

correlation, a much higher value of the observed ratio of variances will be required to reach the same degree of certainty. In other words, Fisher's z -test is too stringent for this case of correlated samples and this stringency increases with the magnitude of the correlation.

In conclusion, I acknowledge my indebtedness to Prof. P. C. Mahalanobis for his general guidance and valuable criticism in the preparation and presentation of this paper.

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AN EDITORIAL CORRECTION.

In an Editorial Note to S. S. Bose's "Tables for Testing the Significance of Linear Regression in the case of Time series and other Single-valued Samples" on p. 284 of *Sankhyā: The Indian Journal of Statistics*, Vol. 1, Parts 2 & 3. 1934, the need for caution in using results based on small samples was emphasized. The argument was not however clearly stated, and the Editor is indebted to Dr. E. S. Pearson for pointing this out in a letter dated 30th October 1934 :—

"If assumptions regarding normality and randomness are justified, surely the sampling distribution of the ratio in equation (4), p. 278 is exact, quite apart from lack of knowledge of σ . It is the same as in Student's Test where, if we accept " t " as the appropriate criteria, its sampling distribution is known without any approximation, although σ is not known. Trouble may arise because with so few observations we cannot be sure that our assumptions are justified, but I should have thought not for any reason of our using only an estimate of a standard error. The test allows for this automatically, with the result of course that its power of discrimination is less than if we know σ , but it does not tell us anything false if the initial assumptions are justified."

Dr. Pears: has explained the position very clearly. Only one remark may be added. Student's z (or R. A. Fisher's t) and R. A. Fisher's z are both ratios, and the distributions are completely dependent of the population variance. There is no difficulty so long as the significance of these ratios is being tested. But the difficulty appears when one of the items in the ratio (the sample mean itself or the sample variance) is being investigated. In the present case also the Tables are based on the distribution of a ratio, and a similar difficulty will arise if the significance of the regression coefficient itself is being tested. This difficulty increases rapidly as the size of the sample is decreased.

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