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## **INDICATORS FOR SCIENTIFIC ARTICLES**

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## **KRYTERIA JAKOŚCI ARTYKUŁÓW NAUKOWYCH**

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**Abstract:** The publication of original research findings in peer-reviewed scientific journals is an important aspect of academic achievements and contribution to the society. Yet, failures to adhere to journals' guidelines and standards are a common reason for the rejection of submitted manuscripts. The aim of this paper is to present the most important formal principles that researchers must comply with if they want their work to be printed in a refereed journal relating to food and food technology. The paper presents the results collected by three journal editors. Each of the coauthors recorded and analyzed his own latest reviews and then determined the most common errors in them by following a list of ten accepted rules and calculated the frequencies of recorded manuscript errors. The results showed consistent observations between the three coauthors. It is determined that the most often committed errors or non-compliances are poor experimental design, lack of innovation, and poor writing.

**Keywords:** scientific articles, formal errors, Pareto-Lorenz method.

**Streszczenie:** Publikacja oryginalnych wyników badań w recenzowanych czasopismach naukowych jest ważnym aspektem osiągnięć akademickich i wkładu w rozwój społeczeństwa. Jednak nieprzestrzeganie wytycznych i standardów czasopism jest częstą przyczyną odrzucania nadesłanych manuskryptów. Celem niniejszego opracowania jest przedstawienie najważniejszych zasad formalnych, których muszą przestrzegać badacze, jeśli chcą, aby ich praca została wydrukowana w czasopiśmie recenzowanym dotyczącym technologii żywności i żywienia. W artykule przedstawiono wyniki zebrane przez trzech redaktorów czasopism.

Każdy z nich wybrał i przeanalizował swoje ostatnie recenzje. Następnie, opierając się na liście dziesięciu przyjętych zasad, wskazał najczęściej popełniane w nich błędy oraz częstotliwość występowania w manuskrypcie nieprawidłowości. Uzyskane przez trzech autorów wyniki okazały się bardzo zbieżne. Stwierdzono, że najczęściej popełnianymi błędami lub niezgodnościami są: niejasny opis eksperymentu, brak innowacyjności i niska ocena tekstu pod względem językowym.

**Słowa kluczowe:** publikacje naukowe, błędy formalne, metoda Pareto-Lorenza.

## 1. Introduction

After selecting the right journal, authors preparing publications should refer to editorial requirements concerning the format/design and the work construction/production. Moreover, there are several studies/handbooks, the results of which may help write scientific publications (Cargill & O'Connor, 2009; Council of Science Editors, 2014; Day & Gastel, 2011; Doumont, 2010; EASE, 2017; Gustavii, 2008; Hengl, Gould, & Gerritsma, 2011; San Francisco Edit, n.d.).

However, most manuscript reviewers for scientific journals have experienced problems arising from errors or formal shortcomings committed by authors during manuscript preparation that substantially weaken the articles or prevent substantive analysis of the work. The recommendation of rejection, unfortunately, is legitimately made in such cases. It can be detrimental not only to the author but also to the scientific progress when otherwise valuable research findings are rejected. Therefore, the three coauthors of the present paper have decided, basing on their individual experiences in reviewing and editing research manuscripts, to address the types of formal errors and the frequency of their occurrences, in order to increase awareness of researchers in this field and to reduce the scale of this phenomenon.

Very often the manuscript substantially written at the highest level receives a poor rating or is rejected if the authors write the summary incorrectly, forget or vaguely formulate the objective of research and working hypothesis, or provide only quantitative analysis of their own results versus those obtained by other authors. They forget to conduct qualitative analysis in data discussion as well as when drawing/writing the conclusion. Consequently, they do not formulate final conclusions properly, or omit indications as to further research which they expect their results and considerations to inspire. Errors in the "Literature/Bibliography" subunit, carelessly prepared tables and figures, and poor statistical analysis of the results are also common factors lowering a paper's quality.

It would seem that meeting the basic, essential criteria that decide on acceptance or rejection of a publication should be the norm; whether it truly is, is the question the authors of this paper will try to answer. At the same time, we do not pretend to give here a strict manual, but rather, to show common errors and mistakes, their frequency and scope. This could increase the authors' awareness of the formal rules governing scientific publications, which will in turn enable the reviewers to focus on

substantive value of the work. Hopefully, the content presented here will help to reduce the amount of work rejected due to formal errors.

The aim of this paper is therefore to present the most important formal rules that the authors must comply with if they want to have their work printed in a referred journal in the discipline of agricultural sciences, and field of food and nutrition technology. The ultimate goal is to teach young researchers how to successfully prepare scientific manuscripts to disseminate their important findings.

