

Measuring image and efficiency of public administrations -
a socio-economic analysis

presented by

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A b s t r a c t

Image and efficiency of public administrations or departments in public administrations are ideas of contrary judgement in present discussions. The object of this paper is to show that to a certain extent both terms may be measured quantitatively. Quantitative attributes of "image" and "efficiency" are identified with random variables. Observing the development in time of these random variables we get a stochastic process influenced by fluctuation of staff, especially the managing staff. This process can be modeled by means of system dynamics. The paper presents the concept of measurement of the socio-economic terms, the statistical verification and results of a case study, and conclusions for further applications.

The background of the paper is an analysis carried out on the occasion of an election within an academic self-administration in West Berlin in 1980/81. This analysis considers (1) papers presented during the time before the election with opposing opinions as to image and efficiency of this administration, and (2) statistical data concerning possibilities within the structure of this administration and the realization of these possibilities by members of the staff over a period of seven years.

The concept is based on an indicator approach. Briefly, and in progressing steps: Step 1: In order to measure "image" and "efficiency" we define for purposes of simplification "image" and "efficiency" of a public administration as equal to "image" and "efficiency" of the managing staff of this administration. In a general approach we include different components as well. Step 2: Looking at the structure of a public administration we assume that different management positions with different duties, for instance President, head of the committee for education, for research, for elections, and heads of special departments. In public administrations these management positions are defined by law and candidates are nominated and elected by committees.

Step 3: We accord a different weight to different management positions. Regarding conditions in academic administrations we define the weights as "the hours per week reduced a priori to carry out a special management position". In administrations where we have not got this possibility we use a different method. Step 4: We choose a reference period from past to present. For each member in a management position we estimate two indices. The first is defined by the sum of the weighted management positions in the reference period, and is equal to the sum of reduced hours a priori. The second is defined by the actual sum of reduced hours (hours reduced a posteriori). Both indices are random variables. We expect normal distribution, if the number of management positions and the number of persons in these positions is large.

The paper will outline the following results and conclusions: (1) The first random variable can be explained as "the image of an administration at a certain time", the second as a controlling variable. We note that "image" in these terms is identified with the personal image of the (few) members of an administration who have the greatest possibilities a priori in this administration. (2) The efficiency of a public administration is normal to a certain extent, if the distribution of the two random variables is approximately equal. If there is a great difference efficiency of this administration may be improved. (3) Controlling the development in time of these random variables is an instrument to improve efficiency of public administrations. (4) The theory formulated above has been validated by a decision of the Senate of West Berlin to cut a special privilege a priori for managing positions in a special administration since 1981. This decision was made independently from this analysis, but it is also a result of this approach in the case study.

Time: 30 minutes
Overhead folies

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"Measuring Image and Efficiency in Public Administration:
A Dynamic Approach with Empirical Results"

Abstract of the report see pages 98 and 99 of the proceedings

Contents:

- 1 List of Management Positions and Weights
- 2 Form of Collecting Data in a Department of Public Administration
- 3 Distribution of Image in the Case Study
- 4 Distribution of the Controlling Variable in the Case Study
- 5 Measuring Efficiency: Two Fundamental Situations

1 List of Management Positions and Weights

No.	Specification of the Position	Weight 1)
1	Director	14
2	Vice Director	10
3	Leader responsible for the normal studies	6
4	Leader responsible for the evening studies	6
5	Leader responsible for post graduate studies	2
6	Leader responsible for bibliothek	2
7	Leader responsible for the tutors	2
8	Leader responsible for elections	2
9	Leader responsible for research	2
10	Leader responsible for contact studies	2
11	Leader responsible for further education of trade unionists	2
12	Leader responsible for general further education	2
13	Leader responsible for correspondence studies	2
14	Leader responsible for data processing	2
15	Head of the Academic Senate	2
16	Head of the Academic Parliament	2
17	Head of the commission for elections	2
18	Head of the commission for development planning	2
19	Head of the commission for education	2
20	Head of the commission for research	2
21	Head of the commission for the canteen	1
22	Head of the committee for discipline affairs	1
22	Head of the committee for educational affairs	2
23	Head of the committee for tutor affairs	2
24	Head of the committee for new students in normal studies	1
25	Head of the committee for new students in evening studies	1
26	Head of the committee to promote native students	1
27	Head of the committee to promote foreign students	1
28	Head of the committee for lecture time planning	1
29	Head of the committee for data processing	2
30	Head of the committee for examinations	2
31	Representative of Berlin School of Economics in the council of West Berlin universities	1
32	Representative of Berlin School of Economics in a council for data processing	1
33	Representative of Berlin School of Economics in the council for student affairs in West Berlin	1
34	Representative of Berlin School of Economics in a department for student affairs	1
35	Representative of Berlin School of Economics in a contact commission with Free University and Technical University of West Berlin	3
36	Head of department for macro economics and economic policy	2
37	Head of department for production economic	2
38	Head of department for marketing	2
39	Head of department financial and credit economic	2
40	Head of department for tax and public financial economic	2

