JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Comprehensive Study of Research and Its Duplications in Work

Dr. Jayshri Patil
Assistant Professor, Dr. D Y Patil School of MCA, Pune, India

Mr. Naresh Agarkar
Technical Lead, IBM Corporation

Mrs. Shilpa Agarkar
Assistant Professor, Suryadatta Institute of Management and Mass Communication, Pune, India

Abstract: To avoid all kinds of manipulation in research information technology become an inevitable need to make research object-oriented. Although plagiarism softwares are used to check manipulation in research that has its limitations. The use of Information technologies be made mandatory to monitor research in Indian universities because crores of rupees in scholarships are given by UGC per year but in the name of research, only repetition is going on. Various Information technologies may be helpful to coordinate research among different universities of the world. In research inherent potentially of mind play a vital role. Reasoning and realization inherent potentially of mind play a vital role. Reasoning and realization inherent property of mind but research methodology is used to test validity of research so major role in research is played by mind but research methodology is only mechanical tool to determine the track of research. Any kind of corruption in research may be checked by using various intelligence technology in research field.

***Keywords*: Information Technology, Research Methodology, reasoning, realization, Mind Potentiality.**

I. INTRODUCTION

Research is an avenue for generating innovative ideas, but it often suffers from conceptual similarities, leading to a decline in its effectiveness. However, the use of artificial intelligence and other technologies has mitigated repetitive research by enabling exploration of new perspectives. The UGC supports researchers through scholarships, facilitating the study of ideas that promote social and environmental progress. Moreover, research methodology and best practices play a crucial role in understanding research and its impact across different industries.

1. Duplications in Research:

Artificial intelligence and other advanced technologies contribute to the enhancement of human intelligence through machine processing and the advancement of computer systems. These technologies find applications in natural language processing, speech recognition, and machine vision. Information technologies can be used to prevent corruption in administration and research.

Plagiarism software is commonly employed to detect duplications and similarities in research, such as copied content from websites, previous research, blogs, or other online sources. However, this software is not effective in identifying similarities in research ideas. Researchers may use plagiarism checking techniques to find similarities but often resort to modifying the descriptive theme of their research. Consequently, the research work ends up being repetitive due to duplicated ideas. Information technologies employing specific techniques can help identify repetitive research by analyzing ideas and concepts.

It is unfortunate that the practice of duplication has become a nuisance in various writing domains, including scientific research. Even after discovering instances of plagiarism, writers involved in such unethical practices may simply observe without taking appropriate action. Some individuals engage in copying activities due to limitations or a lack of focus on their intended purpose.

Jealousy and envy-driven individuals may resort to unhealthy actions to satisfy their personal glory. It is crucial for scientific researchers to be cautious and vigilant in order to avoid such misconduct in their work. If a researcher identifies any instances of misconduct, it is advisable to exercise their rights and seek legal recourse through copyright laws, imposing significant penalties to discourage such unhealthy actions in the realm of duplication.

II. RESEARCH METHODOLOGY:

Research is conducted following specific sections and adhering to rules and regulations to ensure the study is carried out with a significant level of importance.

Research Methodology serves as a guide for researchers to conduct their studies. It outlines how researchers formulate their problem, establish objectives, and present their results based on the data collected during the study. This methodology encompasses the research design, strategies, data sources (both primary and secondary), considerations for population and sample size determination, data collection methods, data analysis techniques (quantitative and qualitative), reliability and validity analysis, ethical considerations, and result dissemination.

To fulfill the study's objectives, a combination of qualitative and quantitative research methods is generally employed. This mixed-method approach allows for data collection from various sources over the course of the study. The methodology aims to align with the researcher's research plan and goals. However, it is not always followed diligently in practice.

Sometimes, researchers fail to focus on a specific subject area and its desired outcomes. This leads to multiple researchers working on the same subject or problem. In other cases, research work is duplicated, with slight variations or changes in data, published in different publications. Such scenarios often spark discussions about the wastage of resources due to duplicated research work. Suggestions from experts are sought to improve the monitoring mechanism for scientific research.

