense of threat is a construct that is widely discussed in the academic community. Presented below are selected concepts and definitions characterising this complex phenomenon.

Threat can be understood as a destructive factor for an individual, affecting them directly or indirectly (Wolska-Zogata, 2018, p. 38). This is because as a result of a threat, individual values, such as health, life, property, rights, position, opinions, well-being of the loved ones, etc. may be violated. Threat leads a person to experience the situation as difficult, implying failure and defeat. They react to such situations with emotions, attempts to defend themselves, frustration, stress or crisis (Niewiadomska & Chwaszcz, 2010, p. 138). According to Zofia Ratajczak, a threat is 'a sudden increase in the likelihood of harm or loss, which is equivalent to a worsening of a person's previous situation in any respect. Shock is the result of the occurrence of a sudden change with highly negative consequences for the individual (typically, values such as life and health are mentioned, but the classification of threats should be linked to the classification of recognised, desired and pursued values)' (Ratajczak,

2014, p. 10). A threat can occur with a delay, and the mere anticipation of it has a negative impact on a person. Moreover, it can occur at any stage of life and in all areas of life (Mamcarz et al., 2012, p. 14).

Threat is associated with a subjective feeling (sense) thereof. It is a mechanism closely related to the course of human cognitive processes, including perception, thinking, attention and memory. The feeling of threat is the result of experiencing fears about real or potential dangers. It is associated with negative emotions and cognitive appraisal, including image content, attribution and retrospection. The situation is assessed, which produces physiological and psychological effects and involves taking a specific action. A person analyses the environment, seeking the information they need to evaluate it. This requires the participation of attention. Thanks to its selectivity, information of value is selected from the environment and unnecessary information is omitted. Cognitive operations are then performed, including transformation, reduction, reinforcement, recall, etc. (Mamcarz et al., 2012, pp. 17–18). In these processes, the context of the situation itself and the availability of all information are important. Threat assessment is therefore dependent on a person's cognitive processes and cognitive structures, including: knowledge, schemas, constructs, etc. (Mamcarz et al., 2012, p. 19).

Threat is inextricably linked with its opposite pole, namely security. According to Ryszard Bera, a sense of security is 'a certain state of the individual or group, which does not contain threats to the duration, stability and development of these entities while it gives them a sense of certainty and support from other people and from the legal system' (Bera, 2017, p. 13). It can also be understood as a process, one that is associated with permanent and dynamic changes, actions and determining factors. This process leads to achieving the desired state (Szczepanski, 2023, p. 30). Thus, a threat may arise when actions taken to achieve a state of security fail to lead to this goal.

In the literature one can find many classifications of threats that may be experienced by modern man. In their construct they refer to the surrounding reality and are divided into groups, sources and areas. There may be many reasons for feeling threatened, but a particular type among them concerns new and unpredictable situations (Wolska-Zogata, 2018, pp. 37–38). This is because a lack of knowledge leads to a sense of threat and a lack of possibility to realise oneself in various social situations (Marciniak, 2009, pp. 60–62).

In the cognitive appraisal of a situation, a person refers to cognitive schemas through which they find their way in the existing reality. New situations must be adjusted to these schemas or new schemas must be created through them. As long as this does not happen, there is a high probability of feeling threatened (assessing the situation as threatening).

The feeling of being in danger is related not only to a person's cognitive processes, but also to their feelings, emotions, experiences and behaviours. Anxiety and fear are inextricably linked with the experience of feeling threatened. Anxiety is associated with experiencing tension of an undetermined cause while fear is directed towards a specific object. They are joined by concerns, which are, in the case of anxiety, manifested in distorted thinking and perception. A sense of anxiety and insecurity can further increase the objective danger (Wolska-Zogata, 2018, p. 37). A sense of danger can also be combined with the experience of chronic stress (Marciniak, 2009, pp. 61–63). And experiencing stress has a negative impact on the ability to cope with a threatening situation (Niewiadomska & Chwaszcz, 2010, p. 138).

