

LINGUISTIC READABILITY OF OCCUPATIONAL HEALTH AND SAFETY REGULATIONS

Grzegorz WLAŻŁAK^{1*}, Rafał Krzysztof MATUSIAK²

¹ Silesian University of Technology; grzegorz.wlazlak@polsl.pl, ORCID: 0000-0003-4371-9245

² University of Opole; rkmatusiak@gmail.com, ORCID: 0000-0001-5288-6016

* Correspondence author

Purpose: This study evaluates the readability and communicative effectiveness of Occupational Health and Safety (OHS/BHP) regulations as normative documents designed to protect employees' health and safety. It examines whether these documents fulfill their informational function for users with diverse educational and linguistic backgrounds and identifies linguistic features that affect comprehension.

Design/methodology/approach: The study adopts a mixed-methods approach combining quantitative readability assessment with qualitative linguistic analysis. A corpus of 40 authentic OHS regulations and instructions (approximately 85,000 words) from public administration, education, industry, logistics, and training sectors was analyzed. Readability was measured using the Jasnopsis tool, and corpus-based analysis in SketchEngine examined sentence length, nominalization, impersonal and modal constructions, terminological density, and document structure. The findings were evaluated in relation to plain language and Easy-to-Read (ETR) principles.

Findings: The results show that 75% of the analyzed documents were classified as “difficult” or “very difficult.” High sentence complexity, frequent nominalization, impersonal and modal constructions, and unexplained specialist terminology were associated with reduced comprehensibility. Many documents also lacked clear structural organization and explicit attribution of responsibility, limiting practical usability in workplace settings.

Research limitations/implications: The study is limited to Polish-language OHS documents and does not include direct user testing. Future research may incorporate experimental studies with employees or cross-linguistic comparisons to assess the relationship between readability and actual compliance.

Practical implications: The paper proposes editorial recommendations, including sentence simplification, clearer agency marking, reduced nominalization, and improved structural design. A model for linguistic audits of OHS documentation is also outlined.

Social implications: Improving the readability of OHS regulations may enhance workplace safety and support inclusive communication for linguistically diverse worker groups.

Originality/value: The study offers one of the few corpus-based analyses of OHS regulations from a linguistic perspective, demonstrating that readability constitutes an important dimension of institutional responsibility and risk management.

Keywords: Occupational Health and Safety (OHS) regulations, readability analysis, plain language in institutional communication.

Category of the paper: research paper.

1. Introduction

Contemporary societies increasingly emphasize the need to ensure occupational safety and protect employees' health in the workplace. Alongside the development of legal regulations, technological solutions, and organizational standards, the importance of effective institutional communication in occupational health and safety (OHS) has also increased. In this context, particular attention must be paid to normative documents such as OHS regulations.

It is generally assumed that the effectiveness of such documents depends not only on their compliance with binding legal provisions but, above all, on their linguistic accessibility and comprehensibility for end users. Employees to whom these regulations are addressed constitute a highly heterogeneous group in terms of educational background, linguistic competence, professional experience, and cognitive abilities. For this reason, OHS texts should be designed with due consideration for the actual needs and perceptual capacities of their intended recipients.

Although the present study focuses on a single, seemingly narrow category of documents, namely OHS regulations and instructions, its findings have considerably broader relevance. Issues such as poor readability, excessive formalization, overuse of specialist terminology, and communicative ambiguity are characteristic of many other forms of institutional communication, including administrative acts, internal regulations, training materials, and legal documentation. In this sense, the conclusions drawn from the analysis may serve as a point of departure for a broader reflection on the linguistic quality and functional effectiveness of official texts in Poland.

The comprehensibility of normative texts is not merely a matter of linguistic aesthetics or stylistic correctness; rather, it is a problem deeply embedded in social and legal practice. An unreadable regulation may lead to misunderstandings of duties, errors in task performance, and, consequently, real threats to employees' health and lives. From this perspective, readability becomes an element of risk management, a tool for shaping organizational culture, and an expression of institutional responsibility.

In light of the above, the study examines which linguistic and editorial features enhance the effectiveness of OHS regulations and which hinder information reception. Do these documents adhere to the principles of plain language, or do they instead reproduce patterns of official administrative style that hinder communication with users? What role can linguistic and corpus-based analytical tools play in diagnosing and improving the quality of these documents?

In an era of digitalization, professional mobility, and multilingual work environments, the need to simplify and optimize written communication is no longer merely a technical editorial task, but also a broader civilizational challenge. In this sense, the present study contributes to the wider body of research on linguistic accessibility, public institutional accountability, and the communicative culture of a modern state governed by the rule of law.

