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BOOK CULTURE IN PUBLICATIONS OF THE NATIONAL ACADEMY OF SCIENCES OF UKRAINE: AN ATTEMPT OF QUALIMETRY ASSESSMENT

Introduction. Every year, the National Academy of Sciences of Ukraine (hereinafter referred to as “the NAS of Ukraine”) and its institutions issue near thousand book titles, but as few as, at most, 10% of them are published by professional publishing houses dealing with scholarly research literature. Therefore, a significant part of the scholarly research and publishing products of the NAS of Ukraine is prepared and issued without meeting the publishing and printing rules and standards, therefore it has low quality and informativeness.

Problem Statement. Despite significant achievements in the field of book culture, currently, there is no comprehensive system of indicators that would make it possible to quantitatively evaluate publishing products in terms of the preparation and production. Such a system can help detect the most frequent errors.

Purpose. The purpose of this research is to propose system and methodology for evaluating the book publishing and printing indexes based on the qualimetry approach.

Material and Methods. The qualitative approach has been used for creating a system of related and weighed separate indexes; mathematical methods have been employed for the evaluation of the results obtained. Publications of the NAS of Ukraine issued in 2019–2021 have been used as materials.

Results. An “indicator tree” has been developed; based on it, a book dossier for expert evaluation has been proposed; and 160 publications have been analyzed. This approach to scholarly research publications has been used for the first time in Ukraine. It has been established that the level of these scholarly research publications is generally satisfactory, with the printing quality being much better than the editing one. It has been found that while preparing texts, illustrative materials and layouts, the researchers neglect publishing standards, but pay for professional publishing services.

Conclusions. The new methodology has allowed quantitatively characterizing the general state of production of scholarly research and publishing products of the NAS of Ukraine and proven the inadequate level of their preparation. Identifying typical errors in the book preparation can become the basis for developing practical recommendations for the publishing bodies of the NAS of Ukraine in order to improve their products without involving significant additional resources.

Keywords: the NAS of Ukraine, book culture, scholarly research book, electronic publication, quality metrics, publishing standards, and quality of publication.

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From the open annotated catalogs of book publications of the National Academy of Sciences of Ukraine, which have existed since 2004, upon the initiative of the Scientific and Publishing Council of the National Academy of Sciences of Ukraine, it is known that the Academy and its institutions annually produce about thousand titles of scholarly research monographs and popular science books, reference books, encyclopedias, dictionaries, non-periodical collections of scholarly research papers [1]. However, as few as at most 10% of them are published by professional publishing houses dealing with scholarly research literature, mainly, by *Naukova Dumka* and *Akademperiodyka* Publishing Houses of the National Academy of Sciences of Ukraine. The number of publications has been to some extent affected by the armed aggression of the Russian Federation in 2014, but despite it, publications remain the main form of presenting scholarly research results to society and a means of informing the scholarly research community about new achievements. Unfortunately, a significant part of the scholarly research and publications of the Academy is prepared and published disregarding the publishing and printing rules and standards. Very often we observe violations of the specifications for the production of books, low quality of their production, i.e. low quality of printing and/or unsatisfactory level of bookbinding works, incorrect layout, illiterate computer typesetting, poor literary editing and proofreading works or their absence at all, etc. Neglecting the requirements for tables and atasheets and figures/ illustrations leads to the fact that this material loses its informative qualities, that is it does not contribute to a better understanding of the content, but on the contrary, makes the presented content less accessible. This, together with the unedited text, causes a decrease in the level of informativeness of the entire publication, i.e. worsens its communicative qualities. The mentioned characteristics directly belong to the sphere of book culture that is often forgotten when a researcher tries to report on the research done, to publish a monograph for defense or to complete a certain scholarly research project.

Book culture and books have long been studied by various experts abroad and in Ukraine. The known studies can be divided into the two main groups: the historical and the applied ones. The historical studies deal with the experience gained by mankind in the production of books, as well as the history of publishers and their repertoire. The applied studies deal with applicable basic principles of creating books. Despite the significant progress in book-making technologies (for instance, making a final paste-up (now is known as camera-ready) less than for a hundred years has overcome the path from painstaking manual work to computer layout and typesetting), the basic rules and parameters of book creation have remained the same or changed very slowly.

In this research, we skip discussing on which form is more likely to be used: the conventional paper or the electronic publication. We just note that, in accordance with the world trends in science and book publishing in general, the electronic books shall be prepared as professionally as the paper ones and be governed by the same standards and rules.

Why so? Because the book is a product. And as a product, it should be attractive to a potential consumer. Efforts spent on the selection, search, and purchase of a publication (or the opportunity to get acquainted with it) should not seem wasted to the consumer who wants to get information in a convenient way, so the book design should correspond to its content, the intended readership, and the purpose.

