

[Reviews in Analytical Chemistry](#)

Volume 19, Issue 6, 2000, Pages 467-490

 

Document Type: Article




[View references](#) (50)**Cited By**

This article has been cited 0 times in Scopus.

[Alert me](#) when this document is cited in Scopus[Related Documents](#)  
(by reference)**Evaluation and validation of analytical methods by regression analysis**[Sârbu, C.](#), [Liteanu, V.](#), [Bâldea, M.](#)

Babeş-Bolyai University, Fac. of Chem. and Chem. Engineering, Str. Arany Janos 11, RO-3400 Cluj-Napoca, Romania

**Abstract**

The evaluation and validation of analytical methods and instruments require comparison studies using samples material for testing accuracy and precision. Traditionally, in analytical chemistry the commonly accepted method of analyzing data from method comparison studies is least squares regression analysis, a model which has limitations. In this review the ordinary least squares and many other regression approaches recommended in the literature were presented and compared. After a discussion of the properties of the regression procedures, recommendations are given for carrying out a method comparison study using informational analysis of variance. The efficiency of the regression procedures discussed is demonstrated by different data sets from published literature.

**References** (50)


 Select:  All

1.  [Youden, W.J., Steiner, E.H.](#)  
(1975) *Statistical Manual of the AOAC*, [Cited 195 times](#)  
Washington
2.  [Cardone, J.M.](#)  
(1983) *J. Assoc. Off. Anal. Chem.*, 66 pp. 1257-1282 [Cited 26 times](#)
3.  [Miller, J.N.](#)  
(1991) *Analyst*, 116 pp. 3-14 [Cited 187 times](#)
4.  [Alexandrov, Yu.I.](#)  
(1996) *Analyst*, 121 pp. 1137-1145 [Cited 13 times](#)
5.  [Liteanu, C., Rîcă, I.](#)  
(1980) *Statistical Theory and Methodology of Trace Analysis*, [Cited 40 times](#)  
Ellis Horwood, Chichester
6.  [Liteanu, C., Rîcă, I.](#)  
(1985) *Optimization of Analytical Process*, pp. 26-76  
Editura Academiei RSR, Bucharest
7.  [Ceauşescu, D.](#)  
(1982) *Statistical Analysis of Experimental Data*, pp. 75-159  
Editura Tehnică, Bucharest
8.  [Massart, D.J., Vandeginste, B.M.G., Deming, S.N., Michotte, Y., Kaufman, L.](#)  
(1988) *Chemometrics: A Textbook*, pp. 75-92 [Cited 680 times](#)  
Elsevier, Amsterdam
9.  [Miller, J.C., Miller, J.N.](#)

(1988) *Statistics for Analytical Chemistry*, 2<sup>nd</sup> Ed., pp. 101-134 [Cited 49 times](#)  
Ellis Horwood, Chichester

10.  [Passing, H., Bablok, W.](#)  
(1983) *J. Clin. Chem. Clin. Biochem.*, 21 pp. 709-720 [Cited 446 times](#)  
[Abstract + Refs](#)
11.  [Hartmann, C., Smeyers-Verbeke, J., Massart, D.L.](#)  
(1993) *Analysis*, 21 pp. 125-132 [Cited 15 times](#)
12.  [Kalantar, A.H., Gelb, B.R., Alper, J.S.](#)  
(1995) *Talanta*, 42 pp. 597-603 [Cited 11 times](#)  
[View at Publisher](#)
13.  [Feldmann, U., Schneider, B., Klinkers, H.](#)  
(1981) *J. Clin. Chem. Clin. Biochem.*, 19 pp. 121-137 [Cited 23 times](#)  
[Abstract + Refs](#)
14.  [Bablok, W., Passing, H.](#)  
(1985) *J. Clin. Lab. Aut.*, 7 pp. 74-79 [Cited 17 times](#)  
[Abstract + Refs](#)
15.  [Ripley, B.D., Thomson, M.](#)  
(1987) *Analyst*, 112 pp. 377-383 [Cited 49 times](#)  
[View at Publisher](#)
16.  [Sârbu, C., Cobzac, S.](#)  
(1997) *Rev. Chim. (Bucharest)*, 48 pp. 239-245 [Cited 2 times](#)  
[Abstract + Refs](#)
17.  [Klimov, G.](#)  
(1987) *Probability Theory and Mathematical Statistics*, p. 272 [Cited 5 times](#)  
Mir Publishers, Moscow
18.  [Galan, L., Van Dalen, H.P.J., Kornblum, G.R.](#)  
(1985) *Analyst*, 110 pp. 323-329 [Cited 5 times](#)
19.  [Miller, J.N.](#)  
(1992) *Spectroscopy Europe*, 5 pp. 22-24 [Cited 2 times](#)
20.  [Bonate, P.L.](#)  
(1991) *LC-GC*, 10 pp. 448-450 [Cited 4 times](#)
21.  [Sârbu, C.](#)  
(1995) *Anal. Lett.*, 28 pp. 2077-2094 [Cited 11 times](#)
22.  [Sârbu, C., Liteanu, V.](#)  
(1995) *Rev. Chim. (Bucharest)*, 46 pp. 674-681 [Cited 6 times](#)
23.  [Liteanu, V., Sârbu, C., Pop, D.](#)  
(1996) *Anal. Univ. Craiova (Chimie)*, 23 pp. 77-85
24.  [York, D.](#)  
(1966) *Can. J. Phys.*, 44 pp. 1079-1986 [Cited 236 times](#)
25.  [Gustavo Gonzales, A., Marquez, A., Fernandez, S.](#)  
(1992) *J. Comput. Chem.*, 16 pp. 25-27
26.  [Passing, H., Bablok, W.](#)  
(1984) *J. Clin. Chem. Clin. Biochem.*, 22 pp. 431-445 [Cited 107 times](#)  
[Abstract + Refs](#)
27.  [Bablok, W., Passing, H., Bender, R., Schneider, B.](#)  
(1988) *J. Clin. Chem. Clin. Biochem.*, 26 pp. 873-1790
28.  [Besozzi, M., Franzini, C.](#)  
(1986) *Giorn. It. Chim. Clin.*, 11 pp. 29-41
29.  [Theil, H.](#)  
(1950) *Proc. K. Ned. Akad. Wet., Ser. A*, 53 p. 386 [Cited 69 times](#)
30.  [Hartmann, C., Vankeerberghen, P., Smeyers-Verbeke, J., Massart, D.L.](#)  
(1997) *Anal. Chim. Acta*, 344 pp. 17-28 [Cited 12 times](#)  
[Abstract + Refs](#) [View at Publisher](#)
31.  [Sârbu, C.](#)  
(1977) *Croat. Chem. Acta*, 70 pp. 795-801 [Cited 2 times](#)  
[Abstract + Refs](#)

