


L. Vedenik, M. Lukežič, M. Mravlja, J. Šrekl, K. Petrič*

BIBLIOGRAPHIC RECORDS IN THE FIELD OF OCCUPATIONAL SAFETY AND HEALTH IN THE REPUBLIC OF SLOVENIA BETWEEN 1991 AND 2021

UDK 331.45:016](497.4)

RECEIVED: 2022-12-16

ACCEPTED: 2023-06-13

This work is licensed under a Creative Commons Attribution 4.0 International License 

SUMMARY: *The article presents activity of publishing scientific research papers, professional and other types of articles in the field of safety and health at work in the Republic of Slovenia in the period between 1991 and 2021. For the purposes of obtaining relevant data, we used the Slovenian library information system (COBISS). COBISS is intended for electronic management of bibliographies and the classification of works according to the UDK, which we processed with Office tools. The final goal of the paper is to present key findings about the scientific research and professional activity of the authors in the field of safety and health at work in the Republic of Slovenia. Through a bibliographic analysis with an emphasis on the typology of documents, we try to show the productivity of the authors in relation to their scientific, professional and other works in the field of safety and health at work.*

Key words: *analyses of bibliographic records, COBISS, occupational safety and health, Slovenia, UDC*

INTRODUCTION

The analysis of bibliographic records contributes to a better understanding of trends in the publication of different types of scientific and other articles in the field of occupational safety and health. This knowledge can be useful for different organised groups. In the field of research of bibliographic records, we can use a set of different management software tools.

Our analysis included bibliographic records from the fields of occupational safety and health

registered in the COBISS+ system (*Batis et al., 2012*), in the period between 1991 and 2021, with the aim of a scientific and professional review of the state of occupational safety and health in the Republic of Slovenia according to the typology of documents, which are intended for managing bibliographies in the COBISS+ system (*Batis et al., 2012*), with the possibility of reviewing the classification according to the Universal Decimal Classification (UDC) system (*Legat, 2002, Petrič et al., 2013*).

In the beginning of our research we observed there has not been much research in the field of bibliographic analysis in Slovenia. We have primarily relied on some of our own works (*Batis et al., 2012., Petrič et al., 2013, Šrekl et al. 2016, Vedenik et al. 2016*). In relation to the analysis of document typology, we recognised only a handful of research or short papers (*Bahor, 1995*) that did not survey the field of occupational safety and health.

*Leon Vedenik, MA of safety, (leon.vedenik@policija.si), Ministry of the Interior of the Republic of Slovenia, Police, Slovenia, Marjan Lukežič, MA of science in transport technology, (marjan.lukezic@ljubljana.si), Municipality of Ljubljana, Streliška cesta 14, 1000 Ljubljana, Slovenia, Matjaž Mravlja, spec. of police management, (matjaz.mravlja@policija.si), Ministry of the Interior of the Republic of Slovenia, Police, Slovenia, Jože Šrekl, retired prof., Ph.D., (Joze.Srekl@fkt.uni-lj.si), retired docent professor in the field of technical safety of University of Ljubljana, Faculty of Chemistry and Chemical Technology, Večna pot 113, 1000 Ljubljana, Slovenia, Karl Petrič, Ph.D., (karl.petric@gov.si), Ministry of the Interior of the Republic of Slovenia, Slovenia.

In modern science, scientific fields are covered, so there is a need to strengthen cooperation in research and development in the field of safety and health at work in the Republic of Slovenia. With such an approach, the profession will experience progress in the scientific and not only the professional field.

COBISS

COBISS (short for *Co-operative Online Bibliographic System & Services*, in Slovene *Kooperativni spletni bibliografski sistem in servisi*) is a Slovenian library information system developed by the Maribor Institute of Information Sciences (IZUM).

It is an organisational model of connecting libraries into the national library information system with mutual cataloguing, mutual bibliographic-catalogue database COBIB and local databases of participating libraries, database on COLIB libraries, normative database CONOR and many other sources and functions.

