

# Review of: "A New Index for Measuring the Difference Between Two Probability Distributions"

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The paper proposes a new index to measure the difference between two probability distributions, called distribution discrepancy index (DDI). This index is derived based on the concepts of informality, cross-informality and divergence of informality in the recently proposed theory of informality. It is defined as the ratio between the divergence of uniformity of two probability distributions and the sum of the two uniformities. The proposed DDI varies between 0 and 1, making its interpretation intuitive, simple and meaningful. A low DDI value (e.g., close to 0) indicates that the difference between the two probability distributions is small, while a high DDI value (e.g., close to 1) indicates a large difference.

Two applications are presented to demonstrate the use of the proposed DDI. It provides an appropriate measure of the difference between two probability distributions and its interpretation is easy to understand as it is related to the divergence of uniformity between the distributions. Furthermore, the article mentions that DDI is related to the distribution similarity index (DSI), where  $DDI = 1 - DSI$ , which is an interesting property of these indices.

The main novelty of this article is the introduction of the DDI as an index to measure the difference between probability distributions. Its usefulness lies in its ability to offer an intuitive and meaningful measure of the difference between two distributions, which can be applicable in a variety of fields such as statistical analysis, machine learning, signal processing, and more. The fact that it has a simple interpretation and is related to other known indices makes it a valuable tool for comparing probability distributions in various applications.

[1] Dr. Souza,

## References

1. <sup>^</sup>Hening Huang. (2024). *A New Index for Measuring the Difference Between Two Probability Distributions*. doi:10.32388/abgi6d.