Despite growing research on legal language, administrative discourse, and plain language initiatives, there remains limited systematic, corpus-based analysis of Polish Occupational Health and Safety regulations that integrates objective readability metrics with detailed structural linguistic examination. In particular, few studies examine how genre-constitutive features such as nominalization, deontic modality, and syntactic embedding correlate with measurable indicators of communicative load in workplace documentation.

To address the identified research gap, the study adopts a mixed-methods design combining quantitative readability assessment with qualitative linguistic analysis. A corpus of 40 authentic OHS regulations from diverse institutional and industrial contexts serves as the empirical basis for the investigation. Objective readability indicators are correlated with structural features characteristic of normative discourse, including nominalization, impersonal constructions, deontic modality, terminological density, and syntactic embedding. The study tests three main hypotheses. First, that the majority of OHS regulations exhibit high levels of linguistic difficulty according to standardized readability metrics. Second, that higher readability difficulty correlates with increased density of nominalization, modality, and clause complexity. Third, that clearer structural segmentation and explicit agency marking are associated with lower communicative load. By systematically linking quantitative measures with genre-based linguistic analysis, the study moves beyond purely descriptive readability scoring. Its novelty lies in integrating corpus-based methods with legal-linguistic reflection in the specific domain of workplace safety documentation. In doing so, the article contributes to ongoing debates on plain language, institutional accountability, and the balance between normative precision and communicative accessibility.

Although readability and plain-language approaches have been applied to various forms of institutional and legal communication, there remains limited systematic, corpus-based research on the readability of Polish-language Occupational Health and Safety (OHS/BHP) regulations as internal normative workplace documents. In particular, few studies combine objective readability metrics with a detailed linguistic diagnosis of genre-constitutive features such as nominalization, deontic modality, impersonal constructions, and terminological density across a sectorally diverse corpus. This study addresses this gap by integrating quantitative readability assessment (Jasnopsis) with corpus-based linguistic analysis (SketchEngine) of 40 authentic OHS documents, linking difficulty ratings to specific structural patterns and translating the findings into evidence-based recommendations for linguistic auditing and document design.

2. Literature Review

Occupational health and safety (OHS) is an interdisciplinary field that encompasses legal, technical, organizational, psychological, and social dimensions, all aimed at protecting employees' health and life in the workplace (Tokarski, 2018). Its core objective is to identify and minimize occupational risks by implementing appropriate procedures, training programs, technical safeguards, and internal organizational regulations. OHS thus serves not only a preventive function but also an educational one, shaping the awareness of both employees and employers regarding workplace hazards and safe conduct principles. For this reason, documents regulating activities in this area, most notably OHS regulations, play a crucial role, as they define procedures, obligations, and recommendations applicable in the workplace (Żurawiecka, 2019).

Amid rapid technological change and rising occupational mobility, ensuring an effective OHS system has become a particular challenge. OHS documentation, and regulations in particular, must not only comply with legal requirements but also be accessible and comprehensible to users, regardless of their educational background or linguistic competence. Within the Polish legal system, the Labour Code (Kodeks pracy) is the fundamental basis for OHS provisions. Article 207 assigns employers overall responsibility for occupational health and safety. This responsibility includes organizing work safely, eliminating hazards, providing training, and supplying personal protective equipment. In this context, documents such as OHS regulations serve as instruments for fulfilling the legal obligation to inform employees about risks and health protection principles.

In addition to the Labour Code, executive regulations, such as the Regulation of the Minister of Economy and Labour of 27 July 2004 on training in occupational health and safety (*Rozporządzenie Ministra Gospodarki i Pracy z dnia 27 lipca 2004 r. w sprawie szkolenia w dziedzinie bezpieczeństwa i higieny pracy*), play a significant role by specifying mandatory training forms and the content to be communicated to employees. These requirements are often reflected in internal regulations and workstation-specific instructions, which, as workplace documents, must remain consistent with higher-level legal acts. Although legislation does not precisely define the formal structure of OHS regulations, such documents are generally considered binding and may serve as a basis for enforcing employee responsibility, provided they have been made available and explained in a comprehensible manner (Łyszczarz, 2020). Otherwise, their effectiveness, both formal and practical, remains questionable.

From the perspective of text theory, OHS regulations are official texts with a normative function and also serve as utilitarian texts that convey instructions, obligations, and prohibitions governing specific workplace behaviors (Marcjanik, 2016). They are typically characterized by a formal style, lexical precision, a predominance of the declarative mood, and impersonal linguistic constructions. Their compositional structure is also distinctive, as such texts are

usually divided into chapters or sections addressing, for example, employee responsibilities, procedures in hazardous situations, and final provisions. While this organization can enhance functionality, it does so only if linguistic and logical clarity are maintained (Witosz, 2004).