## 2. Materials and methods

Three co-authors from different countries (Poland, USA, and South Korea), who are editors of scientific journals as well as expert reviewers for various journals, analyzed their last reviews (i.e., Polish Journal of Food Science and Nutrition, Food and Bioprocess Technology, Journal of Food Science, Food Structure, Journal of Agricultural and Food Chemistry, etc.) from 2016 year (containing formal errors) to determine the frequency of the most common formal errors committed in writing publications. These errors were then sorted in a descending order of frequency and, based on the method of Pareto-Lorenz (Rose, 2005), the errors which crucially affect low evaluation or rejection of the reviewed manuscripts were pointed out. The Pareto-Lorenz method is based on the principle of 80/20, according to which, in a heterogeneous population 20% of the elements represents 80% cumulative value of an attribute which is used as a criterion for classification. The 80/20 rule says that the incidence of most types of events can be observed only in a small portion of the possible circumstances.

Before our results are presented in subsections from 2.1. to 2.6, the formal conditions which, if met, result in a valuable scientific article, will be discussed.

### 2.1. Preparing the abstract/summary of a paper

The title and summary are an important part of a scientific publication. The first encounter of the author is the table of contents or the title. Secondly, their attention is focused on the summary/abstract of the paper. Thus, the title and summary are important elements when preparing a scientific publication and should be well thought out. In many cases, the reader makes the decision – to continue reading or not—at this stage. The title should be attractive and in line with the content of the publication, and the abstract should succinctly inform of its substantive content.

The San Francisco Edit (n.d.) and EASE (2017) list several important steps for writing a good summary. First of all, a summary should contain the following elements: background (why the research was done), aim/purpose (what question or questions were answered), methods used (how was the experiment done), main results (the most important data and its correlations), conclusions, and comments to the hypothesis. Keywords should also be reflected in the summary. Language used should be adequate and correspond to the subject. Moreover, the summary text must meet the editorial requirements for a given journal, such as the character limit. Blank words or phrases

that do not add general information and detailed descriptions of the used methods should be avoided. The summary should be a condensed version of the paper, defining the most important points, but at the same time encouraging to read the rest.

## 2.2. Preparing the introduction

Another important factor in publication quality is a properly prepared introduction. San Francisco Edit (n.d.) provides several important steps to writing a good introduction.

First, the reader should be informed of the current state of knowledge on the subject. However, this part cannot be overly generic, and cited works should be strictly relevant to the paper's subject. The literature review should show what the unknowns are, the blanks, and what further research seems promising, likely to be applied in the industrial practice or to initiate even further research in the field. A good introduction should explain why these particular studies are necessary, and thus what is the significance of the publication. This part of the introduction is an excellent test of the authors' knowledge on the subject, their ability to succinctly present and discuss results and achievements of other researchers, as well as their ability to fully explain the problem to the reader, to convince the reader of the importance of the problem and of the innovative character of the study. Hence, the insistence of the editors of all major scientific journals for literature reviews is that the literature review is update and includes citations from other journals, not just from the journal in which the paper is to be printed.

Another very important part of a good introduction is appropriate articulation of the research aim and purpose. A clear definition of the research hypothesis is also very important and, unfortunately, often neglected by authors. The research hypothesis is an important element combining the title and purpose of the paper with its summary. The presence of a research hypothesis enriches the summary, which can contain arguments in favor or against the hypothesis as well as results analysis and conclusions.

The introduction should also contain a general description of research approach and an explanation of applied abbreviations and specialist terms.

To summarize, a good introduction to a scientific endeavor should contain: a solid foundation in literature, a list of questions answered, questions currently left without answers, and questions that emerged from the proposed research, a precise definition of the objective and the research hypothesis, and an outline of research approach or methodology to be taken to solve the problem.

## 2.3. Preparing the “Materials and methods” section

According to EASE (2017), the subsection “Materials and methods” should contain full information on materials used (place of acquisition, storage conditions, producers), methods applied – with their description and potential modifications, equipment used – apparatus (manufacturers), sample size, data analysis and statistical analysis of the results. It should also contain a detailed description of how the

research was conducted. For commonly used methods, authors can cite the published procedures and only provide key steps so as to avoid giving detailed descriptions. However, if the methods are original and warrant full description, sufficient details should be provided.

## 2.4. Presenting results

Another important element of a good paper is a proper presentation of the results. San Francisco Edit (n.d.) gives several conditions that this part of a manuscript should meet. It is imperative that the presentation of results is closely linked to the materials and methods overview. There should be a logical cause-effect relationship between the applied methods and the results obtained. The results should be presented in the form of text, table or figure, which together, just like in a good literary work, become a story about something important, intriguing, and stimulating the reader's curiosity. It is not necessary to present all obtained results, only the crucial ones, as well as those relevant to the hypothesis; these do not necessarily need to confirm it. The results, arranged in tables or shown in figures should be subjected to **quantitative analysis** (**qualitative analysis** is performed in the "discussing results" section).