In addition to accessing these databases, Slovenian users of the system also have access to SGC, CORES and ELINKS databases and separate access to the following sources or databases, which are otherwise integrated into the COBISS system: JCR, SNIP, DOK / UKM and ZAL/ISBN. The COBISS system is being used by the library systems of Slovenia, Albania, Bosnia and Herzegovina, Bulgaria, North Macedonia, Serbia and Montenegro.

All these systems are connected to the COBISS.net network.

The COBISS+ web application and its mCOBISS mobile version are available to end-users to search for material in the databases of all libraries included in the national COBISS system (*Dodatna navodila za katalogizacijo bibliografskih enot, ki se upoštevajo pri vrednotenju raziskovalne uspešnosti, 2022, INSTITUT informacijskih znanosti Maribor, 2013*).

Typology of documents and works for managing bibliographies in cobiss system

The typology of documents can be defined as a numerical code system (from 1.01 to 3.25), which

classifies and marks publications such as articles and components, monographies, completed works and other works, which is intended for keeping bibliographies of authors in the COBISS system.

Bibliographic records in the COBISS system are created by qualified cataloguers/bibliographers in libraries and/or information documentation centres.

Articles and other components, monographies and other completed works are being processed on the basis of a primary document/work.

Implemented works (events) are recorded on the basis of appropriate evidence of implemented work.

If a publication is not available in the library, the author must provide it to the librarian.

Authors are primarily responsible for the correct classification of bibliographic units according to this typology, and the type of document/work can also be determined by an expert in the subject field (*INSTITUT informacijskih znanosti Maribor, 2013, Tipologija dokumentov/del za vodenje bibliografij v sistemu COBISS, 2022*).

Universal decimal classification (UDC)

The UDC is the world's foremost multilingual classification scheme for all fields of knowledge and a sophisticated indexing and retrieval tool.

It is a highly flexible classification system for all kinds of information in any medium. Because of its logical hierarchical arrangement and analytical-synthetic nature, it is suitable for physical organisation of collections as well as document browsing and searching.

The UDC is structured in such a way that new developments and new fields of knowledge can be readily incorporated.

The code itself is independent of any particular language or script (consisting of Arabic numerals and common punctuation marks), and the accompanying class descriptions have appeared in many translated versions.

The scheme is in worldwide use, and has been published in whole or in part in over 40 different

languages (see bibliography of UDC editions). It is used in bibliographic services, documentation centres and libraries in around 130 countries worldwide.

Library collections indexed by UDC can be found in library OPACs and databases (see information about larger collections).

The International Federation for Information and Documentation (FID) managed the UDC, from its creation around the year 1900 until 1992, when it became clear that a more broadly based and financially autonomous organisation was needed to administer and exploit UDC. FID, together with the publishers of the Dutch, English, French, Japanese and Spanish editions, became the founding members of a new body: the UDC Consortium (UDCC).

The Consortium assumed ownership of UDC on 1 January 1992 (*Univerzalna decimalna klasifikacija, 2022*).

The UDCC appoints the UDC Editorial Team and the UDC Advisory Board with international membership to oversee the content of UDC and contribute to its revision (*Univerzalna decimalna klasifikacija, 2022*).

The aim of the article is to develop key findings on the diversification of the typological system with emphasis on the scientific and professional field of occupational safety and health in the Republic of Slovenia and its appropriate systemic classification in the UDC.

METHODOLOGY

The survey was conducted in four steps, i.e.:

- determination of key words in the field of occupational safety and health on the basis of the applicable legislation before and after 1991 in the field of safety and health at work, as well as good practice of words provided by the profession;
- search of bibliographic works with the help of selected keywords in a command manner in the COBISS system from 1991 to 2021;
- processing of results or records using Office tools;

- processing and analysis of prepared data on the basis of frequency or percentage composition of publications by typologies of documents.

Determination of key words in the area of occupational safety and health

For the purpose of inquiries in a command manner according to the typologies of documents, the following 2 supporting and main key words/expressions are occupational safety and health and safety at work and 81 complementary words.