A characteristic feature of OHS regulations is the frequent use of prescriptive formulas, including imperative, impersonal, and infinitival constructions (e.g., *należy*, *zabrania się*, *powinien*), which reinforce the authority of the message and express obligation (Bralczyk, 2001). These texts also commonly include specialist terminology and numerous references to legal acts, further complicating comprehension. Problems arise when the language of regulations does not match the competencies of their intended recipients. An excess of nominalizations, syntactically complex sentences, specialist terminology, and formalistic expressions may substantially reduce textual comprehensibility (Kondratczyk-Przybylska et al., 2016). Consequently, OHS regulations should be analyzed not only for content but also for their linguistic and communicative form.

The linguistic properties of OHS regulations directly determine their communicative effectiveness. Overly complex syntax, excessive nominalization, and rigid formalism may prevent these documents from fulfilling their informative function. This makes reflection on readability and functional clarity indispensable. The addressees of OHS regulations are employees with highly diverse occupational profiles, cognitive abilities, and educational levels. In many workplaces, employees include individuals without secondary education, older workers, persons with cognitive or linguistic limitations, and foreign workers with limited proficiency in Polish (Kołodziejek, 2012). For these groups, standard administrative language often poses a significant barrier to accessing information.

This diversity of recipients poses serious communication challenges. OHS regulations must be clear, unambiguous, and comprehensible while remaining legally compliant. Inappropriate language, insufficient explanations of complex terms, unclear document structure, or excessive technical jargon can lead to misunderstanding and, consequently, non-compliance. The mode of presentation itself is also problematic: OHS regulations are typically lengthy, formatted as dense blocks of text, and lack visual aids such as infographics or icons that could facilitate comprehension. As a result, many employees read them superficially or not at all, treating them merely as a formal employment requirement.

For this reason, increasing attention is being paid to simplifying institutional language through plain language initiatives and to applying easy-to-read principles. These approaches advocate simple syntactic structures, unambiguous vocabulary, short paragraphs, and transparent text organization (Kondratczyk-Przybylska et al., 2016). Their aim is not only to improve accessibility but, above all, to enhance communicative effectiveness. In the case of OHS regulations, this entails drafting documents that not only meet formal legal standards but are genuinely usable by their intended audience. Achieving this goal requires cooperation among specialists in labor law, occupational safety, linguistics, and communication studies. From the perspective of speech act theory and pragmatic analysis, OHS regulations perform

multiple linguistic functions, of which the informational, directive, phatic, and legitimizing functions are paramount (Grzegorzczkova, 2008). Excessive emphasis on formal or legalistic language may weaken the informational function and, in turn, reduce the overall effectiveness of the message.

In recent years, increasing scholarly and institutional attention has been devoted to the accessibility of legal and administrative texts, particularly in the context of public accountability and risk communication. The publication of ISO 24495-1:2023, *Plain language — Part 1: Governing principles and guidelines*, represents an important milestone in the standardization of plain language principles at the international level. The standard emphasizes clarity of structure, transparency of agency, reader-oriented organization, and cognitive accessibility, while explicitly acknowledging that simplification must not compromise legal precision.

Recent empirical research further supports the need to examine readability in legal and regulatory contexts. Martínez, Mollica, and Gibson (2023) demonstrate that simplified legal formulations can significantly improve comprehension without necessarily reducing perceived enforceability. Their findings suggest that legal precision and linguistic accessibility are not mutually exclusive, but rather require careful calibration. Similarly, systematic reviews of readability metrics in legal texts (e.g., Han, Ceross, Bergmann, 2024) highlight both the usefulness and the limitations of quantitative readability tools, stressing the importance of combining metric-based assessment with linguistic analysis.

In the Polish context, contemporary research on plain language in institutional communication has expanded significantly. Piekot (2021) proposes methodological frameworks for simplifying administrative documents while maintaining normative accuracy. Cieśla (2021) analyzes contemporary official texts in light of plain Polish principles, demonstrating structural barriers to comprehension in public documents. These studies indicate that institutional language reform requires both linguistic sensitivity and awareness of genre constraints.

Readability has also been examined in safety-related documentation. Ho and Tenkate (2024), in their study of Safety Data Sheets as hazard communication tools, show that excessive technical density and structural complexity may undermine effective risk communication. Their conclusions are particularly relevant to OHS documentation, where misunderstanding may have direct physical consequences.