It is not recommended to present increases of values in numerical form. Presenting them in a percentage form makes them easier to understand. The results should be subjected to proper statistical analysis, especially in the case of comparisons between data variables depending on one or more factors (Lang, 2004). Each table or figure should be signed (with a title above or below) and enumerated. Legend and sources for figures and tables are important as well, as is information on what probability was used in determining differences between the averages of reported results. Editorial requirements often concern tables and drawings to be submitted at the end of a manuscript, with a list of tables and figures, and only the place for each of those features indicated in the text. In other cases, tables and figures are placed within the text. In general, result presentation and materials and methods description should be written in the past tense ("was found", "were obtained", "were compared"). The text should be concise, clear and precise. If the publishing requirements allow combining result presentation and discussion into one section, the rules above are still valid for that section.

To summarize, a presentation of results should refer to the research problems posed in the introduction, it should be arranged sequentially with each sequence corresponding to a sequence from the "Materials and methods" section. The results presented in a tabular form and/or graphics are to be subjected to quantitative analysis; the text should be interesting and at the same time transparent, clear and precise.

## 2.5. Discussing results

The next important component of a publication is the "results discussion" section. If the author decides to combine analysis and discussion of results into one section, quantitative analysis should be followed by qualitative analysis, as per the rules

described in section 2.4. San Francisco Edit (n.d.) provides several important steps for writing a good “Results discussion” section. Construction of the “Results discussion” section, considered the most important part of an article, requires prior preparation. Maps, problem trees or other organizational structures are helpful practical measures. It is necessary to logically organize own thoughts based on the results of individual experiments or their sequence. The authors should indicate how their results relate to the results obtained by other researchers, and should determine whether they are similar or different. It is also worthwhile to respond to accepted opinions on the subject and discuss whether the results confirm them and why. It should be also determined whether any new explanations of the phenomenon or problem researched can be suggested in the light of the new results. The discussion of results should contain: answers to research questions posed by the author in the introduction, explanation of how the results confirm these answers, and how they fit in with the current state of knowledge on the subject in question. This section should also include arguments for acceptance or rejection of the hypothesis formed in the introduction.

Discussing own results with the results of other researchers, an attempt to interpret and explain observed discrepancies and conflicting results and defense of own position from own questions, provide added value to the work. Repetition of content from the previous section, “Results analysis”, should be avoided. However, when responses to the research questions should be supported by the obtained results, authors ought to refer the reader to the tables or figures placed in the text.

“Discussion” section should be written concisely. It should be short and specific. Sequencing information, for example presenting an answer to a question, then presenting supporting results and then referencing publications of other authors, is invaluable.

This section is vital for the work, because proper planning of an experiment, ability to interpret results, present opinions, and discuss own results in comparison with the results of other authors are all indicators of the author’s professional maturity. Pointing to the limitations and potential weak points in the publication, as well as encouraging further research to clarify and explain them, are also valuable. Qualitative analysis should establish goals for subsequent research, aiming to confirm research hypotheses. Discussion of results must also contain citations from both foreign and national literature, including citations from the journal in which the work is to be published. Generalized statements and interpretations (e.g. writing about statistical significance, complaints), or comments about the content of the article, especially tables and drawings, should be written in present tense (Day & Gostel, 2011).

A correct discussion of results is the starting point for the paper’s conclusions. These should be presented in relevant hierarchy and may not be a duplicate of research results. They should be a more generalized application of the results, an indication of relevant issues arising from them, confirming existing knowledge on a given topic. Questions and problems requiring verification and/or further research should also be indicated among the conclusions. The reader should find clear information as to what important message can be found in the article, and which ideas remain speculative. The author should also demonstrate the originality of their

research problem and the obtained results. In conclusion, the researcher should respond to the hypothesis with a record of arguments for or against it. Authors working on a scientific publication should put special effort in keeping the work subject, purpose, hypothesis, results and their discussion as coherent and consistent as possible. These elements must form a logical whole. In indicating whether the study and obtained results require further analysis, with emphasis on their scientific or industrial usefulness is a valuable addition.

## **2.6. Response to comments from reviewers**

There are no perfect manuscripts. However, being attentive to the formal part of a publication increases its chances of getting a positive opinion from the reviewers, whose additional comments increase the value of substantive work. According to our observations, authors still have problems with constructing a proper response to comments from reviewers. This can be helped by following a few rules, which will be discussed below (San Francisco Edit (n.d.)).

In the event a manuscript is rejected by the journal's editor, authors should refer to the explanations on which it is based. Analyze the comments from reviewers to consider whether the publication could be accepted to print again, after the certain amendments. There is also the possibility to send the revised work to another publishing house. If the decision of the publisher is positive, comments posted by reviewers and the editor should still be analyzed.