The rules or the specifications for the production of scholarly research, popular science, reference, artistic, and children's books are different. High-quality production means not only high-quality materials, impeccable printing and bookbinding works, but also professional artistic design, literary and technical editing. It is the lack of editing and careless copying, which make the book looking like self-published in the worst sense.

Another important aspect of the publication preparation is the presentation of the book content and the author's intention in such a way that

the book is as informative and communicative as possible in accordance with this intention. To this end, the selection and preparation of illustrative material (figures and tables), the formation of the publication references, and the design of the book structure are important. Book with the appearance and content, which correspond to the purpose and genre, cannot be published in a “cultural” manner, unless there is the author, the literary editor / proofreader, and the technical editor actively cooperate.

All these aspects of the book, which determine its consumer qualities, are intuitively evaluated by each reader in a few seconds. Therefore, an unprofessionally prepared and published book, even with the smartest content, may not find its readers and admirers.

Because of its specificity, scholarly research literature is easier to unify. At the same time, it is the most difficult type of publication for editorial preparation. The editing of scholarly research texts, the following types are distinguished: the technical, the structural, the literary, the stylistic, and the semantic editing [2]. Neglecting any of them leads to the degradation of the culture of the publication. The specificity of scholarly research literature is determined by its purpose that is presenting the results of research, targeted research programs and projects, reviews on specific problems, etc. That is, the scholarly research book represents an informative edition for specialists who are ready to accept this information.

The paradox is that it is not necessary for a researcher to be an expert in the subject of a book in order to evaluate the quality of its preparation from the point of view of informativeness. Every researcher knows that the clearer and simpler is the book structure, the more transparent is the presentation style, the shorter are the explanations to the text and the introduction and the more considerable are the conclusions, the better the author realizes the problem he/she is writing about and knows what thoughts he/she wants to convey to the reader. If a researcher wants to be understood, he shall write in a clear manner. Thus,

the requirements for unification, structure, and maximum informativeness are embedded in the very definition of scholarly research literature.

Is the book appearance important for such specific literature? Or the main thing is that what and how it is written, while how it is published does not matter?

The last decades of the 20th century have showed that the standardization is almost as important for publishing the scholarly research books as for publishing the mass reader books. Everything shall be standardized and normalized: scientific terminology and the placement of illustrations, the number of hyphens and the inadmissibility of hanged lines, the compilation of tables and bibliographic lists, the abbreviation of words and the references and citations. Failure to comply with the norms and standards makes the book unpleasant to read and inconvenient to use¹. DSTU ISO 9000-2015 *Quality Management Systems. Basic Regulations and Glossary of Terms* defines quality as the degree to which the totality of the product properties satisfies the requirements of customers, “the quality of products and services covers not only their intended functions and properties, but also their perceived value and benefit to the customer”.

The repertoire of books, the history of book publishing, and issues of book culture, their theoretical and applied aspects have been studied in Uk-

¹ See, for example: SOU 18.1-02477019-06:2015. Journals. Specifications (with amendment No. 1). — To replace SOU 22.2-02477019-06:2006, effective from 05.11.2015; SOU 18.1-02477019-09:2015. Edition. Publishing design and printing works. Quality indexes. — To replace SOU 22.2-02477019-09:2007, effective from 05.11.2015; SOU 18.1-02477019-14:2015. Book edition. Specifications. — To replace SOU 22.2-02477019-14:2009, effective from 05.11.2015; SOU 18.1-02477019-15:2015. Printing industry. Covers and bindings. Types. — To replace SOU 22.2-02477019-15:2010, effective from 05.11.2015; DSTU 8302:2015. Information and documentation. Bibliographic reference. General provisions and rules of drafting., valid from 07.01.2016; DSTU 3017:2015. Information and documentation. Edition. The main types. Terms and definitions of concepts, valid from 01.07.2016

raine for a long time, in many research institutions [3–18], in particular, the Institute of Bibliography of the Vernadsky National Library of Ukraine, the Ukrainian Academy of Printing, Ivan Fedorov Book Chamber of Ukraine, state university, Vasyl Stefanyk Lviv National Scientific Library, the Publishing and Printing Institute of Igor Sikorsky Kyiv Polytechnic Institute National Technical University of Ukraine. All these researches continue and develop the directions of studying publishing products, which were established in the 1920s by the Ukrainian Scientific Institute of Bibliography [11].

Thanks to these studies, the development of domestic book publishing and the progress of the art of book creation [7, 10, 11], as well as the role of books in social communication and modern interdisciplinary dialogue [3, 8, 13, 17] have been discussed; the theoretical problems of preparation of publications in the context of the growing demands of consumers for the quality and communicative convenience of products have been outlined; the importance of training highly qualified publishing professionals has been emphasized [9, 18]; the theory of editing regulations has been formulated; the methods for error control and correction have been classified [16]; the main trends in the book culture of the Independent of Ukraine have been analyzed; and the recommendations on the development of book culture as a culture of books, their distribution and reading in the conditions of the resistance to the armed aggression of the Russian Federation have been given [14].