Taken together, recent research (2020-2025) underscores the importance of balancing legal precision with communicative clarity, especially in documents addressed to heterogeneous user groups. However, there remains limited corpus-based research specifically focused on the linguistic and readability characteristics of Polish Occupational Health and Safety regulations. The present study contributes to this emerging field by integrating objective readability metrics with detailed structural analysis across a sector-diverse dataset.

3. Methods

This chapter aims to analyze the readability of Occupational Health and Safety (OHS) regulations, which are normative documents whose effectiveness depends on the comprehensibility of their message. The central focus is on whether OHS regulations fulfill their communicative function for employees with diverse linguistic and cognitive competencies.

The study addresses the following research questions:

1. What linguistic and stylistic structures characterize the selected OHS regulations?
2. According to objective readability measures, what level of difficulty do OHS regulations exhibit?
3. Which linguistic features reduce their comprehensibility (e.g., nominalization and syntactic complexity)?
4. To what extent do the analyzed documents comply with the principles of plain language and the Easy-to-Read (ETR) concept?
5. How can corpus-based analysis with the SketchEngine tool support research on the linguistic quality of regulatory documents?

The study involved collecting and analyzing 40 Occupational Health and Safety (OHS) regulations and instructions from various sectors of the economy and from different types of public and private institutions. The selection of texts was intended to capture a representative linguistic and communicative cross-section of regulations governing occupational health and safety.

The materials were obtained from publicly available online sources, including: (1) websites of municipal, local, and regional authorities (Public Information Bulletins) – 15 documents (e.g. *OHS Regulations of the Nadarzyn Municipal Office; Work and OHS Regulations of the City of Tarnów; OHS Instructions in a public nursery in Rybnik*); (2) schools and educational institutions (general secondary schools, technical schools, vocational schools) – 10 documents (e.g. *OHS Regulations of the Mechanical School Complex in Gorzów; Safety Rules for Physical Education Classes; Evacuation Instructions for Teachers and Students*); (3) enterprises and production facilities (logistics, industry, energy sector) – 15 documents (e.g. *OHS Regulations of the logistics company XPO Logistics; OHS Instructions for Forklift Operators (DHL Poland); Workplace Safety Instructions for Welders (Huta Pokój S.A.)*). The structure of the research material was as follows (Table 1):

Table 1.
Characteristics of the analyzed OHS document types

Document type	Number of texts	Average length	Lexical range
General OHS regulations	15	≈ 2500 words	general normative and statutory
Workstation-specific instructions	15	≈ 1800 words	technical, specialist
Emergency / evacuation procedures	10	≈ 900 words	warning-oriented, precise language

Source: own elaboration.

In total, the corpus comprised 40 texts, amounting to approximately 84,000 words (an average of 2,100 words per document). All documents were converted to TXT format and imported into the research environment (SketchEngine). The texts conformed to the formal scope of regulations or instructions, including a document title, statement of purpose, scope of application, descriptions of employee and employer responsibilities, procedures for specific situations (e.g., chemical hazards, fire, accidents), and, in many cases, annexes on personal protective equipment. Documents were selected according to the following criteria: (1) availability of the full text (not excerpts only), (2) currency (year of publication not earlier than 2015), (3) sectoral representativeness, and (4) diversity in editorial quality.

Each document was downloaded as a PDF or DOCX and then converted to TXT, preserving the original structure (headings, numbering, bullet points). The texts were then subjected to formal preprocessing, including the removal of personal data, signatures, and dates. The documents were organized and annotated with metadata specifying institution type, year, sector, text length, and source.

A dedicated working corpus was created in SketchEngine (Corpus_BHP_Readability_40docs). Morphosyntactic analysis was enabled using the UDPipe parser for Polish, and part-of-speech tags and lemmas were assigned. Analytical tools such as concordance, word sketch, collocations, and term extraction were applied.

An example of a research query is: [lemma="nalezy"] [tag="verb"], which enables the analysis of the most frequent modal patterns and formal collocations. All examples drawn from the Polish-language corpus of occupational health and safety regulations have been translated into English and provided in parentheses to ensure consistency with the language of the article.

4. Results

The quantitative analysis is based on six key textual parameters that influence the accessibility and comprehensibility of documents:

1. average sentence length (measured in number of words),
2. average word length (measured in number of letters),
3. difficulty classification according to the Jasnopis scale,
4. percentage share of sentences containing nominalization,

5. number of sentences with modal and impersonal constructions,
6. occurrence of specialist terminology.

The data were collected from 40 documents, which formed the research corpus. The texts originated in various sectors, including industry, logistics, public administration, education, and training.