According to Robert Socha, 'important factors at the individual level that influence perceptions of safety [and thus threat – author's note] may also include such characteristics as age, sex, education and place of residence, as well as the individual's perception of policing and the system of justice, the level of threat awareness, etc.' (Socha, 2022, p. 76). These are important factors if only for the fact that individuals acquire new experiences as they go, create new cognitive patterns, develop their personality or new ways of dealing with difficult situations.

In the course of life, one constantly encounters situations that can trigger a sense of threat. On the one hand, the development of technology, civilisation, science, culture, etc. brings many positives, but on the other hand, it is fraught with many objective and subjective threats to man.

A sense of threat in the face of the development of artificial intelligence

In recent years, artificial intelligence (AI) has gained key importance in the technology industry and the term itself has become widely used. Nowadays, topics related to the use of artificial intelligence are entering other areas of

debate, e.g. those related to education in its broadest sense. The capabilities of artificial intelligence can amaze and delight, as well as cause concern. Situating artificial intelligence in the context of a sense of threat should begin with a brief overview of the history of AI.

Kaplan and Haenlein define artificial intelligence as 'a system's ability to correctly interpret external data, to learn from such data and to use those learnings to achieve specific goals and tasks through flexible adaptation' (Kaplan & Haenlein, 2019, p.17). Although the popularity of artificial intelligence has risen recently, the idea came to be much earlier. The term 'artificial intelligence' was officially introduced in 1956 by John McCarthy and Marvin Minsky who organised workshops and research aimed at bringing together scientists from different fields to create a new research area with the purpose of building machines capable of simulating human intelligence (Haenlein & Kaplan, 2019, p. 3).

The technology company Avicena considered the turning point in the development of artificial intelligence to be the creation and presentation of Generative Pre-trained Transformers (GPT) in 2018. The capabilities offered by the successive versions of GPT include generating coherent, contextually relevant and human-like text based on input prompts. The latest versions are additionally capable of performing a variety of natural language processing tasks, such as answering questions, writing essays, creating poetry and conducting conversations (Avicena, 2024).

Nowadays, researchers emphasise that the future of AI requires, above all, responsible development that will serve humans. There is a need to take care of security measures in such a way that artificial intelligence provides more opportunities for principled engagement with human wellbeing (Kumar & Kumar, 2024). Globally, regulations are being developed to guide the direction of AI. Renata Tomaszewska and Miroslaw Kowalski list examples of documents developed in the European Union. These include:

1. Recommendation of the Council on Artificial Intelligence (OECD, 2021);
2. Recommendations on the Ethics of Artificial Intelligence (UNESCO, 2021);
3. White Paper On Artificial Intelligence – A European approach to excellence and trust (European Commission, 2020) (Tomaszewska & Kowalski, 2024, p. 14).

It is also worth mentioning Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13th June 2024 laying down harmonised rules on artificial intelligence, which establishes a single legal framework for artificial intelligence in the European Union. Its primary aim is to improve the functioning of the internal market by regulating the development, marketing and use of AI systems. The document emphasises the importance of AI development being in line with EU values, promoting a trust-based and human-centred approach. At the same time, it ensures a high level of protection of health, safety and fundamental rights, such as democracy, rule of law and environmental protection.

The documents and the ongoing work on their development point to the need to develop a strategy for the use and development of AI while respecting the protection of privacy, including data collected by AI, and human dignity.