The important role of state regulation in the publishing sphere for more effective introduction of innovations in the publishing and printing industry, i.e. its modernization, has been substantiated (e.g. [12]). The researchers consider the industry as a system with the author's environment, publishing structures, printing enterprises, book trade organizations, and the reader's environment as its elements [12, 8]. The current trends in the development of the industry system determine certain laws, out of which the law of accumulation of quality at each stage of operation is

important for our research. According to this law, at each stage of the production of the publication, its quality is added, thanks to which there is formed "the integral quality of product that meets the expectations of consumers and standards of reproduction" [12, 10]. At least it should be. It is necessary to unify the presentation of references: all of them shall contain either only the source [12], or the source with page numbers [12; 5].

All the mentioned researchers have agreed that book culture is a complex interdisciplinary concept, extremely important from the point of view of ensuring communication, educating the reader, forming the national information space, and promoting the national language and culture. Book culture is an important indicator of the life of society, its culture and collective consciousness, intellectual development, with the main indicators of the state of book culture being the technology and art of book production, as well as the prevalence of books and reading" [7, 9; 374]. Therefore, only book products of a high professional level, in which the content is harmoniously combined with the design, produced with the use of state-of-the-art equipment, given the current trends and information and communication technologies, can fully satisfy the requirements of the modern consumer for publications. The main function of the book is friendliness, that is, consumer suitability — the balance of content and means of its delivery to the consumer.

So far, no one has purposefully studied the modern scholarly research books prepared and published with the involvement of employees of institutions of the NAS of Ukraine from the point of view of consumer suitability. One can find qualitative assessments of domestic books, materials on the results of publishing contests, book ratings, readership surveys, and comments that the quality of books in general has been gradually improving, and the repertoire of books in the Ukrainian language in the country has been expanding. However, there have been no attempts to quantitatively assess the main publishing parameters of scholarly research books in Ukraine.

The purpose of this research is to develop a system of indicators and a methodology for qualimetry assessment of the level of book production in terms of publishing and printing qualities (without taking into account the content), compliance of books with applicable industrial standards and the global requirements. The main deliverable of the research is expected to be identifying the most common errors and the weak spots of the pre-printing preparation as a basis for practical recommendations on improving the general level of book culture of scholarly research publications of the NAS of Ukraine.

For the first time, qualitative methods have been used in the study to assess the quality of book publications of the National Academy of Sciences of Ukraine. Qualimetry is the scientific discipline that concerns itself with the methods and problems of quantification of the quality of any object. The tools offered by qualimetry make it possible to comprehensively assess the quality of any product, including books. Qualimetric assessment is performed on the basis of social need, that is, the conditional averaged need of the majority of society members [19], in our case, the target audience. Therefore, we have studied book products in terms of their functional properties for consumer, since they are the primary link in satisfying the public need for an academic book.

Qualimetric research involves several stages. The first of them is the determination of those properties of the object that would fully characterize its quality for consumer. There are simple and complex properties. The simple properties are the properties that cannot be divided into smaller parts. Accordingly, the complex properties are those that are divided into several structurally smaller properties. Having determined the parameters that need to be studied during the evaluation, we create a hierarchical “property tree” that shows the relationship between simple and complex properties of the object. The tree has distribution by levels, where the property of the zero level is the most universal, generalized property of the object, with the properties of the n

level being simple, that is, indivisible. Having built the tree, we evaluate the properties of n -th level, based on which the property of level $(n - 1)$ is evaluated. This process ends with the compilation of the overall quality scale of the object. In addition to the numerical quality index, the properties have a weighting coefficient for calculating the overall quality scale of the object.

We emphasize that we evaluate the aesthetic and technical properties of the publications — the design quality and production quality, distinguishing the two groups of indicators, respectively: publishing and printing. The content is not analyzed here. When considering both groups of indicators, we take into account the compliance of the parameters of the studied books with the standards and applicable publishing rules.

We have defined the publishing indicators as aesthetic ones. They are based on the principle of conformity of the form to the content, given the artistic expressiveness, rationality of the form, integrity of the composition, perfection of the workmanship, and the preservation of the product appearance. They include as follows: the quality of artistic and technical design, the quality of editorial work, the quality of production of illustrative material, the quality of production of the camera-ready. This group of indicators can also be called the pre-printing and composition indicators.

The printing indicators are the functional ones. They include the quality of the materials and the quality of the printing processes.