The average sentence length in the analyzed corpus was 24.5 words, significantly exceeding the recommended level for instructional texts, as defined by the Polish Language Foundation as a maximum of 17 words per sentence (Kołodziejek, 2012). Only 4 of 40 documents (10%) met this standard, underscoring a problem with linguistic accessibility. The distribution of sentence length across sectors was as follows:

1. Industrial and logistics sectors: 26-29 words per sentence.
2. Public administration and education sectors: 22-25 words.
3. Training companies (some texts compliant with Easy-to-Read principles): an average of 18 words.

Excessively long sentences place a substantial burden on readers' working memory and hinder rapid comprehension of the intended message. Particularly problematic are multiple-clause sentences that include additional conditions, circumstantial modifiers, and formal qualifications. The longest sentences (exceeding 40 words) occurred primarily in official documents, regulations issued by public institutions, and internal directives of large industrial enterprises. Qualitative analysis identified numerous instances of sentences with unclear structure, composed of four or more subordinate clauses, that should be divided into separate statements.

Original example (45 words):

W przypadku konieczności przeprowadzenia ewakuacji z powodu wystąpienia zagrożenia pożarowego należy niezwłocznie poinformować odpowiednie służby ochrony zakładowej, a pracownicy powinni opuścić teren zagrożony zgodnie z planem ewakuacyjnym obowiązującym w danym obiekcie.

[In the event that evacuation is required due to the occurrence of a fire hazard, the appropriate internal emergency services should be notified immediately, and employees should leave the endangered area in accordance with the evacuation plan applicable to the facility.]

Simplified version (16 words):

Jeśli wybuchnie pożar: – Zadzwoń po służby ochrony. – Opuść budynek według planu ewakuacyjnego.

[If a fire breaks out: – Contact emergency services. – Leave the building according to the evacuation plan.]

The average word length in the analyzed corpus of Occupational Health and Safety (OHS) documents was 6.0 letters, exceeding the recommended threshold for instructional and general-purpose texts, typically estimated at 5.0-5.5 letters. A higher average word length indicates

a strong presence of specialist, formal, and technical vocabulary, a finding further confirmed by qualitative analysis.

The longest words occurred primarily in documents originating from industrial facilities and sanitary supervision institutions. Frequently recurring examples included terms such as: *eksploatacyjny* (operational), *zabezpieczający* (protective), *indywidualny* (individual), *narażeniowy* (exposure-related), *nadzorujący* (supervisory), *przystosowawczy* (adaptive), *kwalifikacyjny* (qualificational), and *ewakuacyjny* (evacuation-related). Recurrent specialist compounds were also identified, including expressions such as: *środki ochrony zbiorowej* (collective protective measures), *poziom narażenia zawodowego* (level of occupational exposure), *plan awaryjny ewakuacyjny* (emergency evacuation plan), and *kategoryzacja zagrożeń chemicznych* (chemical hazard categorization). Such constructions increase average word length at the corpus level, as corpus tools treat multi-word technical terms as syntagmatic units.

Document accessibility was further reduced by the lack of explanations for more complex expressions. Specifically, 89% of analyzed words with more than nine letters were neither defined in context nor accompanied by footnotes, glossaries, or other forms of linguistic support. This deficiency was particularly evident in legal and technical terminology. An example of a sentence containing long, specialist vocabulary is as follows:

Original example (45 words):

W przypadku stwierdzenia przekroczenia dopuszczalnych norm narażeniowych należy zastosować środki ochrony zbiorowej zgodnie z obowiązującymi procedurami oceny ryzyka zawodowego.

[In the event that permissible exposure limits are exceeded, collective protective measures should be applied in accordance with the applicable occupational risk assessment procedures.]

Simplified version:

Jeśli zagrożenie przekroczy dopuszczalny poziom, należy włączyć wspólne środki ochrony zgodnie z zasadami oceny ryzyka.

[If exposure exceeds the permissible level, collective protective measures should be activated in line with risk assessment rules.]

An assessment of the 40 regulatory documents using the Jasnopis readability scale shows that most are rated as very difficult or difficult. Fourteen texts (35%) were classified as very difficult, and a further sixteen documents (40%) fell into the difficult category, together accounting for three-quarters of the analyzed material. Only eight documents (20%) were rated at a medium level of difficulty, and only two texts (5%) were rated easy. These results indicate that the majority of the examined regulatory documents are likely to pose substantial comprehension challenges for non-expert readers.

Overall, 75% of the analyzed texts were at a level of difficulty that is inadequate for readers with primary or basic vocational education, that is, for a substantial proportion of manual workers. Such a degree of linguistic complexity is directly associated with the risk of misunderstanding key procedures and safety regulations.