Here is an example of such a composite query by command:

PY=1991:2021 and CO=svn and TD=1.01 and (KW=occupational safety and health OR SU=occupational safety OR KW=safety at work) and (KW=occupational medicine OR KW=protection* OR KW=stress OR KW=health care* OR KW=fire safety OR KW=health care* OR KW=hospital* OR KW=illness* OR KW=injuries OR KW=analysis* OR SU=hazard* OR KW=threats OR KW=mobbing OR SU=mobbing OR KW=psychosocial violence OR SU=harassment* OR KW=maltreatment* OR 33KW=therapies OR KW=prevention OR KW=preven* OR KW=work* OR KW=ergonom* OR KW=electricity* OR KW=explosion* OR KW=economy* OR KW=inspect* OR KW=ministry* OR KW=vaccination OR KW=incidents OR KW=accidents OR KW=manager* OR KW=manage* OR KW=flammable* OR KW=construction* OR KW=organisation* OR KW=traffic* OR KW=police* OR KW=psychologist* OR KW=school* OR KW=sport* OR KW=finance* OR KW=measure* OR KW=public administration OR KW=hygiene* OR KW=humanise* OR KW=eco* OR KW=econom* OR KW=worker* OR KW=logistics* OR KW=industry* OR KW=company* OR KW=statist* OR KW=guideline* OR KW=standard* OR KW=promotion OR KW=material* OR KW=policy* OR KW=construct* OR KW=inform* OR KW=chemical* OR KW=permit* OR KW=music* OR KW=office* OR KW=violence* OR KW=direct* OR KW=access* OR KW=dive* OR KW=worlds* OR KW=COVID OR KW=profession* OR KW=known* OR KW=technologist* OR KW=corr* OR KW=curative*)

Analysis of bibliographical hits by typologies of documents

With the help of queries in a command manner with the emphasis on the typology of documents in

the public catalogue COBISS+ we obtained 4,798 (100 %) works, of which a typology was assigned to 3,860 (80.45 %) works, while to 938 works (19.55 %) no typology was assigned (Table 1).

Table 1. Percentage and frequency composition of publications based on the typology of documents

Tablica 1. Postotni i frekventni sastav publikacija prema tipologiji dokumenata

Typology of documents/works	Percent	Frequency
All publications	100	4798
Publications with unallocated typology	19,55	938
1.01 Original scientific article	1,83	88
1.02 Review article	0,44	21
1.03 Short scientific article	0,12	6
1.04 Professional article	10,23	491
1.05 Popular article	1,76	84
1.06 Published scientific conference contribution (invited lecture)	0,29	14
1.07 Published professional conference contribution (invited lecture)	0,29	14
1.08 Published scientific conference contribution	2,31	111
1.09 Published professional conference contribution	4,71	226
1.10 Published scientific conference contribution abstract (invited lecture)	0,02	1
1.12 Published scientific conference contribution abstract	0,46	22
1.13 Published professional conference contribution abstract	0,38	18
1.16 Independent scientific component part or a chapter in a monograph	0,4	19
1.17 Independent professional component part or a chapter in a monograph	0,67	32
1.18 Professional entry in dictionary, encyclopedia or lexicon	0,06	3
1.19 Review, book review, critique	0,27	13
1.20 Preface, editorial, afterword	0,48	23
1.21 Polemic, discussion, commentary	0,12	6
1.22 Interview	1,02	49
1.24 Bibliography, index, etc	0,02	1
1.25 Other components parts	2,27	109
2.01 Scientific monograph	0,15	7