Of course, this approach is a certain simplification that is used deliberately, seeking to involve in the evaluation both researchers as users and experts in the field of publishing. It should be noted that in this field, the terminology or the clear demarcation of the parameters of publications as a complex product is currently debated and needs the attention of the professional community. The reason for this is the evolution of the structure of the publishing and printing industry, namely the relationship between the system components — the preprint preparation and the printing works, as a result of the widespread introduc-

tion of information and communication technologies and changes in the conventional production, type, methods of distribution, and functionality of publications. Thus, asserting that the main product of the printing industry is the implementation of a specific information connection between the content (text and design), the carrier (material and method of production), and the consumer (group of people), the researchers [12] have proposed to highlight the promising content innovation, media innovation, and marketing innovation, which are crucially important for the development of the industry. The content innovation includes “the development of in-house, scholarly research and informational publishing products; the improvement of the quality and the growth of quantity of visual materials; and the establishment of professional editing”. In our opinion, the content innovation includes also the content of scholarly research publication, which is not discussed in our research, as stated above. This is only one aspect of the current discussion regard-

ing the terminological demarcation of the components of the publishing and printing industry.

On this basis, a comprehensive expert analysis has been made based on the questionnaire we prepared. For the expert evaluation, the “property tree” that is a structural description of properties at different levels with the identification of complex and simple properties has been developed (Table 1).

Giving points to each indicator in the questionnaire, the experts have determined the score (level) of the simple properties on a scale from 1 to 5, where 1 is terrible, 2 is poor, 3 is satisfactory, 4 is good, and 5 is excellent. Complex evaluations of the aesthetic and the functional indicators, as well as integral evaluation of each edition have been calculated from the obtained simple evaluations.

The expert evaluations have been analyzed as follows. Based on the individual evaluations of the indicators for each book, the averaged values of the group of indexes have been formed. Then, the weights have been assigned to the groups: the pub-

Table 1. Structure of the Evaluation of the Components of Scholarly Research Book Quality

Levels of quality and respective properties			
0	1	2	3
General quality of book	Printing (functional)	Quality of materials	Paper (color, density) Other materials (cardboard, film)
		Quality of printing	Colored Black and white
		Quality of workmanship	Binding / cover Assembly of the block (even edges, cut) Attachment of the block to the cover
	Publishing (aesthetic)	Quality of editorial works	Editing Proofreading
		Quality of preparation of illustrative material	Tables Figures
		Quality of artistic design	Cover Camera-ready
		Layout quality	Compliance with regulations Consistency of layout

lishing properties 0.6 (60%) and the printing properties 0.4 (40%), with the help of which the final relative weighted index, i.e. the evaluation of each book, has been determined. The entire score range has been divided into the four groups (maximum 5 points): 3 and less – unsatisfactory, 3.1–3.9 – satisfactory, 4–4.5 – good, 4.6–5 – excellent.

The expert group includes the six people: two employees of a scientific publishing house; two specialists in scientific publishing, and two young researchers who are currently actively working with published scholarly research information.

For the study, we have chosen publications of R&D institutions of the NAS of Ukraine for 2019–2021, which were given to the Scientific and Publishing Council of the NAS of Ukraine as reference copies. From the entire mass of the reference copies, 150 book publications have been selected. Among them, the share of monographs, collections of scholarly research works, reference publications, educational publications, and popular science literature roughly corresponded to the share of such publications in the total book products of the National Academy of Sciences of Ukraine in the corresponding years (Table 2).

Books of the National Academy of Sciences of Ukraine can be published by various publishers. Most book production is published under the name of the National Academy of Sciences of Ukraine as a collective publisher at its own printing departments of R&D institutions or third-party printing works. Less amount of the books is made by professional publishers, among which

we highlight the Academy’s publishing houses: *Akadempriodyka* and *Naukova dumka*; fewer books are published by foreign publishers. The reference copies of the last group practically do not get to the SPC of the National Academy of Sciences of Ukraine, because abroad, usually, the printed products are published “on demand”, so in order to get a copy of the book, you need to order it from the publisher and prepay.

In addition, the experts have surveyed 10 electronic publications in terms of the part of the questionnaire related to preparations for publishing works. Currently, the ratio between the conventional paper and the electronic publications is such as the share of the latter in the total amount is 5–7%. Among this group we have seven monographs and three collections of scholarly research works; eight of these publications (except for one monograph and one collection) belong to the publications of the National Academy of Sciences of Ukraine as a collective publisher.

It is obvious that in 2022, during the active phase of hostilities on the territory of our country, this structure of the book publications of the NAS of Ukraine has undergone significant changes, but we cannot analyze in detail the effect of the armed aggression of the Russian Federation on the scholarly research and publishing sphere until the beginning of 2023.

