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The Consequences of Data Fabrication and Falsification among Researchers

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Abstract

Purpose: The experience by a researcher highlighted steps is guided by a specific ethical codes of conduct. The purpose of the current study is to discuss the fabrication and falsification of data as the key ethical misconduct committed by many researchers focus on their causes and impact in the research field. **Research design, data and methodology:** To obtain suitable textual resource, the current study used content analysis to closely take a look at the fabrication and falsification based on prior research in the realm of publication ethics. As a result, the current authors could collect and understand adequate textual data from appropriate prior resources. **Results:** The Research misconduct is a common practice in different countries across the world. Based on the findings from this study, data fabrication or falsification have a grievous impact on all the stakeholders of a study. The unethical behavior affects the parties concerned both psychologically and financially. **Conclusions:** It is, therefore, recommended that researchers should be held accountable. This can be done through different means, including raising awareness of vulnerability to data fabrication and falsification. The government and research institute should also advocate for effective policies guiding research studies across the world.

Keywords : Publication Ethics, Data Fabrication, Data Falsification.

JEL Classification Code : I29, O30, O39.

1. Introduction

Academic research is a step by step process involving key elements of the research studies. The common elements include study design, data collection and analysis process. The analyzed data is therefore published by appropriate body (Redman, 2013). The experience by a researcher highlighted steps are guided by a specific ethical codes of conduct. The Committee on Publication Ethics (COPE) is the responsible body mandated with the task of developing appropriate code of conducts (Sengupta & Honavar, 2017). As an international forum, COPE also guides other key stakeholders of research studies which include editors and publishers. The common forms of research misconduct include fabrication, falsification, and plagiarism of data.

Fabrication is commonly referred to as the act of making up data and reporting the make-up data as the correct data. This is common among the interviewers and researchers of the study. Falsification, on the other hand, refers to the practice of changing or omitting the collected data to present an incorrect research result (Martyn, 2003). This is common among the scientific researchers where the laboratory assistance tries to please their bosses by providing data they believe or desire to achieve. Finally, plagiarism is the appropriation or using another's idea without giving proper editing. Proper editing, in this case, includes a proper citation or proper quotation of the original document. Commonly, it occurs when an individual

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performs an unoriginal study and recycled the already published words to describe the fake study. This paper, therefore, discusses the fabrication and falsification of data as the key ethical misconduct committed by many researchers focus on their causes and impact in the research field.

2. Data Fabrication

Data fabrication is the act of making up data and reporting the made-up data as a true reflection of never conducted research study. Fabrication commonly occurs when a researcher fills out the experiment with personal assumed data. The studies might have not been performed or performed artificially with inflated numbers (Martyn, 2003). There have been several reports fabricated data as reported by different editors and publishers across the world. The cases of fabricated data are complex to investigate. Data fabrication is common for both the academic and scientific research studies. Nevertheless, editors and publishers have reported several fabrication cases across the world.

In Japanese, for instance, Yoshitaka Fujii, a Japanese researcher, was found guilty of data fabrication (Pellegrini, 2018). Fujii was a renowned associate professor of anesthesiology. Through the investigation, Fujii was found to have fabricated data of more than 180 studies he reported to have conducted. The retraction of Fujii's paper is believed to be the record holder of the number of retracted papers from a single author. Apart from Fujii, Diederik Stapel was also found culpable in the fabrication of data. Stapel was a renowned professor of sociology having taught at Tilburg University. The former professor was found guilty of scientific misconduct leading to over 50 of his publications retracted. It is through Tilburg University in Netherland that Stapel was found guilty for the crime.

2.1. Common Causes of Data Fabrication

Researchers may fabricate data for many reasons. Unlike other unethical conduct, data fabrication is are undertaken by immoral and moral individuals (Gerrets, 2016). The act can be a result of low funds and remuneration to the fieldworkers, lack of institutional moral support, or as a result of social and political conditions within the research area limiting the fieldworkers from obtaining data. Focusing on the financial aspect, fieldworkers may present fabricated data due to low funds by the sponsor (Gerrets, 2016). Normally, low funds demoralize researchers from performing the assigned duties perfectly. The low funds force the fieldworkers from researching as per the expectation of the sponsor for fear of using their funds. They instead fabricate the number of respondents to convince the researcher for an effective study. Finance remains a key factor in conducting a qualitative study.