Nominalization, the process of replacing verbs with deverbal nouns, poses a significant barrier for readers with lower linguistic competencies. The average number of nominalizations per document was 17.2, and in some cases their density exceeded 10 per page. Particularly high frequencies of nominalization were observed in legal and procedural documents, which were also characterized by the highest level of abstraction.

Original example:

Realizacja procedur ochronnych powinna następować z zachowaniem zasad obowiązujących w przepisach wewnętrznych. [The implementation of protective procedures should be carried out in compliance with the principles set out in internal regulations.]

Simplified version:

Pracownik powinien stosować zasady ochrony zgodnie z wewnętrznymi przepisami. [The employee should follow protective rules in accordance with internal regulations.]

Nominalization also reduced semantic clarity. In contexts where nominal constructions were used, the agent of the action was often unspecified, hindering clear attribution of responsibility.

In the analyzed corpus, an average of 52% of sentences were formulated in an impersonal or modal style, whereas in industrial and technical documents this proportion exceeded 65%. The most frequently used markers of deontic modality were: *należy* (*must / is required to*) (1,342 occurrences), *powinno się* (*should / ought to*) (884), *można* (*may / is allowed to / can*) (501), and *zabrania się* (*is prohibited / is forbidden / must not*) (479). The frequency of these forms correlated with the Jasnopis difficulty level: documents dominated by impersonal constructions achieved the highest readability difficulty scores.

Although impersonal forms and modal operators are characteristic of official administrative style, in the context of OHS instructions they do not facilitate effective communication. They hinder rapid comprehension of directives and may delay responses in emergency situations. From an editorial perspective, reducing their use in favor of clear constructions with explicitly identified agents (e.g., *operator* (*operator*), *supervisor* (*kierownik*), *pracownik* (*employee*)) is highly desirable. Supplementary analyses using SketchEngine revealed that only 18% of modal sentences contained an explicit reference to the responsible agent. The remaining 82% were impersonal, which may contribute to diminished accountability and reduced communicative effectiveness.

Only 8 of the 40 analyzed documents (20%) exhibited a clear, well-organized structure with a logical division into thematic sections. These documents featured explicit subheadings, well-structured bullet-point lists, hierarchical numbering, and graphic highlights (e.g., boxes, underlining, icons), which significantly improved readability and facilitated navigation.

The remaining 32 documents had an unclear, fragmented structure, dominated by long, dense blocks of text without clear segmentation. The most problematic features included:

1. the accumulation of multiple pieces of information in a single paragraph without prioritization,
2. the absence of typographic markers (e.g., bold type, italics),
3. the omission of discourse markers organizing the reading process,
4. the lack of operational headings that indicate the subject of a given section.

As a result, users experienced considerable difficulty quickly accessing information, particularly regarding emergency procedures and employee responsibilities. The absence of a transparent content layout led to the omission or misinterpretation of critical information.

Original example:

Ewakuację należy rozpocząć niezwłocznie po ogłoszeniu sygnału dźwiękowego, a pracownicy powinni kierować się do najbliższego wyjścia ewakuacyjnego zgodnie z zasadami ustalonymi przez kierownika obiektu, o ile nie zagraża to ich zdrowiu. [Evacuation should be initiated immediately after the alarm signal is announced, and employees should proceed to the nearest emergency exit in accordance with the rules established by the facility manager, provided that their health is not endangered.]

Simplified example:

UWAGA! W razie alarmu ewakuacyjnego: – Przerwij pracę. – Wyjdź najbliższym wyjściem ewakuacyjnym. – Słuchaj poleceń kierownika obiektu.

[WARNING! In the event of an evacuation alarm: – Stop work. – Use the nearest emergency exit. – Follow the instructions of the facility manager.

The analysis further demonstrated that documents prepared by private training companies, often compliant with Easy-to-Read (ETR) principles, more frequently incorporated visual elements such as pictograms, step-by-step tables, or infographics. By contrast, institutional and administrative documents almost entirely lacked such features.

5. Discussion

The analysis reveals a high level of linguistic and structural difficulty across the examined Occupational Health and Safety (OHS) regulations. According to the Jasnopis readability assessment, 75% of the texts were classified as difficult or very difficult, while only 5% were categorized as easy. Given that the primary users of these regulations often include manual workers and vocational school students, this level of complexity raises concerns regarding communicative accessibility in workplace contexts. These findings align with broader international discussions on institutional clarity and public accountability, particularly as

reflected in ISO 24495-1:2023, which emphasizes structural transparency, reader orientation, and cognitive accessibility while preserving legal precision.