Sometimes, the reviewers' comments can seem like a second publication, and require much patience from authors when replying to any queries or doubts stated in the review. Authors should also show great tact and, sometimes, gratitude and respect for the reviewer, even though their remarks may include the demand for additional work (experiments, etc.). This is easier when keeping in mind that the intention of the editor and reviewers is to assist authors in writing publications of the highest level, rather than criticize them on principle. Authors should correct and improve their work in such a way that it can be accepted by either the reviewers or, if that is not necessary, at least by the editor. The authors, in addition to amending the work in a manner that unequivocally shows that corrections have been made, for example by highlighting them in the text with a different color, should also answer all notes and comments from reviewers. This should not be done hastily, under the influence of emotions. It is better to carefully analyze the feedback, all the comments and suggestions and try to answer the questions: what can be done, and how, in order to improve the text, and will it entail, for example, carrying out additional experimental research.

In a letter to the editor, authors should not use a defensive, confrontational tone, but use the helpful information supplied by the comments, agree on useful suggestions to improve the manuscript, and calmly, objectively explain their point of view in case of any discrepancies. There is no volume limit on a letter to the editor, and long documentation perceived positively by the reviewer and editor.

It is not enough to state that the authors improved the text in accordance with the reviewers' observations. Each comment must be separately addressed, in detail, and

changes in the text should be highlighted, for example with a different color. Having received the corrected text and answers to review comments, the reviewers issue a decision on whether to accept a publication for print, or recommend further amendments. Therefore, authors should not spare efforts to facilitate the work of reviewers, so that they have a sufficient basis for a final, positive decision, without having to ask repeated questions, make additional notes and request clarification (all of which may postpone publication).

Answering the reviewers does not always have to result in including the recommended changes in the text, if authors provide appropriate arguments. Rejection of the suggestion of a reviewer must be supported, however, chiefly by relevant citations. The opinions of different reviewers on the same issue or subject may vary. Authors must then explain which option they consider more important and a better choice in a letter to the publisher. If the reviewer made a mistake in assessing a problem, arguments and facts supported by citations from literature should be supplied to prove it.

In the case of a complaint on the length of the text, authors should consider its reduction, and, in case of a complaint on the quality of translations into English, they should make such improvements with the help of a native speaker.

In conclusion, it should be emphasized that the authors should treat reviewers' comments as an effort made only to improve the quality of a publication. Reviewers usually do not know the authors' names. The authors, when directing a letter to the publisher, should respond in a respectful and tactful way to each allegation and suggestion of the reviewers; the publisher should, in fact, aid the author in finding appropriate answers through correspondence.

Authors neglecting this obligation, they may irritate the editor, the publisher and then the reviewers, when they ask for a text corrected according to their comments. It is more efficient to prepare an exhaustive letter to the publisher concerning the amendments proposed by the reviewers, and to make appropriate adjustments and corrections to the text. This way, the publication can come out quickly and be recognized by the readers as a valuable development in every respect.

### **3. Results and discussion**

On the basis of information from paragraphs 2.1 – 2.5, ten (1 through 10) the most important noncompliances with editorial requirements were pointed for. Author 1 and 3 followed them in analyzing how often they appeared in their reviews. The second author made additionally some own suggestions. The number of samples for three authors was 40, 681 and 100 received manuscripts, respectively.

Tables 1, 2 and 3 present non-compliances found by the three co-authors of this paper from their respective manuscript reviews and editing, ordered from the most frequently occurring to the least and Table 4 presents the summary results. Figures 1-2-3 present Pareto-Lorentz diagrams based on the data from table 1-2-3.

**Table 1.** Survey results 1: non-compliances and errors (n=151) found by a co-author (1) in 40 received manuscripts  
**Tabela 1.** Wyniki badania 1: nieprawidłowości i błędy (n=151) stwierdzone przez współautora (1) w 40 recenzjach

No/Nr	Non-compliances found – Error name/ Stwierdzone nieprawidłowości – Nazwa błędu	Number of occurrences/ Liczba przypadków	Relative frequency of non-compliance/ Udział względny (%)	Cumulative relative frequency of non-compliance/ Skumulowana względna liczba (%)
1.	Unclear design of experiment/Niejasny opis eksperymentu	27	17.88	17.88
2.	Incorrect or missing qualitative analysis (no discussion of own results with results of other scientists)/ Niewłaściwa lub brak jakościowej analizy wyników (brak dyskusji własnych wyników z wynikami innych autorów)	25	16.56	34.44
3.	Improperly formulated conclusions (lack of connection with research results, too general)/ Niewłaściwie sformułowane wnioski (brak związku z wynikami badań, zbyt ogólne)	21	13.91	48.35
4.	Errors in “Literature” section (not according to journal requirements)/ Błędy w „Literaturze” (niezgodne z wymaganiami czasopisma)	16	10.6	58.95
5.	Roughly prepared tables and/or figures (poor organization; illegible; font size)/ Niestarannie przygotowane tabele oraz rysunki (słaba organizacja; nieczytelne; wielkość czcionki)	15	9.93	68.88
6.	<b>Incorrectly written abstract/summary (too short, superficial, with blank words or phrases)/ Nieprawidłowo napisane streszczenie (zbyt krótkie, powierzchowne, z pustymi słowami i frazami)</b>	<b>13</b>	<b>8.61</b>	<b>77.49</b>
7.	No mentions of further research/No indication of importance of obtained results for practice/ Brak informacji o dalszych badaniach/Brak wskazania znaczenia uzyskanych wyników dla praktyki	10	6.62	84.11
8.	Vaguely formulated objective and/or lack of hypothesis/ Niejasno sformułowany cel badawczy oraz hipotezy pracy	9	5.96	90.07
9.	Incorrect quantitative analysis (presentation of own results)/ Niewłaściwa ilościowa analiza własnych wyników (przedstawienia własnych wyników)	9	5.96	96.03
10.	Poor or incorrect statistical analysis/ Słaba lub niewłaściwa analiza statystyczna wyników	6	3.97	100
–	–	151	100	–