The social and political conditions in an area can also limit a fieldworker from obtaining actual data for a study. In chaotic regions, for instance, Eastern Europe and part of the Middle East, there is limited protection on researchers, especially those conducting research studies on issues affecting the social life of the citizens (Martyn, 2003). An investigation of corruption cases in such regions have always been complex task with several fieldworkers' workers being captured, tortured, and to extreme cases killed.

The fear of such uncouth behavior by the government or group of people has always forced such fieldworkers from reporting fabricated data. Iran has always been at the forefront of arresting researchers from other countries. Recently, the Iranian government announced to have arrested American Doctoral researcher months after missing. Wang was charged for spying for the U.S. Apart From Wang, the Iranian government arrested Roland Marchal, a French anthropologist researcher for charges which have not been made public yet.

Conversely, the arrest of Prof Charles Lieber by the American government is what shocked the world researchers highly. Lieber was charged for lying to the U.S. government over the Chinese involvement in his project. All these acts by the governments have extensively contributed to the reports of fabricated data. Notwithstanding, interviewers have been prone to reporting fabricated data because most of them have no vested interest in the quality of the data and research output. The common remuneration method for the interviewers is usually based on the number of completed interviews. Avoiding asking sensitive questions that might provoke an abusive response is also one of the common causes of researchers reporting fabricated data.

Notwithstanding, data fabrication can also occur as a result of the absence of national policies on scientific misconduct. Publication incentives policies tend to guide and control researchers from engaging in unethical behavior of omitting or adding data to achieve a presumed result (Sengupta & Honavar, 2017). Countries with structured and legally enforceable policies against scientific misconduct tend to have minimal cases of data fabrication as compared to those with no guiding policies on scientific tests.

3. Data Falsification

Data falsification is the manipulation of the research data to give a false impression of the study. It includes manipulating images, removal of outliers, changing of data,

adding or removal of data points among other unethical practices. The falsification behavior is common for scientific studies as a laboratory assistant tend to secure their jobs by providing pleasing results based on the study hypothesis. Unlike data fabrication, detecting data falsification, especially for the scientific experiment, is always difficult since it may be detailed.

Nevertheless, editors and publishers have identified several falsification cases across the world. In the year 2010, the British General Medical Council (GMC) found Andrew Wakefield guilty of providing falsifying reports on his on the link between the measles, mumps, and rubella (MMR) vaccine and autism and his subsequent anti-vaccination activism published at Lancet. Wakefield's misconduct led to his deregistration by the UK medical register. Wakefield actions led to a massive drop in vaccination rates across the world, with several cases witnessed in U.S, UK, and Ireland. The vaccination drop led to a rise in measles and mumps infections, resulting in serious illness and deaths.

Apart from the Wakefield case, in 2014, Riken, a Japanese government research institute, launched an investigation on the publicized controversy claim of science blogs and social media users over the claimed doctored images and chunks text lifted from other papers by Haruko Obokota. Obokota claimed to have conducted a study on the stimulus-triggered acquisition of pluripotency (STAP) cells. In her study, Obokota claimed that STAP cells could be grown into tissue and use in other parts of the body. These scientific claims by Obokota were found to be fraudulent, and she was found guilty of scientific misconduct (Meskus, Marelli & D'Agostino, 2018). The institute concluding remarks termed Obokota as not only lacking a sense of research ethics but also broke the ethical codes of scientific research. The verdict of the case led to the mysterious death of Yoshiki Sasai, who committed suicide of what was seen as an embarrassment. Sasai was Obokata's mentor, supervisor, and co-author of the falsified study.

4. Consequences of Data Fabrication and Falsification in the Research Study

Research misconduct is not only illegal but detrimental to human life. Research misconduct may affect or erode the trust between researchers, funding agencies, and the general public. Data fabrication or falsification constitutes a failure to adhere to scientific values (Sengupta & Honavar, 2017). The impact of research misconduct can be analyzed through the damage to the individuals, the reputational cost to the employer, which involves publishers and editors of the paper, financial costs, opportunity cost, and extensive social costs.