One way to address excessive duplication is to evaluate the stream of publications from the same researcher who reformulates the same content under different titles and dispositions but with identical data and theory. This practice can be confusing for readers and is likely done to appear more productive, even though it only adds confusion. Additionally, researchers often cite their own papers extensively, even when they come from the same author. Such issues could be easily resolved since they originate from a single source. However, there is often a greater emphasis on the number of articles written rather than the uniqueness of the content. Authors should focus on producing fewer but higher-quality papers, which would contribute to addressing this concern.

2 Research work includes following points:

Researchers should follow a systematic and effective approach to complete their research work, addressing problem statements and ensuring a comprehensive study. The following points outline key considerations in the research process:

2.1 Research Design

Information Technologies play a crucial role in research design by identifying similarities and dependencies among stakeholders' work and research areas. This helps avoid duplication of research work and the publication of already published findings. The research design serves as a framework for the study, and decisions regarding research approach are important in obtaining relevant information. For example, a mixed methods approach may be employed, combining structured questionnaires, interviews with key stakeholders, and field observations.

The research design in this study employs a descriptive approach to assess the effects of an occupational safety and health management system on employee well-being and property damage in selected manufacturing organizations. Descriptive research aims to provide an accurate profile of individuals, events, or situations. This design allows researchers to gather data from a wide range of respondents, analyzing the impact of safety and health on manufacturing industries. The overall research design and flow process are depicted in Figure 1.