Source: own study.

Źródło: opracowanie własne.

**Table 2.** Survey results 2: non-compliances and errors (n=2305) found by a co-author (2) in 681 received manuscripts  
**Tabela 2.** Wyniki badania 2: nieprawidłowości i błędy (n=2305) stwierdzone przez współautora (2) w 681 recenzjach

No/Nr	Stwierdzone nieprawidłowości – Nazwa błędu/ Non-compliance found – Error name	Liczba przypadków/ Number of occurrences	Relative frequency of non-compliance/ Udział względny (%)	Cumulative relative frequency of non-compliance/ Skumulowana względna liczba (%)
1.	Lack of depth (superficial; unsophisticated)/ Brak głębi (powierzchnowy; niewyszukany)	450	19.52	19.52
2.	Uninnovative (rehash; trivial; incremental)/ Nieinnowacyjny (powtórzenie; trywialny; przyrostowy)	400	17.35	36.87
3.	Journal format – template (not following authors guide)/ Format – szablon czasopisma (niezgodny z przewodnikiem dla autorów)	350	15.18	52.05
4.	Poor statistical and experimental design and expression/ Słabe przedstawienie koncepcji eksperymentu i opracowanie statystyczne oraz interpretacja	280	12.15	64.2
5.	Poor result discussion (inadequate data interpretation; just state results; no comparison with published literature; superficial)/ Słabe omówienie wyników (niewłaściwa interpretacja danych; tylko podanie wyników; brak porównania z opublikowaną literaturą; powierzchowne)	260	11.28	75.48
<b>6.</b>	<b>Improper methodology/ Niewłaściwa metodyka</b>	<b>160</b>	<b>6.94</b>	<b>82.42</b>
7.	Out of scope of the journal (industry relevance; subject matter)/ Poza zakresem czasopisma (znaezenie dla branży; tematyka)	150	6.51	88.93
8.	Figures/tables (poor organization; illegible; font size)/ Rysunki/tabele (słaba organizacja; nieczytelne; wielkość czcionki)	120	5.21	94.14
9.	English language problems (grammar; syntax)/ Problemy z językiem angielskim (gramatyka; składnia)	100	4.34	98.48
10.	Plagiat (dane i język)/ Plagiarism (data and language)	35	1.52	100
–	–	2305	100	–

Source: own study.

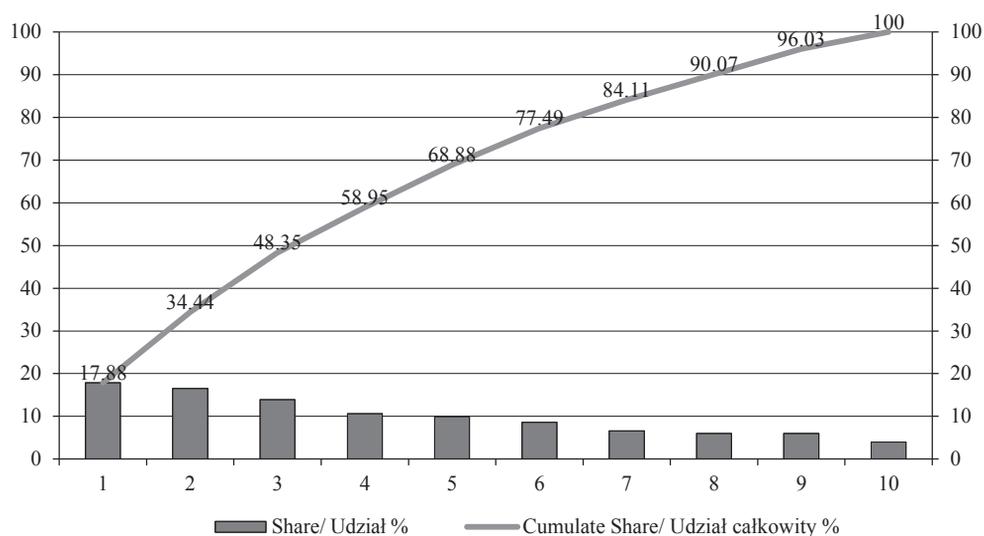
Źródło: opracowanie własne.