2.02 Professional monograph	0,92	44
2.03 Reviewed university, higher education or higher vocational education textbook	0,52	25
2.04 Reviewed secondary and primary school textbook or other textbook	0,15	7
2.05 Other educational material	1,1	53
2.06 Dictionary, encyclopaedia, lexicon, manual, atlas, map	0,83	40
2.08 Doctorial dissertation	0,37	18
2.09 Master's thesis	3,63	174
2.10 Specialist thesis	0,15	7
2.11 Undergraduate thesis	37,89	1818
2.12 Final research report	1,48	71
2.13 Treatise, preliminary study, study	1,9	91
2.14 Project documentation (preliminary design, working design)	0,19	9
2.15 Expertise, arbitration decision	0,33	16
2.18 Scientific film, scientific sound or video publication	0,04	2
2.19 Radio or television broadcast, podcast, interview, press conference	0,04	2
2.20 Complete scientific database of research data	0,08	4
2.25 Other monograph and other completed works	1,38	66
2.30 Proceedings of professional or unreviewed scientific conference contributions	1,02	49
2.31 Proceedings of peer-reviewed scientific conference contributions (international and foreign conference)	0,06	3
2.32 Proceedings of peer-reviewed scientific conference contributions (domestic conference)	0,06	3

RESULTS

From the analysis of the results we have established that in the area of monographies diploma theses predominated. According to the typology from 2.01 to 2.05, there are 2.84 % or 136 works in total, which can be used as teaching material at various levels of the education system in the Republic of Slovenia. Primary (elementary education) and secondary (high-school education) are included in the share of 0.15 % or in 7 parts. At the level of tertiary education (university, higher education or higher education textbook with a review) there is a share of 0.52 % or 25 works.

An important share for the scientific development of the profession is represented by scientific monography with a share of 0.15 % or 7 works. The professional monography comprises a share of 0.92 % or 44 works.

From the obtained analysis we have also found out that professional articles predominated (10.23 % or 491 works).

We are establishing that publications with unassigned typology represent a very high part of the material, as it amounts to 19.55 % of all bibliographic units or 938 works.

Table 2. Content range of bibliographic units by UDC area between 2004 and 2016 from the conferences of the Faculty of Chemistry and Chemical Technology, University of Ljubljana**Tablica 2. Sadržaj bibliografskih jedinica po UDK području od 2004. do 2016. sa skupova Fakulteta za kemiju i kemijsko inženjerstvo Sveučilišta u Ljubljani**

UDC areas	Note
	Medicine. Occupational and sport medicine.
61	Accidents etc.
0	Librarianship. Informatics. Organization etc.
62	Engineering. Technology in general.
	Working environment. Working conditions.
331.4	Ergonomics etc.
34	Law. Jurisprudence etc.
351.78	Public safety
37	Education. Training etc.
54	Chemistry. Chemical technology etc.
159.9	Psychology
336	Finance. Financing etc.
351.81	Traffic safety. Traffic police
35	Public administration. Administration
53	Physics
33	Economics. Economy sciences etc.
32	Politics. Political sciences
502	Ecology. Environmental protection etc.
3	Social sciences. Sociology
7	Architecture. Urbanism. Sport etc.
8	Linguistics. Semantics etc.
9	Geography. History etc.
17	Ethics. Morale etc.
51	Mathematics. Natural sciences
311	Statistics
351.74	Police
343.3/7	Criminal acts. Criminality

Table 2 shows the content range of articles from the conferences of the Faculty of Chemistry and Chemical Technology of the University of Ljubljana from 2003 to 2014 by UDC area.

As seen from Table 2, the areas that were in connection with the sought field of occupational safety and health, such as occupational medicine (UDK 61), informatics, organisational science, management (UDK 0) and engineering, construction, electrical engineering, apparatus, materials, technology (UDK 62) are strongly predominant. In the group with a medium frequency there are for

example ergonomics (UDC 331.4), law and jurisprudence (UDK 34), topics in the field of public safety (UDK 351.), education / training (UDK 37), chemistry, chemical technology etc. (UDK 54), psychology (UDK 159.9), and finance / financing etc. (UDC 336).

The last group included topics from the following areas: traffic safety, public administration, physics, economics, politics, environmental protection, urbanism, sports, linguistics, geography, history, ethics, statistics, police and criminal acts / criminality (*Šrekl et al. 2016*).