The development of artificial intelligence is the subject of intense public and academic debate. It is also increasingly becoming the subject of academic research. In this article, attention is drawn to the sense of threat in the face of the development of AI. It may concern different spheres and different types of artificial intelligence itself. Vasile Gherhes points to three types of artificial intelligence based on analyses of the work done by, among others, Kurzweil, Bostrom, and Pennachin and Goertzel. The first is narrow artificial intelligence that is designed to perform small tasks (e.g. facial recognition, searching for information on the internet, making online reservations, driving a car, etc.). The next one is general artificial intelligence, which refers to machines developed using AI that match the intelligence of humans and are capable of performing intellectual tasks. The last type is artificial superintelligence. It is the most advanced form of artificial intelligence, which would far surpass humans in almost every field, including scientific creativity or social skills. Humans seem to have accepted a certain amount of artificial intelligence and it no longer causes a sense of fear or threat. Concerns can still be caused by superintelligence, its progress and implementation into everyday life (Gherhes, 2018).

One of the areas where a sense of threat in the face of the development of artificial intelligence is identified is education. Researchers note that the development of artificial intelligence in education brings both great opportunities and challenges. Those that may feel threatened are teachers who may be

replaced, at least partially, by advanced AI systems in the education process. R. Tomaszewska and M. Kowalski note that 'the use of artificial intelligence in teaching processes requires raising the competence of educators in this area' (Tomaszewska & Kowalski, 2024, p. 16). Teachers feel anxious about e.g. the quality of education, including a lack of self-reliance among pupils in doing their work. As Sylwia Jaskuła notes, 'the implementation of artificial intelligence in education will undoubtedly refocus its current models. The contemporary education system, although constantly evolving, is relatively static. It prepares its participants for the current requirements of reality, unfortunately without anticipating it or designing future competences' (Jaskuła, 2023, pp. 21–22). It seems that a specific kind of help for the field of education is coming from education in itself. Only by learning about the possibilities of artificial intelligence will teachers be able to complement and support education while taking advantage of technological developments.

Concerns about the use of artificial intelligence also arise in the area of academic work, if only in the area of writing research articles, designing research or creating monographs. The possibility of using software that creates logical sentences may pose a kind of threat to the traditional form of creating scientific papers. In his article on academic papers created by artificial intelligence, Filip Nalaskowski conducts an experiment in which he asks ChatGPT to design a study on a selected topic. In response, he obtains, among other things, a study plan, research questions, a description of the research method and even suggestions for questions that the tool might include (Nalaskowski, 2023). The experiment ultimately demonstrates that it is the researcher that is the link responsible for the work being created. However, this raises questions about integrity and academic ethics, and reflection on the further development of artificial intelligence may raise concerns.

A sense of threat due to the development of AI may also have a different underlying cause. In research conducted by Gherhes in 2018, it was found that 56.7% of respondents believed that it would be possible in the future that some AI-equipped devices emerge and affect human relationships. Respondents were also concerned about international cyber-attacks (65.3%) and a declining number of jobs, and a third of them saw scenarios of economic crises due to the emergence and development of AI entities or devices (Gherhes, 2018). The results of the CDEI survey (2024) also show dominant negative feelings

towards artificial intelligence which respondents most often associated with 'terror' (423 responses), 'worry' (240 responses) and 'uncertainty' (209 responses). As many as 45% of respondents feared being fired from their jobs because of AI. Concerns also included the loss of human creativity and problem-solving skills (35%), loss of control over AI (34%), its use for cybercrime and terrorism (23%) and the spread of disinformation or 'fake news' (22%).

On the other hand, a representative survey conducted by the Polish Economic Institute on Poles' attitudes towards the digitalisation of public services and artificial intelligence shows that Poles are highly aware of AI (98.8%) and use its tools relatively frequently. More than half of the respondents believe that AI will bring more benefits than harm to society (51.1%). At the same time, 25% of respondents were convinced that the harm caused by AI would outweigh the benefits. The report shows that Poles have a lot of trust in AI. As many as 41% of the respondents are willing to rely on information provided by AI. Men (27.3%). are more optimistic about the potential benefits of AI compared with women (20.2%). Interestingly, women (21.4%) are more likely than men (17.9%) to express concerns about existential risks. Men (28.2%), on the other hand, are more likely than women (22.6%) to be concerned about dependence on technology, which may result in a decline of human skills and the ability to solve problems independently. The results presented also indicate that respondents from younger age groups (18–34) are more optimistic and more likely to see the benefits that AI can bring to society. Scepticism and uncertainty about the positive impact of AI increased along with the age of the respondents (Łukasik & Korgul, 2024).