**Table 3.** Survey results 3: non-compliances and errors (n= 151) found by a co-author (3) in 100 received manuscripts  
**Tabela 3.** Wyniki badania 3: nieprawidłowości i błędy (n=151) stwierdzone przez współautora (3) w 100 recenzjach

No/Nr	Non-compliance found – Error name/ Stwierdzone nieprawidłowości – Nazwa błędu	Number of occurrences/ Liczba przypadków	Relative frequency of non-compliance/ Udział względny (%)	Cumulative relative frequency of non-compliance/ Skumulowana względna liczba (%)
1.	Errors in “Literature” section (not according to journal requirements)/ Błędy w „Literaturze”(niezgodny z wymaganiami czasopisma)	26	17.22	17.22
2.	No indication of importance of obtained results for practice/ Brak wskazania znaczenia uzyskanych wyników dla praktyki	20	13.25	30.47
3.	Poor or incorrect statistical analysis/ Słaba lub niewłaściwa analiza statystyczna wyników	20	13.25	43.72
4.	Vaguely formulated objective and/or lack of hypothesis/ Niejasno sformułowany cel badawczy oraz hipotezy pracy	18	11.92	55.64
5.	Incorrectly written abstract/summary (too short, superficial, with blank words or phrases)/ Nieprawidłowo napisane streszczenie (zbyt krótkie, powierzchowne, z pustymi słowami i frazami)	16	10.6	66.24
6.	<b>Unclear design of experiment/ Niejasny opis eksperymentu</b>	<b>15</b>	<b>9.93</b>	<b>76.17</b>
7.	Improperly formulated conclusions (lack of connection with research results, too general)/ Niewłaściwie sformułowane wnioski (brak związku z wynikami badań, zbyt ogólne)	12	7.95	84.12
8.	Incorrect quantitative analysis (presentation of own results)/ Niewłaściwa ilościowa analiza własnych wyników (przedstawienia własnych wyników)	10	6.62	90.74
9.	Roughly prepared tables and/or figures (poor organization; illegible; font size)/ Niestarannie przygotowane tabele oraz rysunki (słaba organizacja; nieczytelne; wielkość czcionki)	8	5,3	96,04
10.	Improper or missing qualitative analysis (no discussion of own results with results of other scientists)/ Niewłaściwa lub brak jakościowej analizy wyników (brak dyskusji własnych wyników z wynikami innych autorów)	6	3.97	100.00
--	--	151	100	--

Source: own study.

Źródło: opracowanie własne.



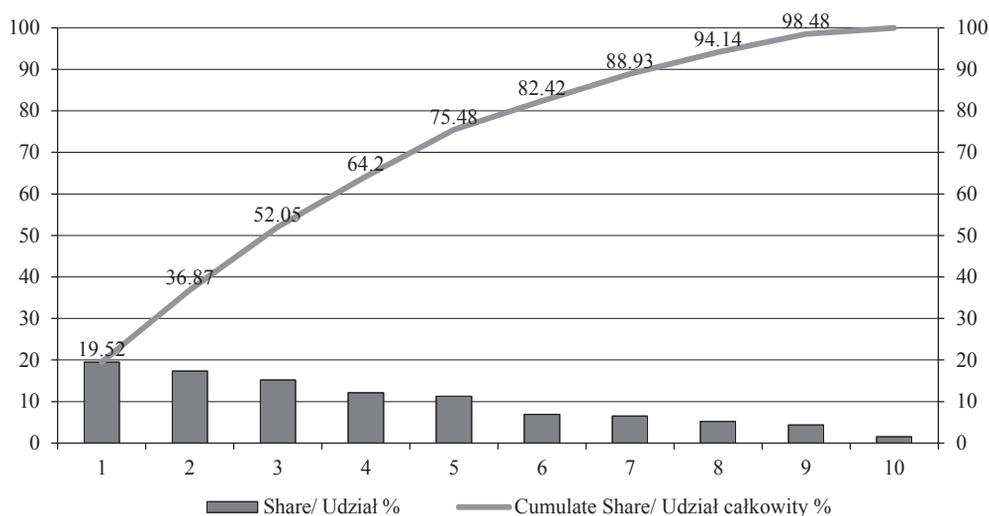
\* 1,2...10. Explanations as in Table 1/ Wyjaśnienia tak jak w Tabeli 1

**Fig. 1.** Pareto-Lorentz chart based on the data from Table 1

**Rys. 1.** Wykres Pareto-Lorentza na podstawie danych z Tabeli 1

Source: own study.