Firstly, let us consider 150 printed editions and their parameters and indexes of the printing (Table 3) and the publishing (Table 4) quality. According to the overall composite index, 16 editions

Table 2. The share of Different Types of Publications in the Total Published Books of the NAS of Ukraine and the Sample Processed by Experts, 2019–2021

Publications, number of titles	Type of publication, %				
	Monographs	Collection of scholarly research works	Reference book	Catalog	Popular science book
General (2450)	50.00	15.30		34.70	
Analyzed (150)	63.66	17.66	14.33	1.66	2.69

Note. In the general statistics of the National Academy of Sciences of Ukraine, there is no division into reference, catalog, and popular science publications, they are counted together. Their total share in the analyzed materials is 18.68%.

are rated “excellent” and score from 4.6 to 5 points, 42 ones get “good” (score 4–4.5), 88 ones are evaluated “satisfactory” (score 3.1–3.9), and 8 editions get “unsatisfactory” (3 points or less). The lowest score is 2.6 points, the highest is 4.94.

One hundred and twenty of the studied publications are published in Ukrainian. Sometimes they have metadata or annotations in English, but the main language of the text is Ukrainian. Most often they are monographs; 10 books are published in Russian. This is thanks to the adoption of the Law of Ukraine dated April 25, 2019, on Enforcing the Use of Ukrainian language as an official language of the State and the entry into force of paragraphs 2–6 of Article 22 *Official Language in the Field of Science*, which took place a year after the signing of the Law. Two of the studied

monographs are published in English. Eighteen books are collections of scholarly research works and reference editions (dictionaries) published in several languages: Ukrainian, English, and Russian, two of them contain materials in Polish, and one has in Latin.

Characteristics of printed products. Fifty-five editions out of 150 have hard covers, the rest has paperbacks. In 25 editions, there are used additional means of artistic design: various pastings on other paper or film, production of dust covers.

The formats are most often well known to researchers: recommended for abstracts (A5: 60 × 84/16) – 68 books and for dissertations and scientific reports (A4: 60 × 84/8) – 9 books. However, there are quite a few other formats recommended by the government standard specifically for the

Table 3. Average Score of the Printing Works Quality of the Books of the NAS of Ukraine, points

Quality parameter	Type of publication				
	Monographs	Collection of scholarly research works	Reference book	Catalog	Popular science book
Paper (color, density)	4.58	4.62	4.66	4.84	4.83
Colored	4.27	3.96	4.54	–	5.00
Black and white	4.04	3.85	4.20	3.67	3.50
Cover	4.42	4.20	4.67	3.84	4.46
Assembly of the block (even edges, cut)	4.28	4.01	4.57	4.57	4.46
Attachment of the block to the cover	4.38	4.23	4.81	4.74	3.88
Total	4.33	4.14	4.57	4.33	4.35

Table 4. Average Score of the Publishing Works Quality of the Books of the NAS of Ukraine, points

Quality parameter	Type of publication				
	Monographs	Collection of scholarly research works	Reference book	Catalog	Popular science book
Editorial works	3.53	3.47	3.98	4.33	3.96
Illustrative material	3.18	2.76	3.61	3.34	3.49
Artistic design	3.53	3.22	3.90	4.17	3.79
Camera-ready	3.38	3.19	3.90	3.75	3.61
Total	3.41	3.16	3.85	3.92	3.71

