

Criteria for the Sufficiency of a Research Article: Scientific Opinions

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Abstract

Researchers should present their research results in an understandable way to the reader. The content of the publication and the way it is conveyed is a criterion that reveals the value of the work. This also gives a hidden idea of the author's scientific level and his sufficiency in methodology.

Any question we know the answer to should not be chosen as a research problem. The first condition to talk about the existence of the problem is to perceive it, to be disturbed by it. In the Research Methodology, this is considered a “problem hit”. To prove knowledge, strong evidence is required. Statistics is the science that develops methods based on strong evidence.

Having a professional character is understood when the statements are short, concise, and clear. As a result, it is necessary to start researching within the framework of the views expressed, to analyze and to convey important information to the readers quickly.

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Researchers should present their research results in an understandable way to the reader. The content of the publication and the way it is conveyed is a criterion that reveals the value of the work. This also gives a hidden idea of the author's scientific level and his sufficiency in methodology. Even the most valuable insights are considered worthless when not well presented.

Elefteriades JA has the following articles on the subject in his publication titled “Twelve Tips for Writing a Good Scientific Paper”(1):

1. Good Underlying Research Question, 2. Brevity, 3. Abstract Conveys All Critical Information, 4. Avoid Excessive Literature Review, 5. A void Excessive Use of Figures, 6. One Cardinal Visual Image, 7. Careful Final Re-Reading, 8. Include Section on Weaknesses of Your Study, 9. Avoid Superlatives in Describing your Work, 10. The Editor is Always Right, 11. Statistical Consultation, 12. Do not be discouraged if your paper is rejected on one or more submissions for review.

Finding a solution to a research problem is not easy. After the problem is solved, it is incomprehensible when it is not presented with a clear expression. All the effort spent is wasted. **Albert Einstein** clarified this situation with his quote:

“The formulation of a problem is often more essential than its solution.” Albert Einstein

The value of a publication that deals with a current scientific problem, has a good research plan for the solution and conveys the results of the research in a written language that is clear to the reader according to the rules of methodology is indisputable. However, mastering all these is the product of good training and experience and takes a long time. It is noteworthy that there are not enough publications on this subject and that this issue is not sufficiently

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addressed during the education periods. For this reason, it has been tried to give information to guide young researchers in this regard.

How Should the Selected Research Problem Be?

The research problem chosen should be a situation that disturbs the individual physically or mentally and has the possibility of more than one solution. Any question we know the answer to should not be chosen as a research problem. The first condition to talk about the existence of the problem is to perceive it, to be disturbed by it. In the Research Methodology, this is considered a “problem hit”. It is not correct to look for the research problem in the library or literature. Library and literature are solution resources. The research problem is solved by establishing a good research team. A complex problem is multifaceted. It concerns several branches of science. Therefore, in the first step, a research team should be established from members of the relevant discipline. Usually, a statistician is consulted after data has been collected. It is wrong to collect data without determining the research design, hypotheses, selection of relevant variables and control of confounding variables, and the method of measurement of the data (2).

Scientific Opinions

The honor of being the "Father of Statistics" belongs to **Sir Ronald A. Fisher** (1890-1962). He has been described as "the great genius who laid the foundations of modern statistics". He had extreme myopia. Due to his illness, he was forbidden to work in the light. His math teacher, Roseveare, had led him to solve math problems at night without paper, pencil, or any vision material. In the history of statistical science, there has never been a statistician as skilled in mathematical statistics as Fisher. Because the mathematical skills of other statistical scientists were not so high, the solution in their work was difficult to follow easily and the proof of their theory was insufficient.

The methods he developed as a result of his statistical studies have been used in many branches of science and in solving applied problems. He significantly developed the mathematical theory of statistics.

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He defined the behavior of being original as important for educators, otherwise, he reported that it would be defined "as second-hand material". Here are **Fisher's** quotes, stating his teaching in scientific expertise and research (2):

The history of science has suffered greatly from the use by teachers of second-hand material, and the consequent obliteration of the circumstances and the intellectual atmosphere in which the great discoveries of the past were made. A first-hand study is always instructive, and often...full surprises",1955. (2,3).

To prove knowledge, strong evidence is required. Statistics is the science that develops methods based on strong evidence. Here's **Fisher's quote** for this view:

"When a biologist believes there is information in an observation, it is up to the statistician to get it out"

In the first step of the research; research design, sample size, sampling methods, hypotheses, assumptions, control of confounding variables, and determination of data in accordance with the criteria and research order should be organized based on the methods developed by strong statistical science. Here's **Fisher's quote** for this view:

"To consult the statistician after an experiment is finished is often merely to ask him to conduct a post-mortem examination. He can perhaps say what the experiment died of." (2,4).

The research must have the "completeness property". Transferring information that is not fully resolved in the mind causes confusion and inaccuracies. Here's **Fisher's quote** for this view:

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“... the fact is that when I cannot get a grip of a thing in my head I can very seldom make it go on paper.” (2,5).

Similarly, The second of seven habits addressed by **Dr. Stephen R. Covey** in his book "The 7 Habits of Highly Effective People" is:

“Begin with the end in mind” Stephen R. Covey

By starting with the end in mind, you can train yourself to be more goal-oriented and create a clear vision for yourself or your team (6).

Having a professional character is understood when the statements are short, concise and clear. Here's **Fisher's quote** for this view (2,7):

After all, it is a common weakness of young authors to put too much into their papers. — Sir Ronald Aylmer Fisher

The features that the referees pay attention to when submitting the article to a journal for publication: 1) the importance, timeliness, relevance, and prevalence of the issue addressed; 2) the quality of the writing style (ie, well-written, clear, understandable, easy to follow and logical); 3) the applied study design (ie the design is appropriate, rigorous and comprehensive); 4) how rigorous, focused and up-to-date the literature review is; and 5) using a large enough sample (8,9).

As a result, it is necessary to start researching within the framework of the views expressed, to analyze and to convey important information to the readers quickly.

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