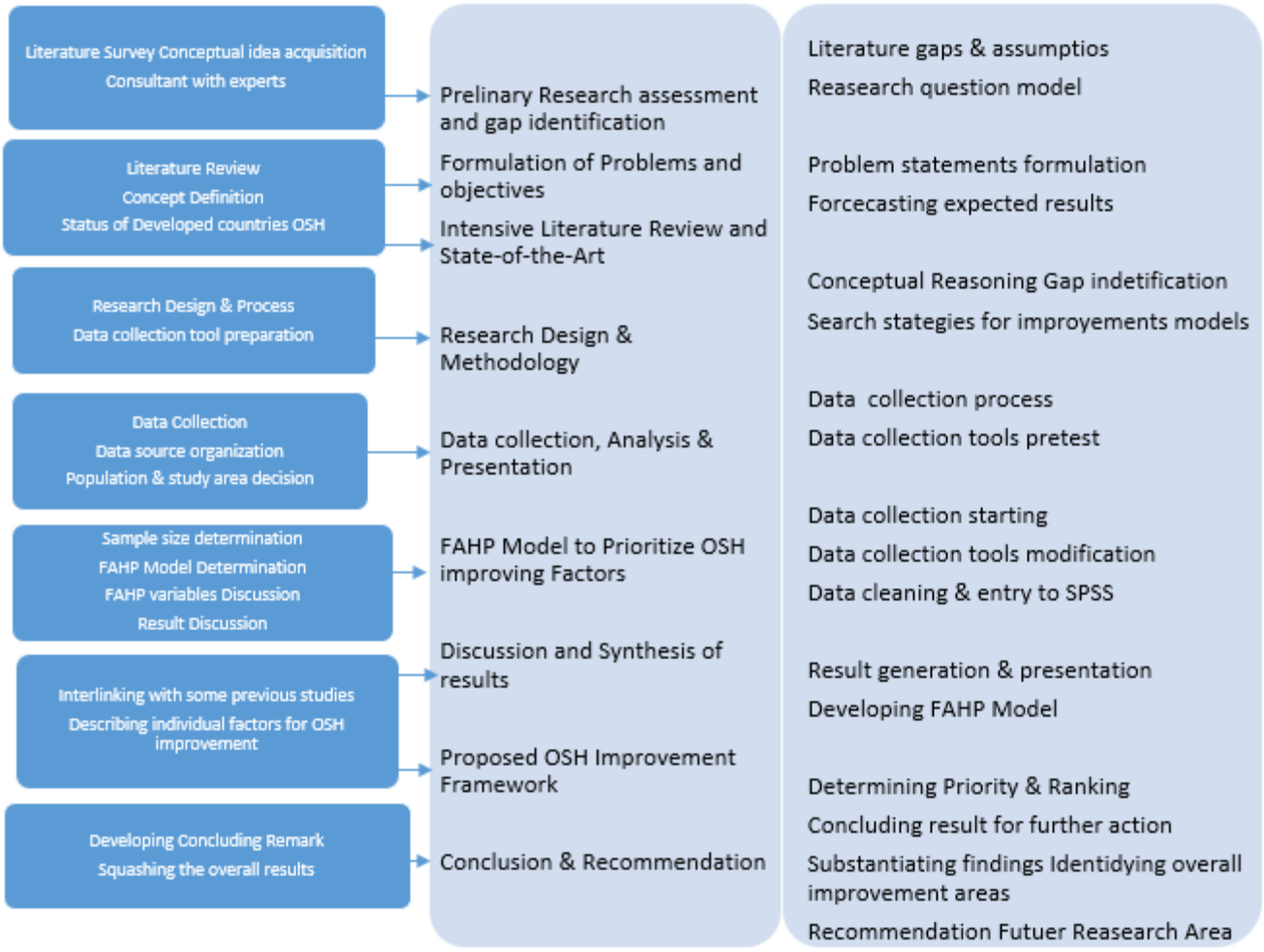

fig 1: research methodology

To achieve the primary research objectives, a combination of qualitative and quantitative methods was employed, along with the utilization of both primary and secondary data sources. The qualitative data provided support for the analysis and interpretation of the quantitative data, leading to triangulated results. By incorporating both qualitative and quantitative data types in the analysis, the researcher ensured a comprehensive approach. The study area, data sources, and sampling techniques were thoroughly discussed within this section.

2.2 The Study Area:

The study area refers to the population or set of individuals with common characteristics that the researcher is interested in. The population for the study is determined through random sampling. In this case, data collection was conducted in selected manufacturing industries in Addis Ababa, taking into account potential accidents and the specific industry types.

2.3 Data Sources :

2.3.1 Primary data::

Primary data is obtained directly from the original source of information, making it more reliable for decision-making. Primary data sources in this study include the working environment of industries (through observation, pictures, and photographs) and interviews, questionnaires, and discussions with industry employees (management and workers).

2.3.2 Secondary data:

Secondary data is collected from various sources, such as reports, project documents, literature, reputable journals, books, articles, websites, and other relevant sources. A desk review is conducted to gather secondary data, including working documents, manuals, procedures, reports, statistical data, policies, regulations, and standards. These sources are utilized to complement the primary data collected.

Overall, the research study incorporates a combination of qualitative and quantitative methods, utilizing primary and secondary data sources. The study area, data sources, and sampling techniques are important considerations within the research methodology.

3. Population and Sample Size:

The terms "population" and "sample size" refer to the total number of respondents and the scope of the sample selected for the study.

Example of Manufacturing industries and respondents for the study:

3.1 Population:

The study population consisted of employees in manufacturing industries located in and around Addis Ababa city, which is known for its representative industrial clusters. The selection of representative manufacturing sectors was based on the likelihood of accidents, determined through a combination of random and purposive sampling. The population of the study included textile, leather, metal, chemical, and food manufacturing industries. A total of 189 manufacturing industries responded to the questionnaire survey from priority areas identified by the government. The sample sizes were determined randomly and disproportionately, with 80 from wood, metal, and iron works; 30 from food, beverage, and tobacco products; 50 from leather, textile, and, garments; 20 from chemical and chemical products; and 9 from other remaining clusters of manufacturing industries.

3.2 Questionnaire sample size determination:

Both simple random sampling and purposive sampling methods were employed to select representative manufacturing industries and respondents for the study. Simple random sampling ensured that each member of the population had an equal chance of selection, while sample size determination procedures were used to obtain optimum and reliable information. The researchers utilized both probability (simple random sampling) and nonprobability (convenience, quota, purposive, and judgmental) sampling methods due to the diverse nature of the industries and data sources. This multimethod approach facilitated triangulation of the data and increased the reliability of the research outcomes and decision-making. Selection criteria included factors such as the establishment time of companies, their engagement in operations, number of employees, ownership type (government or private), type of manufacturing production, resources used, and location within the city.

The determination of the sample size followed the formula suggested by Daniel and Cochran for an unknown population size (Eq: 1). The formula is as follows:

$$n = (Z^2 * p * (1-p)) / (d^2)$$

Where: n = sample size, Z = statistic for a level of confidence, p = expected prevalence or proportion, d = precision.

For a level of confidence of 95% (conventional), the Z-value is 1.96. The investigators presented their results with a 95% confidence interval (CI).