It is also worth mentioning the study conducted by Agnieszka Franczyk and Anna Rajchel (2024, pp. 98–99) students' attitudes towards ChatGPT. Based on the study, it can be concluded that the field of study also has an impact on the perception of threat of AI. Science students strongly agree with the statements that the ChatGPT will facilitate the learning process ($M = 4.19$; $Me = 5$), speed up problem solving ($M = 4.39$; $Me = 5$) and positively influence learning efficiency ($M = 4.60$; $Me = 5$). The only opinion with which both groups agreed to a similar degree was the anticipation that the use of ChatGPT would increase unfairness in education.

In conclusion, it should be stated that the development of artificial intelligence may imply an increase in the sense of threat caused by it. Therefore,

research identifying the extent and magnitude of anxiety and concern about AI should be systematically designed and conducted. It is hard to disagree with the statement that this area is the 'most important conversation of our time' (Tegmark, 2017/2019, p. 37, after: Fortuna, 2021, p. 32).

Methodological assumptions of own study

Taking into account the validity of the theoretical assumptions outlined above, an empirical study was designed, the subject of which was the respondents' sense of threat of AI. The main research problem was: What is the level of the respondents' sense of threat of AI? It was further elaborated by the following specific problems:

1. What is the level of the respondents' sense of threat of AI?
2. What is the relation between assess own knowledge of AI and the level of the respondents' sense of threat of AI within the designated factors?
3. What is the relation between the sociodemographic factors (i.e. sex, age, education, and social and occupational status) and the level of the respondents' sense of threat of AI within the designated factors?

After the determination of the dependent variable (level of the sense of threat of AI) and the independent variables (sex, age, education, social and occupational status, frequency of AI use, level of AI awareness, and level of AI skills), the following research hypotheses were determined:

1. The more frequently the respondents use the AI, the lower their level of the sense of threat of AI.
2. The higher the level of self-assessed AI awareness, the lower the level of the sense of threat of AI.
3. The higher the level of self-assessed ability to use AI-based products/techniques, the lower the level of the sense of threat of AI.
4. Women are more likely than men to feel a higher level of the sense of threat of AI.
5. As the age of the respondents increases, the level of the sense of threat of AI increases.
6. As the educational level of the respondents increases, the level of the sense of threat of AI decreases.

7. Unemployed individuals show a higher level of the sense of threat than those who work or study, and studying individuals will have a lower level of the sense of threat than those working or unemployed.

In order to answer the questions formulated above and to verify the hypotheses, a survey was conducted in June and July 2024. There were 310 participants from Poland, of whom 221 were women and 89 were men, with age ranging from 16 to 60 years, varied social and occupational status (working $N = 193$, non-working $N = 11$, studying $N = 64$, studying and working $N = 42$). The sample selection was random.

The study was based on the diagnostic survey method. In addition to demographic questions, the survey questionnaire that was constructed also contained questions on the variables identified above. A 4-point Likert scale of 14 items was used to determine the level of the sense of threat. The content of the individual statements to be assessed was the result of an in-depth analysis of the available literature on the views and beliefs expressed about AI (e.g. Fortuna, 2021, 2024; Ogonowska, 2022). The selected statements that were included in the questionnaire were derived from a study published in 2024 by Agnieszka Franczyk and Anna Rajchel on students' attitudes towards ChatGPT in education (Franczyk & Rajchel, 2024).