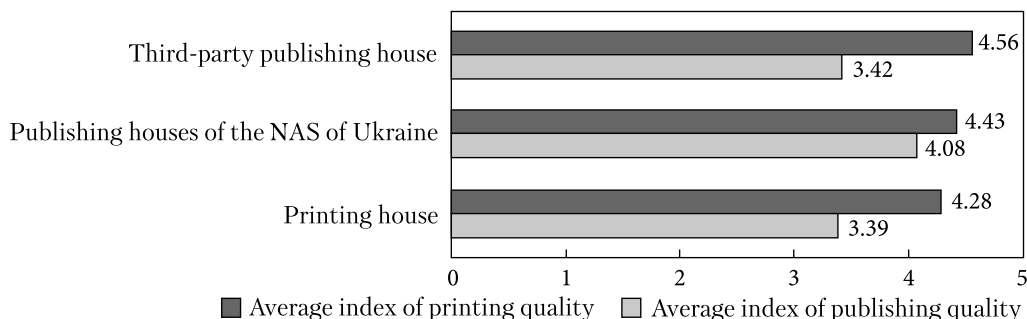


Fig. 1. Publishing-to-printing quality ratio depending on publisher

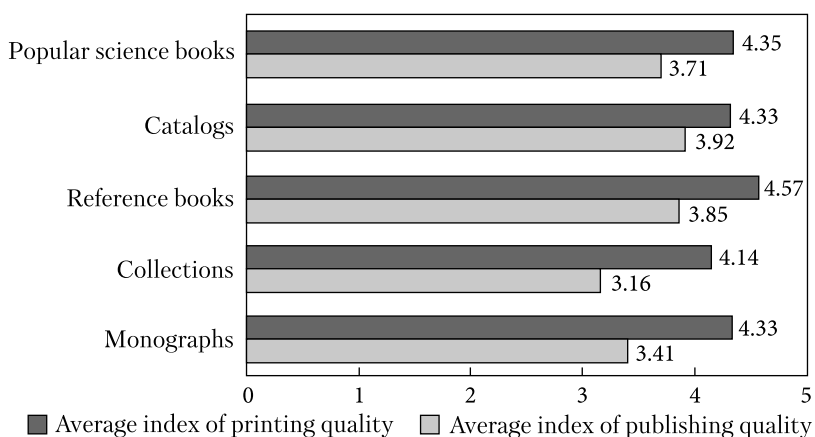


Fig. 2. Publishing-to-printing quality ratio depending on type of publication

scholarly research book publications: 70 × 100/16 (37 books) and 60 × 90/16 (15 books). Other formats occur in a very few cases, sometimes the format is indicated mistakenly, in two cases it is not indicated at all.

The average paper quality of all publication groups is 4.6; the average quality of color printing is 4.31, it is used in 43 editions (29.7%); the average quality of black and white printing scores 4; the cover print quality is 4.38; the block assembly quality is 4.26; the quality of the block attachment to the cover is 4.38. That is, the average indices of these parameters are generally good, with the average quality of workmanship of the selected 150 editions is 4.32. However, the score of these indicators varies rather widely, from 2.87 to 5.0: the number of books with an index below 3.5 is 11 (7.3%), and those with an index above 4.5 is 60 (40%).

The foregoing gives grounds for stating that the level of book printing in 2019–2021 is consistently normal and practically does not depend on publisher and type of publication. The relationship between the publisher’s printing quality, depending on publisher and type of publication, is illustrated in Figs. 1 and 2.

Characteristics of publishing preparation. The average level of text processing by editors, according to the experts, is 3.82 (39 editions received less than 3.5), proofreading works are rated lower, 3.28 (with 71 editions having an index less than 3.5). Sometimes, publications are endorsed that they are published as edited by authors, but this does not exempt the publisher from proofreading works. The preparation of illustrative material is also extremely low: Tables (3.09, with 53 editions having an index of less than 3.5) and Figures (3.13,

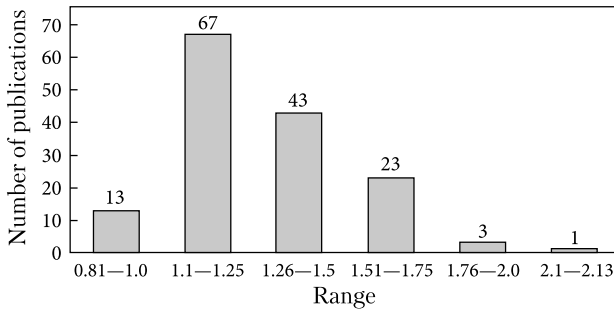


Fig. 3. Ratio of average printing quality index to average publishing quality index

with 66 editions having less than 3.5). It should be noted that 52 editions do not contain tables, and 19 ones do not have figures. This means that the share of the publications in which tables are poorly prepared is 54%, and that of the publications with poorly prepared figures is about 50%. This directly indicates the low informativeness of the scholarly research publications, their unsatisfactory consumer qualities. Most often, the figures and tables do not comply with the publishing rules and standards and are simply unreadable, because they have a low image quality, which significantly impoverishes the content of the publications.

The cover production level is somewhat better as it scores 3.88. However, it varies widely, from 1.83 to 5.0. The situation is similar with the layout that is the basic structure of the publication, which determines the general plan of its computer compilation, so the production of the camera-ready significantly affects the “friendliness” of

the publication to the reader, the accessibility of the content, and the consumer qualities of the book. The layout is a set of defined parameters of the future publication: the format of the publication, the size of the margins and columns, the principles of computer layout, in particular the arrangement of illustrative material, the font ensemble of the publication, the design of footers, column numbers, imposition, the highlighting of structural parts. The average layout quality for the reviewed scholarly books is 3.07. The score ranges within 1.6–5.0.

We emphasize that the low level of covers, layouts, illustrative material is a direct consequence of ignorance of the relevant rules and standards, which determine publishing works related to preparing publications. This is indicated by the extremely low level of compliance with the applicable standards evaluated by experts as 2.80 (the score ranges from 1.0 to 5.0). First of all, these are errors in the presentation of the source data of the publication, its cover, title page and its back, details page, table of contents, arrangement of borders, footers, and column numbers, observance of column sizes, arrangement of illustrations, design of different levels of subordination of information, use of different font designs, etc. The average score of the level of layouts and compliance with selected design options is 3.95.