The expected sample size was calculated as 267 with a marginal error of 6% for a 95% confidence interval of manufacturing industries. However, after rejecting some data with significant missing values, the actual data collection resulted in a population of 189, which represented a 71% response rate. The 267 population was considered satisfactory and representative for the data analysis.

4. Data Collection Methods:

The data collection methods utilized in this research encompassed various techniques, focusing on both primary and secondary data, as described in the previous section. The data collection procedures were devised and prepared with meticulous attention to detail.

4.1. Primary data collection methods:

Primary data sources consisted of qualitative and quantitative data. Qualitative data sources included field observations, interviews, and informal discussions. Quantitative data sources involved survey questionnaires and interview questions. The subsequent section provides a detailed account of how the data were obtained from these primary sources.

- *Workplace site observation data collection:*

Observation is an essential component of scientific research, and various sources can be utilized, such as documentation, archival records, interviews, direct observation, and specific observation. Observation findings are considered highly valid as they allow the researcher to gather in-depth information about specific behaviors. In this dissertation, the observation method was employed as a means of collecting information and data prior to questionnaire design and throughout the research process. The researcher conducted more than 20 specific observations in the manufacturing industries within the study areas. These observations provided a deeper understanding of the work environment, different sections of the production system, and occupational safety and health (OSH) practices.

- *Data collection through interviews:*

Interviews are loosely structured qualitative, in-depth discussions with individuals who possess significant knowledge about the topic of interest. Conducted in a face-to-face setting, semi-structured interviews enable researchers to gain new insights, ask probing questions, and explore phenomena from different perspectives. They allow researchers to delve into the intricacies of the current working environment, influential factors, and consequences. Interviews also provide opportunities to refine data collection efforts and examine specialized systems or processes. This qualitative approach was adopted in this dissertation, with interviews conducted with employees, management personnel, and technicians on a face-to-face basis at their workplaces. All interviews were recorded and transcribed for analysis.

- *Data collection through questionnaire:*

Questionnaires serve as the primary tool for gathering primary information in practical research, allowing researchers to select the sample and design the questions. In this dissertation, respondents were asked to provide their responses to an identical set of questions, which were mixed to prevent bias. Initially, the questionnaire design was coded and structured around specific topics with a uniform structure. Consequently, the questionnaire yielded valuable data necessary for achieving the objectives of the dissertation.

The questionnaire employed in this research utilized a five-item Likert scale. Respondents were asked to rate each statement using a five-point Likert-type scale, where 1 represented "strongly disagree" and 5 represented "strongly agree." The responses were aggregated to generate scores for the measures.

- *Data obtained from experts' opinion*

Data were also collected through expert opinions related to knowledge comparison, management practices, collaboration, and technology utilization, including their sub-factors. This data was utilized for prioritization and decision-making regarding occupational safety and health improvements. The prioritization of factors was accomplished using the Saaty scale (ranging from 1 to 9) and then converting it to fuzzy set values based on previous researchers' work using a triangular fuzzy set.

- *Workplace site exposure measurement*

The researcher conducted measurements of various workplace environmental factors such as dust, vibration, heat, pressure, light, and noise to assess their levels. The planned and actual coverage of primary data sources is compared in Table 1.

Table 1. variables of coverage

Instrument	**Planned**	**Actual coverage**	**Success level**
Interview / discussion	15	13	87%
Survey questionnaires	267	189	71%
Observation	20	18	90%
Workplace site exposure measurement	20	20	100%

The response rates for the proposed data sources were satisfactory, and the pilot test confirmed the reliability of the questionnaires. The interview/discussion response rate among respondents was 87%, the survey questionnaire response rate achieved was 71%, and the field observation response rate was 90% throughout the entire data analysis process. Hence, the quality of data organization was maintained.

The response rate obtained in this study is considered representative of organizational studies. As the study acknowledges a response rate of 30% as acceptable, the achieved response rate is deemed satisfactory. It is worth noting that low response rates should not discourage researchers, as many published research works also exhibit low response rates. Therefore, the response rate in this study is acceptable and highly beneficial for achieving the study objectives.