In order to verify the research hypotheses, statistical analyses were performed using two statistical packages. The JASP (version 0.18.3) software was used for factor analysis while the other analyses were carried out using IBM SPSS Statistics version 29. To verify the indicators of threat of AI, CFA and EFA were performed and reliability was calculated using Cronbach's alpha. Pearson's r correlation analyses were conducted to check the relation between the variables and the indicators of threat of AI. The choice of parametric analysis was justified by the Likert scale used and the skewness and kurtosis not exceeding (George & Mallery, 2022). Cross-sex comparisons were based on the Mann-Whitney U test, and the non-parametric type of tests was justified by the inequality of the groups. In addition, comparisons according to educational and occupational activity were made using the Kruskal-Wallis test. In order to check the correlation of all the variables with the indicators of the sense of threat of AI, hierarchical linear regression analyses were performed using the insertion method.

Results

The specific research problems formed the basis for the presentation of the results. In order to determine the level of the respondents' sense of threat of AI and to check which factors would emerge from the items presented, a factor analysis (EFA) was performed using the minimum residual factor extraction method with promax rotation. Due to too low loadings (< 0.4) or cross-loadings of both items, four items were removed from the scale. Ultimately, the test identified three factors that were characterised by a satisfactory level of reliability. Factor I (threat of AI in the cognitive domain) and factor II (threat of AI in the psychosocial domain) indicated a negative attitude towards AI while the third factor (AI's potential) indicated a positive attitude towards AI. The three-factor model was confirmed by a confirmatory factor analysis ($\chi^2(69) = 130.34$; $p < 0.001$). Further analyses were based precisely on this designated three-factor model.

Table 1. Results of exploratory factor analysis, reliability analyses and descriptive statistics as well as correlations between the factors for threat of AI

Items	M	SD	Threat in domains		AI's potential	Discriminatory power
			cognitive	psychosocial		
1. Limits thinking and creativity	2.82	0.93	**0.666**	0.068	−0.000	0.647
2. Reduces intellectual independence	3.01	0.86	**0.822**	−0.046	0.045	0.702
3. Makes users cognitively lazy	3.04	0.89	**0.920**	−0.189	−0.024	0.724
4. Reduces effectiveness of learning	2.66	0.95	**0.640**	0.022	−0.072	0.628
5. Encourages dishonesty and plagiarism	2.98	0.94	**0.630**	−0.014	−0.013	0.588
6. Will eliminate many people from the labour market	2.89	0.87	**0.514**	0.202	0.075	0.533
7. May harm a human in the future	2.76	0.95	0.214	**0.526**	0.095	0.569
8. Will lead to the annihilation of mankind	2.10	0.99	−0.170	**0.990**	−0.033	0.784
9. Will exercise control over human lives	2.32	0.99	−0.093	**0.912**	0.004	0.761

Table 1 (continued)

Items	M	SD	Threat in domains		AI's potential	Discriminatory power
			cognitive	psychosocial		
10. Causes 'technological depression'	2.61	0.93	0.136	0.567	−0.103	0.605
11. It is an excellent work tool	2.73	0.84	0.165	−0.022	0.566	0.438
12. Increases learners' independence	2.19	0.93	−0.072	0.037	0.699	0.619
13. Should be used more often in education	2.34	0.91	−0.025	−0.038	0.800	0.683
14. Develops independence in the learning process	2.10	0.89	−0.197	0.005	0.635	0.590
Factor 1	17.40	4.12	–			
Factor 2	9.87	3.17	0.53***	–		
Factor 3	9.35	2.76	−0.28***	−0.20***	–	
Eigenvalue			5.13	2.13	1.52	
Cronbach's alpha			0.851	0.843	0.777	
Variance explained			22.6%	17.4%	13.7%	

Source: Own elaboration.

Further analyses aimed to test the relations between the sense of threat of AI and the sociodemographic variables (i.e. sex, age, education, social and occupational status) and the individual variables (i.e. frequency of AI use, self-assessed level of AI awareness, self-assessed level of AI skills). The results are presented in Table 2.