Other findings

The typology of documents and works allows the classification of these works in order to create a hierarchy of works.

The highest in the hierarchy is the original scientific article (1.01), which publishes original scientific results. In the field of occupational safety and health, there are only 88 original scientific articles, which represents 1.83 % for the period from 1991 (from the independence of the Republic of Slovenia) to the present, that is the period of 30 years.

Most articles are professional articles (1.04), with 491 hits or 10.23 %. Papers that by typology exceeded one percent are published scientific papers at the conference (1.08); 111 or 2.31 % were published, published professional papers at the conference (1.09), of which 226 or 4.71 % were published, and other components (1.25), of which 109 or 2.27 % were published.

Among monographies and other completed works, the following stand out: diploma theses (2.11), which amounted to 1,818 or 37.89 %. There is a total of 51 scientific and professional monographies, which represents 1.07 % of published works.

The results also showed that as much as 19.55 % of all bibliographic units or 938 parts of publications with unassigned typology represent a very high part of the material. Why so many works with unassigned typology may be based on the assumption that the entries in the COBISS system were inaccurate or improperly entered according to the (non) existing typology.

We also have to consider the data that, according to the UDC, the field of safety and health at work is still a relatively young and not established scientific science if we compare it with medicine, for example.

We also estimate that we do not yet have sufficiently developed clear criteria for classifying scientific and professional works in the field of safety and health at work.

Our findings also show the breadth of the interdisciplinary field of safety and health at work,

as many other areas are included under the UDC area, such as the areas of medicine, librarianship, organisation, management, chemistry or engineering sciences, working environment, law and jurisprudence, public safety, education etc.

CONCLUSION

The analysis of bibliographic records based on the typology of documents is very important for it provides us with important knowledge about the composition of various types of scientific, professional and other publications, while the diversified field of safety and health at work by UDC tells us that this field is highly interdisciplinary.

According to the selected keywords and a certain typology, we obtained 4,798 (100 %) works using the command query on the COBISS+ public catalogue, of which a typology was assigned to 3,860 (80.45 %) works and to 938 works (19.55 %) typology was not assigned.

The predominant share of professional articles may also indicate the facts that they are easier to write and publish than original, transparent and short scientific articles.

There should be awareness of the fact that in the Republic of Slovenia original, transparent and short scientific articles are reviewed by doctors of science who have obtained their PhD in other fields, such as occupational medicine, transport and sports, chemistry and chemical technology, mechanical engineering, electrical engineering, construction and architecture, law, management, work organisation etc.

All these areas are connected to the area of occupational safety and health.

Furthermore, we note that the field of occupational safety and health is basically not properly defined terminologically and it is not harmonized with the UDC, as several derivatives are used to search for the field (e.g. occupational safety, safety at work, occupational safety and health as the main keyword) and thus makes it practically difficult to properly search for the field and/or works as well as system research in the COBISS system.

It can be concluded that the field of safety and health at work in both scientific and professional environment is a very attractive field for various experts, especially from other professional fields or other disciplines, as well as that the appropriate regulation of the field would be an even more important step forward scientifically and professionally, as it would be necessary to fully regulate and unify the profession.

The problem is mainly systemic, i.e. the lack of doctoral studies in the Republic of Slovenia in the field of occupational safety and health, since only with the highest academic level of academics the area of occupational safety and health could develop comprehensively and take a well-deserved place among other sciences in a comprehensive system of science. It is necessary to strive for the fact that it must be one of the leading forces of a comprehensive and even more important scientific field.