Focusing on the individual cost, scientific misconduct results in a wasted effort of researchers' publishers among other stakeholders who trusted the fabricated paper. (Stacey, 2016) The cost revolves around the time and effort of the staff members, editors, reviewers, and individual researchers themselves (National Academies of Sciences Engineering and Medicine, 2017). The individual found guilty of scientific misconduct may be jailed or restricted from conducting any other research study for life (Gerrets, 2016). Their careers are damaged, and they are rendered jobless for life. The measure of wasted effort is realized on the extent to which the fabricated materials are cited. Like in the case of Fujii, the retraction of more than 180 papers was costly. The indirect cost was majorly on the many cited studies which were done by other researchers. To correct the mistake committed by a single researcher may be cost and tiresome, especially for more than a single paper. It would mean that the researchers who cited the fabricated papers must correct their papers or risk being treated as false studies as well.

Research misconduct also results in reputational costs on external stakeholders. The impact of the cost may include losses associated with prestigious experience by a specific research institute (Martyn, 2003). Like in the case of Obokota, the Riken research institute's reputation was destroyed. Even though the culprits were punished as others committed suicide, the trust the public had for the institute was eroded. Obokota was a renowned researcher at Riken, it was believed that she must have contributed to other studies which might as well have been fabricated. For Obokota's supervisor, the embarrassment was too must that he could not hold and resort to committing suicide as the solution to the crimes committed by the researcher. In extreme cases, some organizations are closed down, especially private firms, as a result of research misconduct. The closure of the organization may be an individual decision or decisions made by the government. Like in the case of Wakefield, the government decided that the researcher should not operate or practice medicine within the United Kingdom jurisdiction.

The fabricated or falsified data also have a substantial impact on the financial cost. Scientific research studies are always funded by private organizations, governments, or research institutes (Martyn, 2003). In the event that the funded study is retracted over the allegation of fabrication and falsification, the funds subjected to the study will be a waste. Apart from the finances lost through sponsorship programs, the additional cost incurred on the investigation process and money paid for the litigation is a direct cost expense incurred on research misconduct (National Academies of Sciences Engineering and Medicine, 2017). The cost involves is in billions, which could have been used to fund other viable studies. In some cases, the cost might

be high, leading to a slow investigation process, which in the long run, results in more damage caused by the fabricated or falsified paper. The high cost incurred on fabricated papers may lead to bankruptcy for some organizations, especially those that are on business.

Apart from the direct financial cost, research misconduct may also result in social costs among the researchers and the entire stakeholders. The social cost is highly realized in biomedical research studies (Stacey, 2016). Like in the case of Andrew Wakefield, who claimed that there is a link between the measles, mumps, and rubella vaccine was costly to the society. Some of the highlighted social costs resulting from the Wakefield misconduct include public health costs and deaths. Many died as a result of the Wakefield actions. The deaths were as a result of the rising number of cases of measles as many stopped using the vaccine. Further, the actions of researchers like Wakefield are quite detrimental for society as it erodes the trust of the researchers by the public members.

4. Conclusion

The Research misconduct is a common practice in different countries across the world. As discussed above, many researchers have been found guilty of different research misconduct (Redman, 2013). Others have been charged as some deregistered and prohibited from participating in any research study. In relevance to this paper, it was found out that the common misconduct committed by many researchers include data falsification and data fabrication. Data are fabricated or falsified due to many reasons. Fieldworkers, for instance, may fabricate or provide false data due to moral concerns and poor morale during the exercise. Others also commit the crime intentionally as a punishment for a specific group. As far as the research misconduct is a common practice, it is always complex and costly to detect the forms of research misconduct.

Based on the findings from this study, data fabrication or falsification have a grievous impact on all the stakeholders of a study. The unethical behavior affects the parties concerned both psychologically and financially. It is, therefore, recommended that researchers should be held accountable. This can be done through different means, including raising awareness of vulnerability to data fabrication and falsification. The government and research institute should also advocate for effective policies guiding research studies across the world.

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