- *Data collection tool pre test*

A pretest was conducted to validate the questionnaire, interviews, and other data collection tools, ensuring that the content was understood by the respondents. This process ensured content validity, where the questions aligned with the researchers' intended outcomes, and external validity, allowing the results to be generalized to the population based on the survey sample. The pretest was conducted before commencing the actual data collection. Based on the feedback received, minor adjustments were made to the originally designed data collection tools. The questionnaire test involved a pilot test with a randomly selected sample of 10 individuals from the target sectors and experts.

- *Secondary data collection methods*

Secondary data refers to data collected by sources other than the researcher. This data source provides insights into the current state-of-the-art methods in the research area and identifies research gaps that need to be addressed. Secondary data sources can include internal and external information covering a wide range of areas. In this dissertation, extensive literature reviews, desk reviews, industry documents, and reports were conducted to fulfill the research objectives. The methodological approach involved content analysis, combining quantitative and qualitative aspects to assess structural and content criteria.

Articles were selected based on title, keywords, and abstracts, and the remaining articles were thoroughly reviewed. Information was extracted regarding the instruments used to assess the dimensions of research interest. A comprehensive list of items was compiled for each research target or objective, and any missing elements were identified and reviewed.

5. Methods of Data Analysis:

The data analysis process followed the procedures outlined in the sections below, aiming to address the fundamental questions raised in the problem statement.

5.1 Quantitative data analysis:

Quantitative data, obtained from both primary and secondary sources as discussed earlier, were analyzed using various tools such as Excel, SPSS, and Office Word. This analysis focused on numerical and quantitative data.

Before conducting the analysis, responses were coded and organized for ease of interpretation. The data collected from the questionnaires were coded in the SPSS software, employing a predefined coding scheme. Each response was assigned a corresponding numeric or character symbol based on the selection made. This coding process was applied to all relevant questions. Once completed, the data were entered into the statistical analysis software package, SPSS version 20.0 on Windows 10, for further analysis.

Descriptive statistics and graphical analysis were employed to explore the data. This involved examining the relationships between variables and comparing how different groups influenced each other. Cross-tabulations, chi-square tests, correlation analysis, factor analysis, and nonparametric statistics were utilized during this phase.

5.2 Qualitative data analysis:

Qualitative data analysis was used to complement and triangulate the findings obtained from the quantitative data analysis. Interviews, observations, and reports were utilized to support the overall findings. The analysis of qualitative data was integrated with the discussion of quantitative results within the data analysis section.

5.3 Data analysis software:

The data were entered and analyzed using SPSS software on Windows 10. The utilization of SPSS software greatly facilitated the analysis process and contributed to the validity and accuracy of the results. The software enabled the analysis and comparison of results across different variables included in the research questionnaires. Additionally, Excel was employed to create visual representations and perform certain analytical calculations.

6. The Reliability and Validity Analysis of the Quantitative Data

- **Reliability of Data:**

Data reliability refers to the extent to which measurements are free from bias and consistently provide accurate and precise results across different items and over time. The researcher conducted reliability analysis to assess the stability and consistency of the data. Reliability can be defined and evaluated in various ways, but the overarching goal is to ensure consistent and reliable measurement during the data analysis process.

- **Reliability analysis**

Cronbach's alpha, a measure of internal consistency, was employed to assess the degree of interrelatedness among a group of items. It is commonly used as an indicator of scale reliability. The researcher calculated Cronbach's alpha to determine the internal consistency of the measurements.

- **Validity analysis**

Validity refers to the extent to which an instrument accurately measures what it intends to measure in terms of relevance. The researcher took steps to ensure validity when developing the instruments for the study, eliminating ambiguities and employing appropriate language and concepts to enhance clarity and overall suitability. The measuring instruments were also reviewed by the research supervisor and an occupational health expert to assess their validity on face value.

The development of the measuring instruments was guided by a review of relevant literature on compliance with occupational health and safety conditions and data collection methods. Additionally, a pretest study conducted prior to the main study helped identify and address any uncertainties or issues with the content of the measuring instruments. The researcher collaborated with a statistician and the research supervisor, along with other experts in the field, to thoroughly review the measuring instruments and ensure that all relevant concepts were adequately represented, thereby enriching their validity.

7. Data Quality Management

The data collectors were provided with guidance on approaching companies, and questionnaires were distributed to various institutes and industrial experts. Supervision was conducted during data collection to ensure that the data collectors handled the questionnaires appropriately. Each filled questionnaire was carefully reviewed to ensure completeness, accuracy, clarity, and consistency.