LITERATURE

Bahor, S.: Vrednotenje v znanosti in tipologija dokumenta, *Revija policija*, 15, 1995, 1-3, 157-165

Batis, R. & Petrič, K.: Analiza bibliografskih zapisov: primer nasilja na športnih prireditvah, *Uporabna informatika*, 20, 2012, 4, 250-258

Dodatna navodila za katalogizacijo bibliografskih enot, ki se upoštevajo pri vrednotenju raziskovalne uspešnosti. DOI: http://home.izum.si/cobiss/bibliografije/Dodatna_navodila_za_katalogizacijo.pdf

INSTITUT informacijskih znanosti Maribor, 2013. *Spletna aplikacija COBISS/OPAC*: -> citat: (INSTITUT informacijskih znanosti Maribor, 2013.) DOI: <http://cobiss.izum.si>

INSTITUT informacijskih znanosti Maribor. (2013). *Spletna aplikacija COBISS/OPAC*: 1997–

2022: *Prenos zapisov za osebno uporabo v formatu RIS*. DOI: <http://cobiss.izum.si>

Legat, D.: *Načela znanstvenega publiciranja in tipologija dokumentov v sistemu COBISS*. In *Razvoj visokošolskih knjižnic za univerzo 21. stoletja* : zbornik referatov, Centralna tehniška knjižnica, Ljubljana, 2002., 145-160.

Petrič, K., Mravlja, M., Petrič, T. & Rajkovič, V.: Primer analize bibliografskih zapisov s področja različnih vrst kriminalitete in povezanih tem, *Uporabna informatika*, 21, 2013, 3, 128-137

Šrekl, J., Petrič, K., Mravlja, M., Vedenik, L. & Lukežič, M.: *Analiza bibliografskih zapisov s področja varnosti in zdravja pri delu v obdobju 2003. do 2014*. Tradicionalni strokovni posvet o poklicni, procesni in požarni varnosti ter svečana akademija ob 50-letnici institucionalnega izobraževanja s področja varstva pri delu: dvodnevni posvet z mednarodno udeležbo, pp. 1-9, Portorož, 17.-18. 5., Fakulteta za kemijo in kemijsko tehnologijo, Katedra za poklicno, procesno in požarno varnost, Ljubljana, 2016.

Tipologija dokumentov/del za vodenje bibliografij v sistemu COBISS. DOI: http://home.izum.si/cobiss/bibliografije/tipologija_slv.pdf

Univerzalna decimalna klasifikacija. DOI: <https://udcsummary.info/php/index.php?lang=sl&pr=Y>

Univerzalna decimalna klasifikacija. DOI: <https://udcc.org/index.php>

Vedenik, L., Petrič, K. & Mravlja, M.: *Kronološki pregled strokovnih in znanstvenih del na področju varnosti in zdravja v policiji v obdobju med 1991 in 2015*. Prvi posvet o raziskovalni dejavnosti v policiji: zbornik prispevkov, Durić, D. (Ed.), pp. 145-160, Tacen, December 2016, Ministrstvo za notranje zadeve, Policija, Ljubljana, 2016.

**BIBLIOGRAFIJA RADOVA IZ PODRUČJA SIGURNOSTI NA RADU
I ZDRAVLJA U REPUBLICI SLOVENIJI OD 1991. DO 2021.**

SAŽETAK: Članak se bavi nastojanjem da se objave znanstveni članci, stručni i drugi članci iz područja sigurnosti i zaštite zdravlja na radu u Republici Sloveniji od 1991 do 2021. U svrhu dobivanja relevantnih podataka, korišten je slovenski informacijski sustav (COBISS). COBISS služi za elektroničko upravljanje bibliografijama i razvrstavanju radova prema UDK, obrađenih pomoću Office alata. Konačni je cilj članka predstaviti ključne rezultate znanstvenih istraživanja i stručnog rada autora iz područja sigurnosti i zaštite zdravlja na radu u Republici Sloveniji. Bibliografskom analizom s naglaskom na tipologiji dokumenata, pokušavamo prikazati produktivnost autora i njihov znanstveni, stručni i drugi rad na polju sigurnosti i zaštite zdravlja na radu.

Ključne riječi: *analize bibliografskih zapisa, COBISS, sigurnost i zaštita zdravlja na radu, Slovenija, UDK*

*Izvorni znanstveni rad
Primljeno: 16.12.2022.
Prihvaćeno: 13.6.2023.*