Źródło: opracowanie własne.



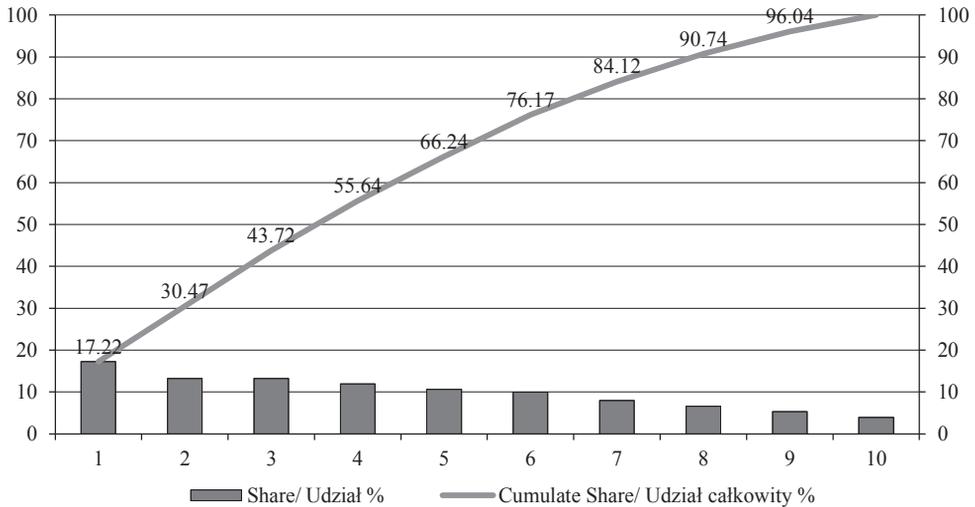
\* 1,2...10. Explanations as in Table 2/ Wyjaśnienia tak jak w Tabeli 2

**Fig. 2.** Pareto-Lorentz chart based on the data from Table 2

**Rys. 2.** Wykres Pareto-Lorentza na podstawie danych z Tabeli 2

Source: own study.

Źródło: opracowanie własne.



\* 1,2...10. Explanations as in Table 3/ Wyjaśnienia tak jak w Tabeli 3

**Fig. 3.** Pareto-Lorentz chart based on the data from Table 3.

**Rys. 3.** Wykres Pareto-Lorentza na podstawie danych z Tabeli 3.

Source: own study.

Źródło: opracowanie własne.

Pareto-Lorentz diagram does not adequately show the two or three most important non-compliances which in 80% of the cases determine acceptance or rejection of a publication. There are six guidelines in the first, second and third experiment (Table 1-3) which, in 80% of the cases, cause a negative evaluation of a manuscript. There are also differences in the results obtained in these experiments in the character of non-compliances or its importance. Table 4 presents non-compliances and errors (the first six taken from Table 1-3) which are responsible for the rejection of a manuscript in almost 80% of the cases.

The same non-compliances found by reviewers 1, 2 and 3 differed from 6.94% to 17.88%. The non-compliances found by two reviewers differed only from 1.10% to 6.62% (Table 4).

Among the most important non compliances are: unclear design of experiment, improperly formulated conclusions (lack of connection with research results, too general) and incorrect or missing qualitative analysis (no discussion of own results with the results of other scientists) (Table 1 and 4), lack of depth (superficial, unsophisticated), uninnovative (rehash; trivial; incremental) and not following the journal format (not following authors guide) (Table 2 and 4), errors in literature, no indication of importance of obtained results for practice and poor or incorrect statistical analysis (Table 3 and 4). For papers reviewed by the three referees, each element of the manuscript and all the basic rules of each journal should be very well prepared and/or considered by authors to meet the referees' and journal's expectations.

**Table 4.** Summary survey results: similar non-compliances (\*) or different non-compliances found in research by 1-3 reviewers  
**Tabela 4.** Zbiorcze wyniki badań: podobne nieprawidłowości stwierdzone w badaniach przez recenzentów 1-3