Table 2. Results of correlation and comparison analyses for the sense of threat of AI depending on the designated sociodemographic and individual variables

Variables		Threat in the cognitive domain	Threat in the psychosocial domain	AI's potential
Individual variables				
Frequency of use		−0.17**	−0.16**	0.31***
Self-assessed awareness		−0.12*	−0.15**	0.09
Self-assessed AI skills		-0.11	−0.15*	0.11
Sociodemographic variables				
Age		−0.15**	−0.03	0.11
Education		−0.13*	−0.06	0.09
Sex				
Women ($n = 221$)	*M* (*SD*)	17.80 (4.11)	10.04 (3.18)	9.27 (2.72)
	Me (*IQR*)	18.00 (6.00)	10.00 (4.00)	9.00 (3.00)
Men ($n = 89$)	*M* (*SD*)	16.39 (4.00)	9.12 (3.09)	9.56 (2.88)
	Me (*IQR*)	17.00 (6.00)	9.00 (4.00)	9.00 (3.00)
Occupational status				
Working ($n = 193$)	*M* (*SD*)	16.90 (4.14)	9.68 (3.00)	9.59 (2.67)
	Me (*IQR*)	17.00 (6.00)	9.00 (4.00)	9.00 (3.00)
Non-working ($n = 11$)	*M* (*SD*)	17.18 (4.07)	9.18 (4.12)	9.55 (3.14)
	Me (*IQR*)	17.00 (5.00)	7.00 (7.00)	9.00 (3.00)
Studying ($n = 64$)	*M* (*SD*)	18.59 (3.76)	9.73 (2.88)	8.45 (2.53)
	Me (*IQR*)	19.00 (5.00)	10.00 (5.00)	8.00 (4.00)
Studying and working ($n = 42$)	*M* (*SD*)	17.91 (4.26)	10.45 (4.03)	9.60 (3.22)
	Me (*IQR*)	19.00 (6.50)	10.50 (5.75)	9.00 (5.00)

Source: Own elaboration.

According to the data in the table above, it should be concluded that the analysis showed statistically significant relations between the frequency of IS use and the next three factors of the sense of threat of AI. This means that the more frequently the respondents use AI, the lower is their sense of threat in the cognitive and psychosocial domains and the more potential they see in AI-based tools. The analysis also showed that as respondents' self-assessment of their AI awareness increases, their sense of threat of AI in the first two domains decreases. Furthermore, the better the respondents assessed their own ability to use AI-based tools, the lower is their sense of threat of AI in the psychosocial domain.

In the next stage of the study, the relation between the sense of threat of AI and the sociodemographic variables of the respondents was tested. Both age and education co-varied only with the sense of threat of AI in the cognitive domain, meaning that the older the respondents or the higher their level of education, the lower their sense of threat of AI in the cognitive domain. In contrast, sex differentiated the level of the sense of threat of AI in the cognitive domain ($Z = -2.92$; $p = 0.003$; $\eta^2 = 0.03$) and in the psychosocial domain ($Z = -2.22$; $p = 0.027$; $\eta^2 = 0.02$), but not AI's potential ($Z = -0.59$; $p = 0.552$; $\eta^2 < 0.01$). Women displayed a stronger sense of threat in these two domains than men. Additionally, educational and occupational activity was a differentiating factor for the sense of threat of AI in the cognitive domain ($H(3) = 10.55$; $p = 0.014$; $\eta^2 = 0.03$) and for AI's potential ($H(3) = 8.88$; $p = 0.031$; $\eta^2 = 0.03$). Further, Dunn's post-hoc tests with the Bonferroni adjustment showed that differences were only observed between working-only and studying-only respondents. Working respondents were characterised by a lower sense of threat of AI in the cognitive domain and, in addition, gave a more positive assessment of AI's potential than studying respondents. No significant differences were observed for the sense of threat in the psychosocial domain ($H(3) = 2.19$; $p = 0.534$; $\eta^2 = 0.01$).