32.  [Rousseeuw, P.J.](#)  
(1991) *J. Chemom.*, 5 pp. 1-20 [Cited 26 times](#)  
[View at Publisher](#)
33.  [Sârbu, C., Lorentz, J.](#)  
(1998) *Rev. Chim. (Bucharest)*, 49 pp. 19-24 [Cited 2 times](#)  
[Abstract + Refs](#)
34.  [Zwanziger, H.W., Sârbu, C.](#)  
(1998) *Anal. Chem.*, 70 pp. 1227-1230
35.  [Sârbu, C., Nascu, H.](#)  
(1992) *Rev. Roum. Chim.*, 37 pp. 945-951 [Cited 4 times](#)
36.  [Sârbu, C.](#)  
(1993) *Anal. Chim. Acta*, 271 pp. 269-274 [Cited 4 times](#)  
[Abstract + Refs](#) [View at Publisher](#)
37.  [Sârbu, C.](#)  
(1997) *Anal. Lett.*, 30 pp. 1051-1063 [Cited 3 times](#)  
[Abstract + Refs](#)
38.  [Onicescu, O.](#)  
(1966) *C.R. Acad. Sci. Ser. A*, 263 pp. 841-842 [Cited 10 times](#)
39.  [Onicescu, O., Ștefănescu, V.](#)  
(1979) *Informational Statistics*, [Cited 2 times](#)  
Editura Tehnică, Bucharest
40.  [Pop, H., Sârbu, C.](#)  
(1996) *Anal. Chem.*, 68 pp. 771-780 [Cited 21 times](#)  
[Abstract + Refs](#) [View at Publisher](#)
41.  [Sârbu, C., Pop, H.](#)  
(1997) *Rev. Chim. (Bucharest)*, 48 pp. 732-737 [Cited 5 times](#)  
[Abstract + Refs](#)
42.  [Pop, H., Sârbu, C.](#)  
(1997) *Rev. Chim. (Bucharest)*, 48 pp. 888-891 [Cited 5 times](#)  
[Abstract + Refs](#)
43.  [Sârbu, C., Dumitrescu, D., Pop, H.](#)  
(1993) *Rev. Chim. (Bucharest)*, 44 pp. 450-459 [Cited 9 times](#)
44.  [Dumitrescu, D., Sârbu, C., Pop, H.](#)  
(1994) *Anal. Lett.*, 27 pp. 1031-1054 [Cited 14 times](#)
45.  [Pop, H., Dumitrescu, D., Sârbu, C.](#)  
(1995) *Anal. Chim. Acta*, 310 pp. 269-279 [Cited 15 times](#)  
[Abstract + Refs](#) [View at Publisher](#)
46.  [Pop, H., Sârbu, C., Horowitz, O., Dumitrescu, D.](#)  
(1996) *J. Chem. Inf. Comput. Sci.*, 36 pp. 465-482 [Cited 14 times](#)  
[Abstract + Refs](#) [View at Publisher](#)
47.  [Sârbu, C., Horowitz, O., Pop, H.](#)  
(1996) *J. Chem. Inf. Comput. Sci.*, 36 pp. 1098-1108 [Cited 9 times](#)  
[Abstract + Refs](#) [View at Publisher](#)
48.  [Pop, H., Sârbu, C.](#)  
(1997) *J. Chem. Inf. Comput. Sci.*, 37 pp. 510-516 [Cited 6 times](#)  
[Abstract + Refs](#) [View at Publisher](#)
49.  [Gennaro, M.C., Abrigo, C., Maregno, E., Baldin, C., Martelletti, M.T.](#)  
(1995) *Analyst*, 120 pp. 47-51 [Cited 9 times](#)  
[Abstract + Refs](#) [View at Publisher](#)
50.  [Maw, R., Witry, L., Emond, T.](#)  
(1994) *Spectroscopy*, 49 pp. 39-41 [Cited 2 times](#)



[About Scopus](#) | [Feedback](#) | [Terms & Conditions](#) | [Privacy Policy](#)

Copyright © 2006 [Elsevier B.V.](#) All rights reserved. Scopus™ is a registered trademark of Elsevier B.V.