

# Free research paper about hypothesis testing errors

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## **Abstract**

Researchers conduct researches on the basis of an ideology that seems to exist. During the study, researchers formulate a hypothesis, in which they state the existence or non-existence of the phenomena under study. For a good research, the researcher has to state the null and the alternative hypothesis. It is on the basis of these classes of hypothesis, that an error is classified as a type 1 or type 2 error. The type one error is based on the null hypothesis. The null hypothesis is a hypothesis that affirms the relationship between phenomena. In the case that a researcher accepts the null hypothesis, he or she accepts the null hypothesis where he or she should have accepted it. The type two error is committed where the alternative hypothesis, which denies relationship between phenomena, is accepted rather than being rejected.

A good example of a detrimental consequence of committing a type one error is the case of a company that conducts a research on the relationship between sales made and the presentation of an outlet and concludes that the more presentable an outlet is, the more the sales made. In this case, the company directs a large amount of capital towards the improvement of the aesthetic touch of the outlet. In this case, the researchers fail to consider the fact that there might be some other factors other than the outlets appearance. The company might even reduce the expenditure directed at the production of unique quality products due to the ideology that to increase sales and, thus, increase profits, they must increase the appearance through constant renovation. Commission of the type one error, in this case will have cost the company huge amounts of profits.

The type two error is committed, as earlier quoted, when the alternative hypothesis is accepted rather than being rejected. Take the case of a disease investigating medical institution. The institution wishes to investigate whether there is a connection between a particular food or drug to a said disease or disorder. The researchers use the volunteer people and subject them to the said drug or food and later test for the presence of the disease or disorder. It could cause severe misguidance and health problem in the case that the researchers rule out the connection to the drug or food to the disease. Committing the type two error in this case would expose many people to the risk of contracting the said disease or disorder. They would take the food and drugs with the ideology that they are safe. Ultimately, though, they would have exposed themselves to diseases.

In both cases, there are serious consequences involved. In the case of the type 1 error, the company will lose many profits and even perhaps reduce the quality involved in the course of production as a way to get the funding for the renovation projects. Loss in quality of the products might see the business lose customers to their business rivals. In the case of the commission of the type one error, the researchers will have committed thousands of people dependent on the research results to diseases and disorders, and perhaps, in extreme conditions, death. In the case of health researches, when dealing with research for causes of diseases, committing of the type two error may cause more diseases than if no research at all was done.