

Povzetek

Uvodno poglavje zajema nekaj definicij osnovnih pojmov.

Drugo poglavje predstavi večrazsežno normalno in Wishartovo porazdelitev. Opisanih je še nekaj izpeljanih porazdelitev.

V tretjem poglavju je najprej definirana funkcija verjetja, potem pa so opisani različni načini ocenjevanja vektorja upanja in kovariančne matrike. Najobsežnejši del zajema ocenjevanje po metodi največjega verjetja.

Zadnje poglavje je diskriminantna analiza in se ukvarja z razvrščanjem novega elementa v eno od skupin na različne načine glede na to, kaj vemo o elementu in kaj o skupinah.

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Key words: multivariate normal distribution, Wishart distribution, maximum likelihood estimation, discriminant analysis.

Literatura

- [1] Aitchison, J., Habbema, J. D. F., in Kay, J. W. (1977). A critical comparison of two methods of discrimination. *J. Roy. Statist. Soc. C*, **26**, 15-25.
- [2] Anderson, T. W. (1958). *An Introduction to Multivariate Statistical Analysis*. Wiley, New York.
- [3] Barnett, V. D. (1976). The ordering of multivariate data. *J. Roy. Statist. Soc. A*, **139**, 318-355.
- [4] Bartlett, M. S. (1965). *Multivariate statistics. Theoretical and Mathematical Biology*. Blaisdell, New York.
- [5] Cochran, W. G. (1934). The distribution of quadratic forms in a normal system, with applications to the analysis of variance. *Proc. Camb. Phil. Soc.*, **30**, 178-191.
- [6] Cochran, W. G. (1962). On the performance of the linear discriminant function. *Bull. Inst. Intern. Statist.*, **39**, 435-447.
- [7] Cox, D. R. (1972). The analysis of multivariate binary data. *Appl. Statist.*, **21**, 113-120.
- [8] Cox, D. R. in Brandwood, L. (1959). On a discriminatory problem connected with the works of Plato. *J. Roy. Statist. Soc. B*, **21**, 195-200.
- [9] Craig, A. T. (1943). A note on the independence of certain quadratic forms. *Ann. Math. Statist.*, **14**, 195-197.
- [10] Dickey, J. M. (1967). Matrix variate generalisation of the multivariate t distribution and the inverted multivariate t distribution. *Ann. Math. Statist.*, **38**, 511-518.
- [11] Fisher, R. A. (1947). The analysis of covariance method for the relation between a part and a whole. *Biometrics*, **3**, 65-68.
- [12] Foster, F. G. in Rees, D. H. (1957). Upper percentage points of the generalized beta distribution I. *Biometrika*, **44**, 237-247.
- [13] Gentleman, W. M. (1965). Robust estimation of multivariate location by minimizing p th power derivatives. Ph.D. thesis, Princeton University.
- [14] Goodman, N. R. (1963). Statistical analysis based on a certain multivariate complex Gaussian distribution (an introduction). *Ann. Math. Statist.*, **34**, 152-177.
- [15] Hotelling, H. (1931). The generalization of Student's ratio. *Ann. Math. Statist.*, **2**, 360-378.
- [16] Huber, J. P. (1972). Robust statistics: a review. *Ann. Math. Statist.*, **43**, 1041-1067.
- [17] James, A. T. (1964). Distributions of matrix variates and latent roots derived from normal samples. *Ann. Math. Statist.*, **35**, 475-501.

- [18] Jeffreys, H. (1961). *Theory of probability*. Clarendon Press, Oxford.
- [19] Khatri, C. G. (1965). Classical statistical analysis based on certain multivariate complex Gaussian distribution. *Ann. Math. Statist.*, **36**, 98-114.
- [20] Khatri, C. G. in Pillai, K. C. S. (1965). Some results on the non-central multivariate beta distribution and moments of traces of two matrices. *Ann. Math. Statist.*, **36**, 747-770.
- [21] Ksirsagar, A. M. (1960). Some extension of multivariate t distribution and the multivariate generalisation of the distribution of the regression coefficient. *Proc. Camb. Phil. Soc.*, **57**, 80-86.
- [22] Ksirsagar, A. M. (1961). The non-central multivariate beta distribution. *Ann. Math. Statist.*, **32**, 104-111.
- [23] Lancaster, H. O. (1969). *The Chi-squared Distribution*. Wiley, New York.
- [24] Mardia, K. V., Kent, J. T. in Bibby, J. M. (1979). *Multivariate Analysis*. Academic Press Inc., London.
- [25] Mitra, S. K. (1969). Some characteristic and non-characteristic properties of the Wishart distribution. *Sankhyā A*, **31**, 19-22.
- [26] Ogawa, J. (1949). On the independence of linear and quadratic forms of a random sample from a normal population. *Ann. Inst. Math. Statist.*, **1**, 83-108.
- [27] Pearson, E. S. in Hartley, H. O. (1972). *Biometrika Tables for Statisticians*, Vol. 2. Cambridge University Press, Cambridge.
- [28] Press, S. J. (1972). *Applied Multivariate Analysis*. Holt, Rinehart, and Winston, New York.
- [29] Rao, C. R. (1973). *Linear Statistical Inference and its Applications*. Wiley, New York.
- [30] Rao, C. R. in Mitra, S. K. (1971). *Generalised Inverse of Matrices and its Applications*. Wiley, New York.
- [31] Siskind, V. (1972). Second moments of inverse Wishart-matrix elements. *Biometrika*, **59**, 691-692.
- [32] Smith, C. A. B. (1947). Some examples of discrimination. *Ann. Eugen.*, **13**, 272-282.
- [33] Weinman, D. G. (1966). A multivariate extension of the exponential distribution. Ph. D. thesis, Arizona State University.
- [34] Welch, B. L. (1939). Note on discriminant functions. *Biometrika*, **31**, 218-220.
- [35] Wooding, R. A. (1956). The multivariate distribution of complex normal variables. *Biometrika*, **43**, 329-350.