Discussion of results

Feeling threatened is an intrinsic part of the human experience. It is therefore not surprising that it forms the basis of various academic research projects. This present study investigated the sense of threat of artificial intelligence.

The analyses identified a three-factor model: Factor I – threat of AI in the cognitive domain and II – threat of AI in the psychosocial domain. Both were indicative of negative attitudes towards AI. The third factor concerned the potential of AI and was indicative of a positive attitude towards AI. Due to the factors that emerged, further analyses did not address the overall outcome of the assumptions made, but were based on the factors identified.

The study shows that education plays an important role in the context of the sense of threat of AI. The study also showed that more frequent use of AI by respondents is associated with a reduction in the sense of threat in the cognitive and psychosocial domains. This is therefore a confirmation of the first hypothesis adopted in the study, assuming that the more often the respondents use AI, the lower is their level of the sense of threat of it. In addition, the analysis showed that as the respondents' self-assessed AI awareness increases, their sense of threat of AI in the first two domains decreases, as assumed in the second hypothesis.

Respondents who use artificial intelligence more frequently perceived greater potential of AI-based tools. The third hypothesis assumed that the higher is the level of self-assessed AI skills, the lower is the level of the sense of threat of AI. Based on the factors identified, the study confirmed that the higher self-assessed AI skills, the lower the sense of threat of AI in the psychosocial domain. This may mean that respondents who are confident in their AI skills feel safer in the context of the impact of AI on their social lives. Thus, it is likely that a better understanding of the technology and having the skills to use it makes respondents less fearful of any negative consequences related to the AI development.

The next hypotheses related to sociodemographic factors (i.e. age, education, sex, and social and occupational status) that may be relevant to the respondents' sense of threat of AI. Age and education co-varied with the sense of threat in the cognitive domain. This means that as respondents' age or education level increases, concerns about AI in the cognitive domain are reduced. Presumably, respondents then feel more confident in the context of cognitive challenges associated with the use of AI. Sex, on the other hand, determined the level of the sense of threat in the cognitive domain, with women experiencing more sense of threat than men. The correlations demonstrated are consistent with the results of the study conducted by Krystian Łukasik

and Karolina Korgul (2024) which are presented in the theoretical part of this paper.

Moreover, a study by Stanislaw Mordwa published in 2016 presented the subjective sense of threat and defensive behaviours of residents of Lodz aged 60 and over. The study shows that women show a higher sense of threat than men; similarly, the lower the level of education, the higher the sense of threat (Mordwa, 2016, p. 109). Although the present study deals with different contexts of the sense of threat, it is interesting to note that in both of them sex and the level of education are relevant for the sense of uncertainty related to something that is not fully known. Furthermore, in 2022 Beata Mirucka et al. published a study conducted on adult Poles aged 18–65 and showing their psychological functioning in the COVID-19 pandemic, which can undoubtedly be considered both in terms of a situation of threat and a new situation. The authors of the study report that 'the youngest Poles (aged 18–25) had significantly higher mean scores in the variable of the sense of threat to life compared with people in the other three groups, which indicates the most intense emotional reaction to the situation of the threat of coronavirus' (Mirucka et al., 2022, p. 964).

Not without significance is the social and occupational status of the respondents. The analyses revealed differences between those only working and only studying. The working respondents felt less threatened by AI in the cognitive domain compared with the studying ones. This may be related to the different experiences of those already in the labour market and those only preparing to enter it. Those working may be more likely to encounter the practical application of technology, including AI, whereas those studying may be more focused on acquiring theoretical knowledge and less on using it in practice, which may result in a sense of threat. No significant differences were observed with regard to the sense of threat in the psychosocial domain.

The study points to the need for further exploration. The sense of threat of AI calls for an understanding of the mechanisms that contribute to its formation. In addition, there is value in focusing on developing strategies to support people who experience high levels of threat.

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