Therefore, the average quality of publishing, preprinting and composition, preparation of the publications is significantly lower than the qua-

Table 5. Average Indices of the Quality of Publishing Preparation of Book Electronic Editions of the NAS of Ukraine, points

Quality parameter	Type of publication		
	Monograph	Collection of scholarly research works	Catalog
Editorial works	3.03	3.5	2.84
Illustrative material	3.17	–	3.75
Artistic design	3.92	2.67	2.42
Camera-ready	3.30	3.08	2.42
Total	3.36	3.08	2.86

lity of printing / replication works and scores 3.48 against 4.32. This significantly worsens the general evaluation of the publication. On average, the books score 3.81 based on the aggregate of the printing and the publishing parameters. In general, the ratio of the averaged indexes of the printing works and the publishing preparation is 1.27, varying for individual books within the range of 0.81–2.13 (Fig. 3).

As indicated above, we have analyzed ten electronic editions as well. It is obvious that for them only publishing indices can be evaluated (Table 5), unfortunately, six of the selected electronic publications do not have covers either. Eight out of ten reviewed publications are monographs, the other two are a collection of scholarly research works and a catalog, all in Ukrainian. No e-edition gets a rating higher than “satisfactory,” six publications are rated “satisfactory” (3.1–3.9), while four publications score 3 points or less and get “unsatisfactory”. The lowest score is 2.75 points, the highest is 3.83.

Although the sample of electronic publications is quite limited, it fully represents the trends in the preparation of such publications. Unfortunately, in the modern Ukrainian scientific environment, electronic editions are considered secondary in comparison with the printed ones, so all the problems of the publishing business manifest themselves more graphically: most often, requirements regarding editing, proofreading, preparation of illustrative material, computer typesetting are completely ignored. Because of permanent rise in the prices for printing materials and the global tendency to increase the share of electronic publications, this situation becomes dangerous: there are more and more e-publications, whose level of publishing preparation does not exceed that of a scientific report or dissertation, which are not publications at all. In order to decently present the results of scholarly research work in open access, domestic researchers and R&D institutions need to revise the approaches to the design of e-editions: they should pay to their preparation at least as much attention as to the printed ones.

Conclusions. The research has shown that the level of quality of book products created at the National Academy of Sciences of Ukraine, both printed and electronic, can be significantly improved. The low consumer quality of publications becomes an obstacle to the achievement of the social goal of academic publishing products, the performance of its main functions, which is the dissemination of scholarly research information, the promotion of scientific communication, the raising of the level of public respect for scholarly research, and the education of society. The expert review of the studied collection of publications has given reasons to identify systemic errors made by the publishers of academic books: the misuse of the endorsement of the National Academy of Sciences of Ukraine, copyright signs, and *Creative Commons* licenses (for electronic publications), the incorrect indication of ISBN and other indexes, source and issue information, and the incorrect design of structural parts of publications and illustrative material. It is also possible to outline the main problems, which belong to the aesthetic aspects: the indication of footers and column numbers, the placement of illustrations, the selection of typefaces and pins of the main text, notes, and captures (font ensemble), as well as the presentation of the list of references and other additional information, the design of covers.

What do the results of this research indicate? In our opinion, and these conclusions have been confirmed by our experts, the results have indicated the two problems of academic scholarly research book publishing: 1) the lack of funding for the production of specialized publications; 2) the misunderstanding by researchers of the book culture essence and its importance for the complete presentation of research results and communication.

Both problems determine the way the researchers act when there is a need to publish a book. First of all, they try to reduce the cost of the publication as much as possible. Since it is difficult to do this at the expense of printing and brochure-binding works, especially if they use the services of third-party printing works, the researchers save

on publishing, pre-printing and typesetting, editing, proofreading, artistic and technical design, production of illustrative materials, doing these works by themselves. As a result, each stage of the preparation suffers from unprofessionalism, lack of special computer support, lack of necessary skills and knowledge of publishing standards and elementary rules of preparation. This conclusion is true for the production of e-books.

At the same time, in our opinion, we should not condemn those who forcedly do pre-printing preparation of publications by themselves. These works are not their job and cannot be done in the time allocated to the main job. After all, according to the Law of Ukraine on Scholarly Research and R&D², researcher is a natural person who conducts fundamental and (or) applied scholarly research and obtains scientific and (or) R&D (applied) results; his/her principle, i.e. scholarly research, activity is intellectual creative job aimed at obtaining new knowledge and (or) finding ways to apply it, the main types of which are fundamental and applied research. The same Law defines that the publishing activities aimed at highlighting the results of scholarly research, R&D, pedagogical, and organizational activities in the field of science, publicizing scientific results, and presenting scholarly research (R&D) products and research in the field of theory and methodology of scientific publishing are the main type of activity of scientific publishing houses.

The developed questionnaire and the proposed qualimetry approach based on expert evaluation can be extended to any array of publications by types, types, and publishers. The number of experts can be expanded without restrictions. In this case, a more detailed development of the selection methodology and the work of experts on the evaluation of publishing and printing products will be necessary. It can also be interesting to

compare similar arrays of book publications for different periods and fields of knowledge.

