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## QUANTITATIVE RESEARCH AND USE OF COMPUTERS IN RUMANIAN HISTORIOGRAPHY

I do not remember an unanimously agreed definition of quantitative research in history and I will not discuss one here. Anyway, to edit and to comment unpublished statistical sources is a traditional historical concern but also a part and a premise of the quantitative research. Many a Rumanian historian discovered and published census and reports on statistical investigations performed in the prestatistical Rumanian epoch (before 1859), but because of the limited space we shall mention in this respect only three collections of studies.<sup>1</sup>

A specific approach in the quantitative historical research is the construction of statistical series by the gathering of quantitative data scattered in various non-statistical sources such as books of estates, customs and treasury, patrimonial acts, diplomatic and journey reports, etc. Rumanian historians have constructed in this way statistical series concerning: the tribute paid to the Ottoman Empire<sup>2</sup>; the taxes in Wallachia in the XVth century<sup>3</sup>; the monetary circulation in Wallachia and Moldavia in the XVIth century<sup>4</sup>; the commerce of Transylvania and others rumanian lands<sup>5</sup>; the prices history in the XVth-XVIIIth centuries<sup>6</sup>; the exploitation of wallachian estates in the XVIIIth century.<sup>7</sup>

The quantification in the very sense of this term comprises the numbering or the measuring of variables which in the original sources are neither numbered nor measured but appear in nominal non-quantified forms. By the counting of various nominal data contained in the documents it was possible to construct various statistics concerning the evolution of the property and the family in the XVth-XVIIth centuries<sup>8</sup>; the human settlements in Wallachia in the XIVth-XVth centuries<sup>9</sup>; the political memoirs in the 17th-18th centuries<sup>10</sup>; the book subscribers in the first half of the XIXth century<sup>11</sup>; the age structure of the socialist militants of Rumania in 1875-1893.<sup>12</sup> A Rumanian historian, in collaboration with a German historian performed a quantitative analysis of the Rumanian historiography.<sup>13</sup> With the object of pointing out the ways of reducing the historical documentation time, he achieved also a quantitative analysis of the reviews published in Socialist Republic of Rumania.<sup>14</sup> The mathematical apparatus of these works consist in computations of sum totals, ratios and means. In some of these works the quantitative analysis has a subordinate role.

Of special interest are the works which use not only quantitative data, but also an advanced mathematical apparatus. A known mathematician applied the methods of efficiency developed by Decision Theory to estimate the efficiency of the decision of the Rumanian prince Michael the Brave to rise against the Ottoman Empire.

He used the Game theory to study negotiations and battles carried on by Rumanian princes in the feudal epoch.<sup>15</sup> An epigraphist in collaboration with a mathematician adapted to the seriation of greek inscriptions with computer aid the method elaborated by Hole and Shaw for the chronological seriation of archeological sites.<sup>16</sup>

In our opinion, of great importance is the application of the mathematics and of the computer to discover historical relations - and hence historical explanations - which even in principle cannot be disclosed by other means. (Of course, every historical explanation, as well as every historical inquiry, supposes an explicit or implicit social theory). In this direction, collaborating with historians, documentalists and mathematicians, we engaged ourselves at the N. Iorga Institute of History in the study of the Rumanian agrarian system at the beginning of this century using multivariate analysis with the computer aid.<sup>17</sup> We also applied mathematical statistical (inferential as well as now descriptive) methods to the study of historical time sequences, with missing data.<sup>18</sup> Statistical tests were applied to specify the role and influence of the powers attending the 1936 Montreux conference - in the elaboration of the Montreux treaty.<sup>19</sup>

Computers are used also for the automatisation of non-quantitative traditional operations such as the linkage between the manuscripts of a chronicle<sup>20</sup> or the finding of documents.<sup>21</sup> At the end of this paper it is worth mentioning that a recent optional course of mathematics has been introduced at the Bucharest Faculty of History in the hope of encouraging young historians to apply mathematics to history.

- 1 Dezvoltarea economiei Moldovei între anii 1848 și 1864 (The economic development of Moldavia in 1848-1864), București, 1963; Din istoria statisticii românești. Culegere de articole (On the history of Rumanian statistics. Collection of papers), București, 1969; Populație și societate. Studii de demografie istorică (Population and society. Studies of historical demography). S. Pascu ed., Cluj, 1972.
- 2 M. Berza in SMIM II, 1957, p. 7-45 and Studii IX, 1958, nr. 2, p. 59-71.
- 3 D. Mioc in SMIM V, 1962, p. 151-174.
- 4 M. Maxim in RESEE XIII, 1975, p. 407-415.
- 5 Ruxandra Camarașescu, Coralia Fotino in SMIM VI, 1973, p. 225-241; D. Mioc in SSC, p. 122-125; Ioana Constantinescu, in RI XIX, 1976, nr. 12, p. 1927-1944.
- 6 R. Manolescu, Comerțul Tarii Românești și Moldovei cu Brașovul (secolele XIV-XVI) (The commerce of Wallachia and Moldavia with Brașov in the XIV-XVIth centuries), București, 1965; Lidia Demény, in RRH, VII, 1968, nr. 5, p. 761-778; Lajos Demény, in Studii XXII, 1969, nr. 3, p. 465-468.