From the perspective of legal linguistics, nominalization and impersonal deontic constructions are constitutive features of normative discourse. They enable abstraction, universality of obligation, and depersonalization of authority. In regulatory texts, such structures serve to generalize obligations beyond individual actors and ensure institutional continuity. However, recent empirical research suggests that legal precision and linguistic accessibility are not mutually exclusive. Martínez, Mollica, and Gibson (2023) demonstrate that simplified legal formulations can significantly improve comprehension without reducing perceived enforceability. This supports the view that genre-constitutive features need not automatically result in communicative opacity.

At the same time, the empirical findings of this study indicate that the analyzed OHS documents frequently display a level of linguistic density that may exceed what is required for normative precision. The accumulation of long multi-clause sentences, abstract nominal constructions, impersonal modality, and unexplained specialist terminology substantially increases cognitive load. Systematic reviews of readability metrics in legal texts (Han, Ceross, Bergmann, 2024) emphasize that quantitative indicators alone are insufficient but remain valuable when combined with structural linguistic analysis. The present study follows this integrative approach by correlating Jasnopis classifications with specific syntactic and lexical features.

This observation points to a structural tension between normative precision and communicative accessibility. The former demands stability and terminological consistency; the latter requires interpretability and manageable cognitive processing. Similar tensions have been identified in Polish plain language scholarship. Piekot (2021) argues that administrative simplification must preserve normative scope, while Cieśla (2021) demonstrates how structural density in official texts often impedes comprehension despite formal correctness. The present findings confirm that OHS regulations reproduce these broader institutional tendencies.

The communicative stakes are particularly high in safety-related documentation. Research on Safety Data Sheets (Ho, Tenkate, 2024) shows that excessive technical density may undermine effective hazard communication. In the context of OHS regulations, misunderstanding may have immediate physical consequences, reinforcing the need for calibrated optimization rather than indiscriminate simplification.

Within this framework, readability indicators such as those provided by Jasnopis should not be interpreted as absolute measures of textual dysfunction. Instead, they function as diagnostic tools signaling potential zones of communicative risk, consistent with international plain language standards (ISO 24495-1:2023). High difficulty ratings do not invalidate normative documents; however, they may indicate increased likelihood of misunderstanding in heterogeneous workplace environments.

The structural features identified in the analyzed corpus also correspond with earlier research on Polish legal and administrative discourse (Kondratczyk-Przybylska et al., 2016; Witosz, 2004; Kołodziejek, 2012), confirming the persistence of abstraction, depersonalization, and limited reader-oriented structuring. At the same time, by integrating objective readability metrics with corpus-based linguistic analysis across a sector-diverse dataset, the present study extends previous discussions beyond qualitative critique and provides a systematic empirical basis for evaluating communicative load in OHS documentation.

In sum, the study demonstrates that readability in OHS regulations should be understood not merely as a stylistic preference but as a dimension of institutional responsibility and risk management. Balancing legal precision with communicative accessibility requires calibrated linguistic design supported by both quantitative and qualitative evaluation methods.

6. Conclusions

Sentence length is a central indicator of readers' cognitive load, as overly information-dense sentences obscure meaning, reduce engagement, and increase the risk of misinterpretation. For this reason, reducing sentence length should be a priority when drafting occupational health and safety documentation. This can be achieved by limiting sentences to a maximum of two clauses, restructuring content into lists with clearly defined points and subpoints, supplementing text with graphic boxes that provide step-by-step instructions, and empirically testing simplified versions with representative users, such as manual workers or vocational school students. Sentence length should therefore be understood not merely as a syntactic feature but also as a strong predictor of comprehensibility; in workplace environments that require rapid interpretation and response, concise, unambiguous formulations substantially contribute to improved safety and operational efficiency.

Several measures are recommended to enhance the accessibility of occupational health and safety regulatory documents, including the use of shorter or less-technical equivalents of specialist terms wherever possible, the inclusion of glossaries in texts containing more than 10 complex terms, and the addition of parenthetical definitions or brief usage examples to support interpretation. Furthermore, systematic testing of document versions with individuals exhibiting lower linguistic competencies, using established comprehensibility assessment methods, should be incorporated into the drafting process. The implementation of these measures has the potential to substantially improve the accessibility and practical usability of OHS documentation for a broad and diverse range of employees.

These recommendations should be understood as calibrated optimization rather than the elimination of genre-constitutive legal features. Normative precision remains essential for enforceability and institutional consistency. Simplification efforts must therefore preserve legal

scope, conditional specificity, and clarity of obligation. In this context, a layered documentation model, combining a legally precise master version with operationally optimized summaries or task-oriented formats, may provide a balanced solution reconciling precision with accessibility.