%	Research 1/ Badanie 1	%	Research 2/ Badanie2	%	Research 3/ Badanie 3
17.88	* Unclear design of experiment/ Niejasny opis eksperymentu	19.52	Lack of depth (superficial; unsophisticated)/ Brak głębi (powierzchowny; niewyszukany)	17.22	*** Errors in "Literature" section (not according to journal requirements)/ Błędy w „Literaturze” (niezgodny z wymaganiami czasopisma)
16.56	** Improper or missing qualitative analysis (no discussion of own results with the results of other scientists)/ Niewłaściwa lub brak jakościowej analizy wyników (brak dyskusji własnych wyników z wynikami innych autorów)	17.35	Uninnovative (rehash; trivial; incremental)/ Nieinnowacyjny (powtórzenie; trywialny; przyrostowy)	13.25	No indication of importance of obtained results for practice/ Brak wskazania znaczenia uzyskanych wyników dla praktyki
13.91	Improperly formulated conclusions (lack of connection with research results, too general)/ Niewłaściwie sformułowane wnioski (brak związku z wynikami badań, zbyt ogólne)	15.18	Journal format – template (not following authors guide)/ Format – szablon czasopisma (niezgodny z przewodnikiem dla autorów)	13.25	**** Poor or incorrect statistical analysis/ Slaba lub niewłaściwa analiza statystyczna wyników
10.60	*** Errors in "Literature" section (not according to journal requirements)/ Błędy w „Literaturze” (niezgodny z wymaganiami czasopisma)	12.15	* **** Poor statistical and experimental design and expression/ Slabe przedstawienie koncepcji eksperymentu i opracowanie statystyczne oraz interpretacja	11.92	Vaguely formulated objective and/or lack of hypothesis/ Niejasno sformułowany cel badawczy oraz hipotezy pracy
9.93	Roughly prepared tables and/or figures (poor organization; illegible; font size)/ Niestarannie przygotowane tabele oraz rysunki (slaba organizacja; niez czytelne; wielkość czcionki)	11.28	** Poor result discussion/ Slabe omówienie wyników	10.6	*** Incorrectly written abstract/summary (too short, superficial, with blank words or phrases)/ Nieprawidłowo napisane streszczenie (zbyt krótkie, powierzchowne, z pustymi słowami i frazami)
8.61	*** Incorrectly written abstract/summary (too short, superficial, with blank words or phrases)/ Nieprawidłowo napisane streszczenie (zbyt krótkie, powierzchowne, z pustymi słowami i frazami)	6.94	* Improper methodology/ Niewłaściwa metoda	9.93	* Unclear design of experiment/ Niejasny opis eksperymentu

\*Non-compliances found by reviewer 1, 2 and 3; unclear design of experiment, improper methodology (17.88%, 6.94% and 9.93%)/ Stwierdzone nieprawidłowości przez recenzenta 1, 2 i 3; niejasny opis eksperymentu, niewłaściwa metoda (17,88%, 6,94% i 9,93%). \*\* Non-compliances found by reviewer 1 and 2; improper or missing qualitative analysis (no discussion of own results with results of other scientists), poor result discussion (16.56% and 11.28%/o) Stwierdzone nieprawidłowości przez recenzenta 1 i 2; niewłaściwa lub brak jakościowej analizy wyników (brak dyskusji własnych wyników z wynikami innych autorów), słabe omówienie wyników (16.56% i 11,28%). \*\*\* Non-compliances found by reviewer 1 and 3; errors in "Literature" section (10.60% and 17.22%), incorrectly written abstract/summary (8.61% and 10.60%/o) Stwierdzone nieprawidłowości przez recenzenta 1 i 3; błędy w „Literaturze” (10,60% i 17,22%), nieprawidłowo napisane streszczenie (8,61% i 10,60%). \*\*\*\* Non-compliances found by reviewer 2 and 3; poor or incorrect statistical analysis (12.15% and 13.25%). / Stwierdzone nieprawidłowości przez recenzenta 2 i 3; slaba lub niewłaściwa analiza statystyczna wyników (12,15% i 13,25%).

Source: own study.  
 Źródło: opracowanie własne.

The differences in the frequency of particular noncompliances (or lack thereof) depend on the journals as well (e.g., some journals do not require indication of “future work” but require a clear statement on how the work will benefit the industry/consumers).

## 4. Conclusions

Apart from non-compliances in writing with a substandard presentation, we found poor experimental design and/or statistical analysis, lack of innovation and frequently committed errors in literature as well as intolerable weaknesses that formed the ground of rejection of a manuscript. From our point of view, none of the aforementioned elements of a manuscript is to be treated as trivial, and all the basic rules of a journal within the field of food science and technology should be adhered and carefully considered by the author so as to improve the probability of acceptance of the paper.

The Pareto-Lorentz principle “80/20” has no application in quality assessment of scientific manuscripts in the area of food technology. It was found that from 80% of rejected manuscripts by reviewers almost one from six among ten more often occurring analyzed non-compliances can be met. It results that in the case of reviewed scientific manuscripts we can say about reverse Pareto-Lorenz principle i.e. “80/60” rather than “80/20”.

In accordance with the existing trends and common sense, authors should concentrate on quality of their “product” and improve it constantly in order to meet the expectations of the readers, reviewers and editors.

A well written manuscript is like a story-telling – it encourages or discourages a visit, that is, whether it should be acted or not. The quality of writing is essential; a manuscript with even the most interesting and informative work is deniable unless it is well presented: a factual summary, an informative introduction, a clearly laid-out “materials and methods”, and a meaningful “results and discussion”.

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