- 7 S. Columbeanu, *Grandes exploitations domaniales en Valachie au XVIII<sup>e</sup> siècle*, Bucarest, 1974.
- 8 B. Câmpina, *Baza sociala a puterii lui Stefan cel mare (The social basis of the power of Stephen the Great)*, București, 1956; H.H. Stahl, *Contributii la studiul satelor devalmăse românești (Contributions to the Study of Rumanian communitary villages)*, Vol. II, Bucharest 1965.
- 9 I. Donat in *Studii VIII*, 1955, nr. 3, p. 49-64.
- 10 V. Georgescu, *Mémoires et projets de réforme dans les Principautés Roumaines 1831-1848*, Bucarest 1972.
- 11 C. and V.C. Velculescu in *RHSE XII*, 1974, nr. 2, p. 205-220 and *XIII*, 1975, nr. 4, p. 537-548.
- 12 V. Liveanu, in *Studii XXV*, nr. 5, p. 1005-1016.
- 13 R. Deutsch, W.H. Schröder, *Quantitative Analyse der rumänischen Historiographie*, Köln 1976.
- 14 R. Deutsch, *Historiometric contributions to the optimization of primary sources of historical information and documentation, in the volume mentioned in the precedent reference.*
- 15 M. Malița, *A model of Michael the Brave's decision in 1595 in MAHS*, p. 516-523; idem, *Mathematics in History (Historiometrics and Cliomathematics)*, in *RRH XIII*, 1974, nr. 5-6, p. 711-722.
- 16 Alexandra Stefan, *Applications of mathematical methods to epigraphy, in MAHS*, p. 267-275.
- 17 V. Liveanu, L. Asanachescu, C. Lulea, C. Moței, V. Medeleanu, *Coefficients of correlation in historical Research, in MAHS*, p. 505-515; idem, *Factori determinanți ai variației arenzii taranești la începutul secolului al XX-lea în România (Determinant factors of the variations of the rent in Rumania at the beginning of the XXth century)*, in *Studii XXIV*, 1971, nr. 2, p. 351-363; idem, *Factori determinanți ai investițiilor gospodariei moșierești din România la începutul secolului XX. O abordare pe baze matematice (Determinant factors of latifundary households investments in Rumania at the beginning of the XXth century. A mathematical approach)*, in *IMMSS I*, 1972, nr. 2, p. 42-72.
- 18 A paper on this subject, by V. Liveanu and I. Gavrilă was prepared for the Quantum-SSHA International Conference (August 10-12th, 1977).
- 19 R. Deutsch, *Student's statistical test to Montreux conference 1936, in RRH XII (1973)*, nr. 3, p. 575-586.
- 20 S.C. Nița, *Establishing the linkages of different variants of a Romanian Chronicle, in MAHS*, p. 401-410.
- 21 A program in this scope is prepared at the Central Historical State Archive.

Abbreviations:

- IMSS - Informatica și metode matematice în științele sociale (Informatics and Mathematical Methods in Social Sciences), a journal.
- MAHS - Mathematics in the Archaeological and Historical Sciences. F.R. Hodson, D.G. Kendall, P. Tautu, eds., Edinburgh 1971.
- RESEE - Revue des Etudes Sud-Est Européennes.
- RI - Revista de Istorie (The Journal of History).
- RRH - Revue Roumaine d'Histoire.
- SMIM - Studii si materiale de istorie medie (Studies and materials of medieval history).
- SSC - Sub semnul lui Clio. Omagiu academicianului Stefan Pascu (Under the badge of Clio. Homage to academician Stefan Pascu), Cluj 1974.

Dr. Vasile Liveanu

STELLENANGEBOT

Am Forschungsinstitut für öffentliche Verwaltung bei der Hochschule für Verwaltungswissenschaften, SPEYER, wird ein wissenschaftlicher Mitarbeiter (BAT IIa) für eine Tätigkeit in einem empirischen Forschungsprojekt eingestellt, dessen Laufzeit für einen Zeitraum von 2 Jahren veranschlagt ist.

Das Projekt untersucht die Effektivität staatlicher Leistungen in Abhängigkeit von sozialpsychologischen Problemen des Verhältnisses zwischen politischen Eliten und der Bevölkerung in der sozialstaatlichen Demokratie.

Gesucht wird zum frühest möglichen Zeitpunkt ein Historiker oder Sozialwissenschaftler, der Kenntnisse auf dem Gebiet der quantitativen Geschichtsforschung sowie Erfahrungen im Umgang mit der Sekundäranalyse von zeitgeschichtlichen Zeitreihendaten nachweisen kann.

Vorbedingung für die Einstellung ist ein abgeschlossenes Hochschulstudium. Bewerbungen werden unter Beifügung der üblichen Unterlagen erbeten an:

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