The findings suggest that all newly drafted occupational health and safety documents be systematically verified using established readability tools, such as Jasnopis, and that their linguistic register be aligned with the intended users' actual language competencies. In addition, simplified document versions, including Easy-to-Read formats or concise operational summaries, should be considered to enhance accessibility. These measures should be complemented by pilot readability studies with representative end users, such as production workers, to empirically validate comprehensibility and ensure the practical effectiveness of OHS communication.

This paper argues for a standardized structure for occupational health and safety documentation, incorporating a title page with the document name and date, a table of contents or a clearly organized system of headings, and sections marked with consistent, transparent titles. In addition, the use of graphic highlights, including warning colors and safety symbols, as well as summaries or checklists at the end of individual sections, should be considered integral elements of the document design. The implementation of such solutions increases the likelihood that instructions will be effectively consulted and applied in hazardous situations and supports compliance with established guidelines on linguistic and informational accessibility.

The results indicate a clear need to continue efforts to improve communication in occupational safety and health. Potential directions for further research include comparative analyses of OHS regulations from other European Union countries (e.g., Germany, Sweden, and the Netherlands) regarding linguistic accessibility, as well as investigations into the impact of document readability on employees' actual compliance with safety rules, using experimental designs or survey-based methods. In addition, future studies may focus on developing automated tools to assess and revise OHS documents in accordance with plain language principles.

References

1. Bralczyk, J. (2001). *Język w mediach masowych*. Oficyna Wydawnicza.
2. Cieśla, B. (2021). Współczesne teksty urzędowe a zasady prostej polszczyzny. *Poznańskie Studia Polonistyczne. Seria Językoznawcza*, 28(1). Retrieved from: <https://doi.org/10.14746/pspsj.2021.28.1.2>
3. Grzegorzczkova, R. (2008). *Wprowadzenie do semantyki językoznawczej*. PWN.

4. Han, Y., Ceross, A., Bergmann, J.H.M. (2024). The use of readability metrics in legal text: A systematic literature review. *arXiv*. Retrieved from: <https://doi.org/10.48550/arxiv.2411.09497>
5. Ho, K., Tenkate, T. (2024). Safety data sheets as a hazard communication tool: An assessment of suitability and readability. *Safety and Health at Work*, 15(2). Retrieved from: <https://doi.org/10.1016/j.shaw.2024.01.006>
6. ISO 24495-1:2023 Plain language — Part 1: Governing principles and guidelines. International Organization for Standardization.
7. Kołodziejek, E. (2012). *Zrozumieć tekst – zrozumieć człowieka. O czytelności komunikatu w przestrzeni publicznej*. Wydawnictwo Naukowe Uniwersytetu Szczecińskiego.
8. Kondratczyk-Przybylska, D., Niewiadomski, A., Walewska, E. (Eds.), (2016). *Język polskiego prawa: nowe wyzwania*. Międzywydziałowe Koło Naukowe Kultury Języka Prawnego i Prawniczego Lingua Iuris.
9. Łyszczarz, M.A. (2020). Regulaminy pracy i BHP jako dokumenty organizacyjne zakładu. *Prawo Pracy*, 3, pp. 45-48.
10. Marcjanik, M. (2016). *Stylistyka polska. Wprowadzenie*. PWN.
11. Martínez, E., Mollica, F., Gibson, E. (2023). Even lawyers do not like legalese. *Proceedings of the National Academy of Sciences*, 120(23). Retrieved from: <https://doi.org/10.1073/pnas.2302672120>
12. Piekot, T. (2021). W poszukiwaniu uniwersalnej metody upraszczania pism urzędowych i decyzji administracyjnych. *Poznańskie Studia Polonistyczne. Seria Językoznawcza*, 28(1). Retrieved from: <https://doi.org/10.14746/pspsj.2021.28.1.8>
13. Rozporządzenie Ministra Gospodarki i Pracy z dnia 27 lipca 2004 r. w sprawie bezpieczeństwa i higieny pracy (Dz.U. 2004, Nr 180, poz. 1860).
14. Tokarski, R. (2018). *Bezpieczeństwo i higiena pracy. Zagadnienia podstawowe*. Difin.
15. Ustawa z dnia 26 czerwca 1974 r. – Kodeks pracy (Dz.U. 1974, Nr 24, poz. 141, z późn. zm.).
16. Witosz, B. (2004). O komunikacyjnej efektywności tekstów urzędowych. *Poradnik Językowy*, 7, pp. 3-16.
17. Żurawiecka, M. (2019). *System ochrony pracy w Polsce. Aspekty prawne i organizacyjne*. Wydawnictwo Uniwersytetu Jagiellońskiego.