

FLOWCHART FOR CHOOSING INFERENCE STATISTICAL TEST

D. Velarde-Camaqui ¹R. Diaz ²¹ Universidad Autónoma del Perú (PERU)² Tecnológico de Monterrey (MEXICO)

About this paper:

Appears in: [ICERI2023 Proceedings](#)

Publication year: 2023

Pages: 9329-9335

ISBN: 978-84-09-55942-8

ISSN: 2340-1095

doi: [10.21125/iceri.2023.2393](https://doi.org/10.21125/iceri.2023.2393)

Conference name: 16th annual International Conference of and Innovation

Dates: 13-15 November, 2023

Location: Seville, Spain

Cite

Abstract:

It has been reported in the academic literature that higher education students, particularly from disciplines that do not focus on mathematics, deal with adverse problems related to statistics (Feinberg & Halperin, 1978). This phenomenon can impair the learning process and has been linked to negative academic outcomes (Martyn Chamberlain & Daley, 1999). It has been suggested that providing students with additional support material may be a valuable alternative in this context (Martyn Chamberlain). Flowcharts are a type of graphic organizers that seek to show the sequence of steps to be followed within a process (Grosskinsky et al., 2019), basically algorithms in a graphical way.

The present work proposes a flowchart based on scientific evidence that serves as a guide for the student, in order to allow him to make better decisions about the appropriate statistical test according to his research objectives. Particularly, it focuses on tests of inferential statistics, such as those that fall into the categories of associations, correlations, differences and experimental.

As in other studies focused on the realization of a flow diagram (Edward & Rosli, 2021; Toledo-Chávarri et al., 2020; Yanco et al., 2019), the methodology summarizes the realization of different theoretical proposals where the recommended proposals to recognize the proposed research hypotheses are made known.

In conclusion, this paper presents a summary of scientific evidence where researchers, new or not, can make decisions when choosing inferential tests, especially

References:

- [1] Edward, J., & Rosli, M. (2021). A Systematic Mapping Study on Ensemble-Based Classifier. 2021 IEEE International Conference on Computational Intelligence and Data Science (CIDAS). <https://doi.org/10.1109/ICOCOS53166.2021.9673563>.
- [2] Feinberg, L. B., & Halperin, S. (1978). Affective and cognitive correlates of course performance in introductory statistics. *The Journal of Experimental Psychology: Applied*, 4(1), 1-11. <https://doi.org/10.1080/00220973.1978.11011637>
- [3] Grosskinsky, D. K., Hammer Úr Skúoy, K., Jørgensen, K., Grosskinsky, D. K., Hammer Úr Skúoy, K., & Jørgensen, K. (2019). A flowchart as a tool to support laboratory exercise. *Dansk Universitetspædagogisk Tidsskrift*, 26(14), 23-35. <https://doi.org/10.7146/dut.v14i26.104402>
- [4] Martyn Chamberlain, J., Hillier, J., & Signoretta, P. (2015). Counting better? An examination of the impact of quantitative method teaching on statistical learning in Higher Education. *Journal of Management Education*, 49(1), 51-66. <https://doi.org/10.1177/1469787414558983>
- [5] Onwuegbuzie, A. J., & Daley, C. (1999). Perfectionism and statistics anxiety. *Personality and Individual Differences*, 26(6), 1089-1102. [https://doi.org/10.1016/S0191-8869\(99\)00011-1](https://doi.org/10.1016/S0191-8869(99)00011-1)
- [6] Toledo-Chávarri, A., Gagnon, M., Álvarez-Pérez, Y., Perestelo-Pérez, L., Pego, Y., & Aguilar, P. (2020). Development of a decisional flowchart for meaningful Health Technology Assessment. *International Journal of Technology Assessment in Health Care*, 37. <https://doi.org/10.1017/S0266462320001956>.
- [7] Yanco, E., Nelson, M., & Ramp, D. (2019). Cautioning against overemphasis of normative constructs in conservation decision making. *Conservation Biology*. <https://doi.org/10.1111/cobi.13298>.

Keywords:

Inferential Statistical Test, Flowchart, statistics.