8. Ethical Consideration

Ethical clearance was obtained from the School of Mechanical and Industrial Engineering at the Institute of Technology, universities, and official letters were written to the participating manufacturing industries. The purpose of the study was clearly explained to the participants, emphasizing that the information provided would be kept confidential and their identities would remain anonymous. Informed consent was obtained from each participant. The assessment findings related to poor working environments will be shared with the manufacturing industries involved in the study, and a copy of the results will be provided to the respective manufacturing industries' and ministries' offices. Individual respondent privacy and responses were not individually analyzed or included in the report.

9. Dissemination and Utilization of the Result

The findings of this study will be presented to relevant stakeholders, such as the School of Mechanical and Industrial Engineering and Ethiopian Manufacturing Industries. The results will also be communicated to the Ministry of Labor and Social Affairs, Ministry of Industry, and Ministry of Health, which provided the data for the study. Additionally, the results will be disseminated through publication and online presentations on platforms like Google Scholars. As part of the research completion, approximately five articles have been published and shared worldwide.

CONCLUSION

The research methodology and design outlined the overall process of the study, including the data sources and collection methods used. The research strategies and framework provided a foundation for researchers to consider when conducting their own studies. This research flow serves as a sample and model for data collection and the entire research process, from problem formulation to validation. It is particularly helpful for new researchers in understanding the research environment and methodology. The use of information technologies can assist in validating research ideas and avoiding duplication in terms of research names and concepts.

REFERENCES

[1] Wayne Holmes, Maya Bialik, Charles Fadel, " Artificial Intelligence In Education", Center for Curriculum Redesign

[2] Uwe Flick, "Introducing Research Methodology"

[3] https://app.enago.com/homepage/i/8904/artificial-intelligence-research-publishing

[4] https://www.ibm.com/in-en/services/artificial-intelligence?p1=Search&p4=43700065413701422&p5=b&gclid=Cj0KCQjwvaeJBhCvARIsABgTDM5497VUFuFIkJV1m177vXuQvu-KLK2XvXgcE0XW7euoz-jzOFCBRSgaAutHEALw_wcB&gclsrc=aw.ds

[5] https://www.enago.com/academy/artificial-intelligence-research-publishing/

[6] https://www.turing.ac.uk/research/research-programmes/artificial-intelligence-ai

[7] Azoulay, P., Graff Zivin, J. S., & Manso, G. (2019). Incentives and creativity: Evidence from the academic life sciences. Journal of Political Economy, 127(5), 2325-2370.

[8] Bollen, J., Crandall, D., Junk, D., Ding, Y., & Börner, K. (2017). Science mapping analysis and visualization software tools: A review of features and functionalities. Journal of Data and Information Science, 2(2), 1-40.

[9] Bornmann, L., & Daniel, H. D. (2009). The state of h index research: Is the h index the ideal way to measure research performance? EMBO Reports, 10(1), 2-6.

[10] Ioannidis, J. P. A. (2005). Why most published research findings are false. PLoS Medicine, 2(8), e124.

[11] Kukkonen, J., Kärkkäinen, H., Anwar, M. Z., & Härkönen, A. (2019). Fraudulent behavior in scientific publishing: A systematic literature review with recommendations for research. Research Policy, 48(5), 104084.

[12] Moed, H. F. (2018). The Journal Impact Factor and alternative metrics: A variety of bibliometric measures to improve impact assessments of journals. In Proceedings of ISSI 2017. 16th International Society of Scientometrics and Informetrics Conference (pp. 29-38).

[13] Resnik, D. B., Rasmussen, L. M., & Kissling, G. E. (2015). An international study of research misconduct policies. Accountability in Research, 22(5), 249-266.

[14] Steneck, N. H. (2018). ORI Introduction to the Responsible Conduct of Research. US Department of Health and Human Services, Office of Research Integrity.

[15] Teixeira da Silva, J. A., & Dobránszki, J. (2019). Problems with traditional science publishing and finding a wider niche for post-publication peer review. Accountability in Research, 26(6), 371-388.

[16] Van Noorden, R. (2017). China cracks down on fake peer reviews. Nature, 546(7658), 305-306.