Speaking about the research and development of book culture, we need to keep in mind the European open access initiative [20] joined by Ukraine. One of the requirements for publishing products that highlight the results of scholarly research and are freely placed on the network is compliance with the applicable standards and a high level of professional training provided by professional publishers.

In view of the above, it is obvious that the annual financial support of various R&D projects of the NAS of Ukraine, for example, *Science Book*, *Science for All*, *Ukrainian Science Book in a Foreign Language*, is of particular importance. Within the framework of these projects, the professional scientific publishing houses of the Academy — *Naukova Dumka* and *Akademperiodyka* — prepare and publish books at the expense of budget funds, strictly meeting the applicable standards, given the world experience and innovations in publishing. It is obvious that the expansion of academic publishing projects and the increase in the number of publications issued within their framework contribute to the improvement of the quality of books, as well as the accessibility of these publications thanks to the use of various digital identifiers.

It is very important that the need for standardization in the field of scholarly research book publishing should be realized by researchers before it becomes too late. Book culture can be brought up and instilled in young researchers and specialists, especially if they are taught on books published in compliance with strict rules, industry norms, and standards. The principled and strict position of academic publishing houses, scientific editors and reviewers, who work with authors and prepare books for publication, as well as of the scientific councils of R&D organizations that recommend research works for publication should be the first step on the way to creating a modern book culture and truly “cultural” publications.

² On Scholarly Research and R&D Activity: Law of Ukraine dated November 26, 2015 No. 848-VIII. URL: <https://zakon.rada.gov.ua/laws/show/848-19#Text> (date of application: 10/13/2022)

Prospects for the implementation of the obtained results. The identification of systematic errors made by publishers in the array of book publications of the NAS of Ukraine, as well as the main problems of creating professional camera-ready can be the basis for preparing appropriate methodological recommendations for R&D institutions of the NAS of Ukraine.

Such methodological recommendations should contain a list of the necessary standards and specialized literature required in the process of preparing the publication, examples of the most frequent errors and samples of the correct design of various information and structural parts of the publication, illustrative materials, and reference and analytical apparatus, as well as indicate real ways to simplify the preparation of camera-ready for making convenient and reader-friendly publications.

The continuation of the study and evaluation of the array of book publications of the NAS of Ukraine, the implementation of recommendations and strengthening of control over the quality of scientific publishing products will have a positive effect on the consumer quality of products, significantly raise their level, make the published results of scholarly research works more

accessible to the world scientific community, ensure the possibility of a harmonious entry of the publishing products of the NAS of Ukraine into the world aggregators of scientific information. This will contribute to better accessibility of the scientific achievements of domestic researchers and their more active involvement in various international projects.

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КНИЖКОВА КУЛЬТУРА ВИДАНЬ НАН УКРАЇНИ: СПРОБА КВАЛІМЕТРИЧНОГО ОЦІНЮВАННЯ

Вступ. Щороку НАН України та її установи продукують близько тисячі назв книг, але не більше 10 % із них випускають професійні видавництва наукової літератури. Значну частину науково-видавничої продукції Академії підготовлено й видано з порушеннями видавничих і поліграфічних правил та стандартів, вона має низькі споживчі якості й інформативність.

Проблематика. Комплексна система показників, яка давала б змогу кількісно оцінити видавничу продукцію з точки зору її підготовки та виготовлення, нині відсутня попри значні напрацювання у сфері книжкової культури. Наявність її надасть можливість виявити найчастіші помилки.

Мета. Розробка створеної на основі кваліметричного підходу системи й методології оцінювання видавничих і поліграфічних показників видань.

Матеріали й методи. Застосовано кваліметричний підхід для створення системи пов'язаних і зважених одиничних показників; математичні методи для обробки отриманих результатів. Матеріалом слугували друковані праці НАН України за 2019–2021 рр.

Результати. Розроблено «дерево показників», за яким укладено анкету книжкового видання для експертного оцінювання та проаналізовано 160 видань. Такий підхід до наукових видань в Україні застосовано вперше. Виявлено, що їхній рівень загалом є «задовільним», а поліграфічні якості — значно кращими за видавничі. З'ясовано, що під час виготовлення видань науковці нехтують видавничими стандартами під час підготовки текстів, ілюстративного матеріалу та оригінал-макетів, однак оплачують професійні поліграфічні послуги.

Висновки. Нова методика дає можливість кількісно охарактеризувати загальний стан виготовлення науково-видавничої продукції НАН України, засвідчивши неналежний рівень її додрукарської підготовки. Виявлення типових помилок у підготовці книг може стати основою для розроблення практичних рекомендацій для видавничих підрозділів НАН України з метою покращення якості друкованих праць без залучення значних додаткових ресурсів.

Ключові слова: НАН України, книжкова культура, наукова книга, електронне видання, кваліметрія, видавничі стандарти, споживча якість видання.