No.	Specification of the Position	Weight
41	Head of department for management and personnel assessment	2
42	Head of department for quantitative economic analyses	2
43	Head of department for political and social economic sciences	2
44	Head of department for languages in economic	2
45	Head of department for law of economic	2

1) Weight equal 1 is equivalent to lecture work for 1 hour per semester

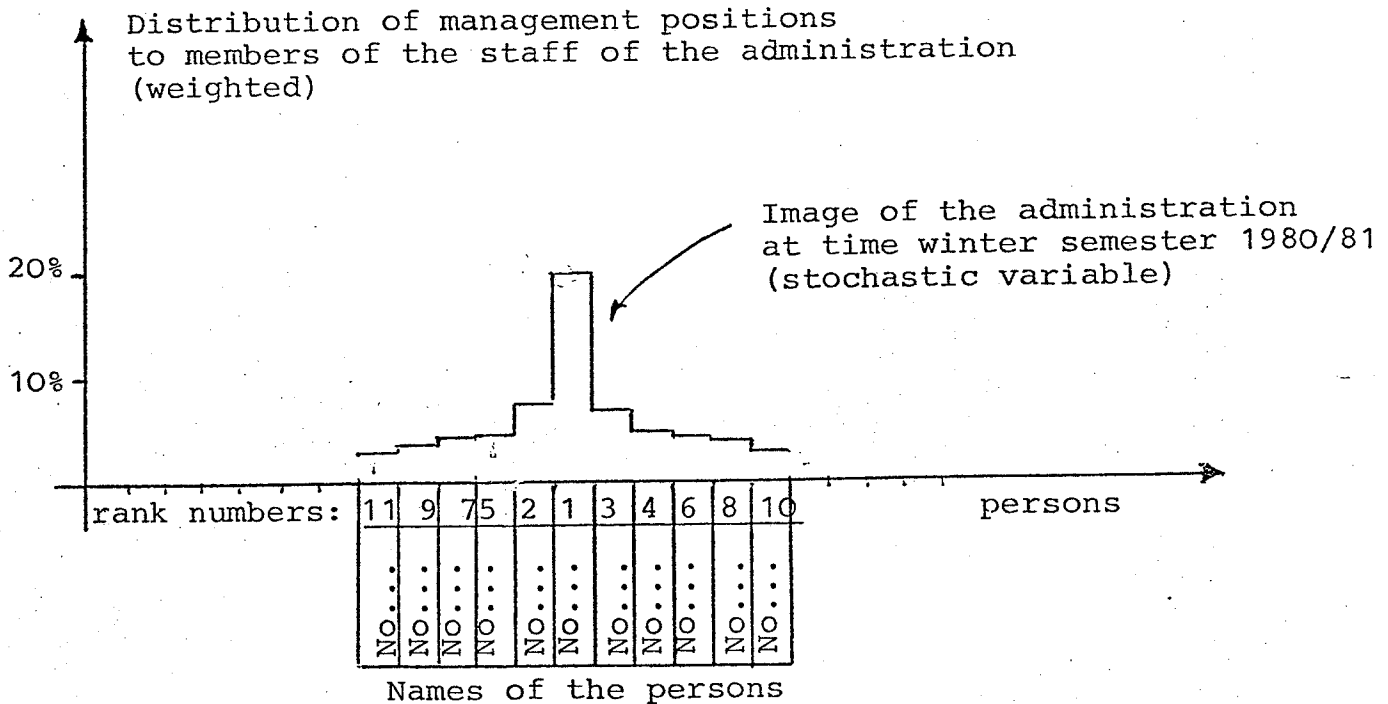
2 Form of Collecting Data in a Department of Public Administration

L e h r v e r p f l i c h t u n g		
Semester:		
Hochschullehrer:		
	Soll	Haben
1. Übertrag aus dem vergangenen Semester		
2. Soll/Ist-Verrechnung für die Gremientätigkeit im vergangenen Semester		
3. Lehrverpflichtung	18	
4. Gesetzliche Entlastung:		
a) Rektor (14)		
b) Prorektor (10)		
c) Beauftragter (3)		
d) Schwerbeschädigter (2)		
e) AS-Mitglied (4)		
5. Entlastungsmittelstunden		
a) Gremium (16 : 1)		
.....		
.....		
Vorsitzender ¹⁾		
Stundenplanung ¹⁾		
Probevorlesungskommission ¹⁾		
b) Beauftragter		
c) Forschung ²⁾ (Beschluß des AS vom)		
d) Facheinheit ¹⁾		

e) Sonstiges ¹⁾		
6. In diesem Semester angebotene Lehrveranstaltungen		
7. Ergebnis für dieses Semester		
8. Unabweisbar (Beschluss des LBA vom		
9. Übertrag auf das kommende Semester		
<p>1) Hierfür werden Entlastungsmittel nur auf gesonderten schriftlichen Antrag ex post gewährt, wenn eine entsprechende tatsächliche, außergewöhnliche Belastung nachgewiesen wird.</p> <p>2) Entlastungsmittel für Forschung sind bei der Forschungskommission zu beantragen.</p>		

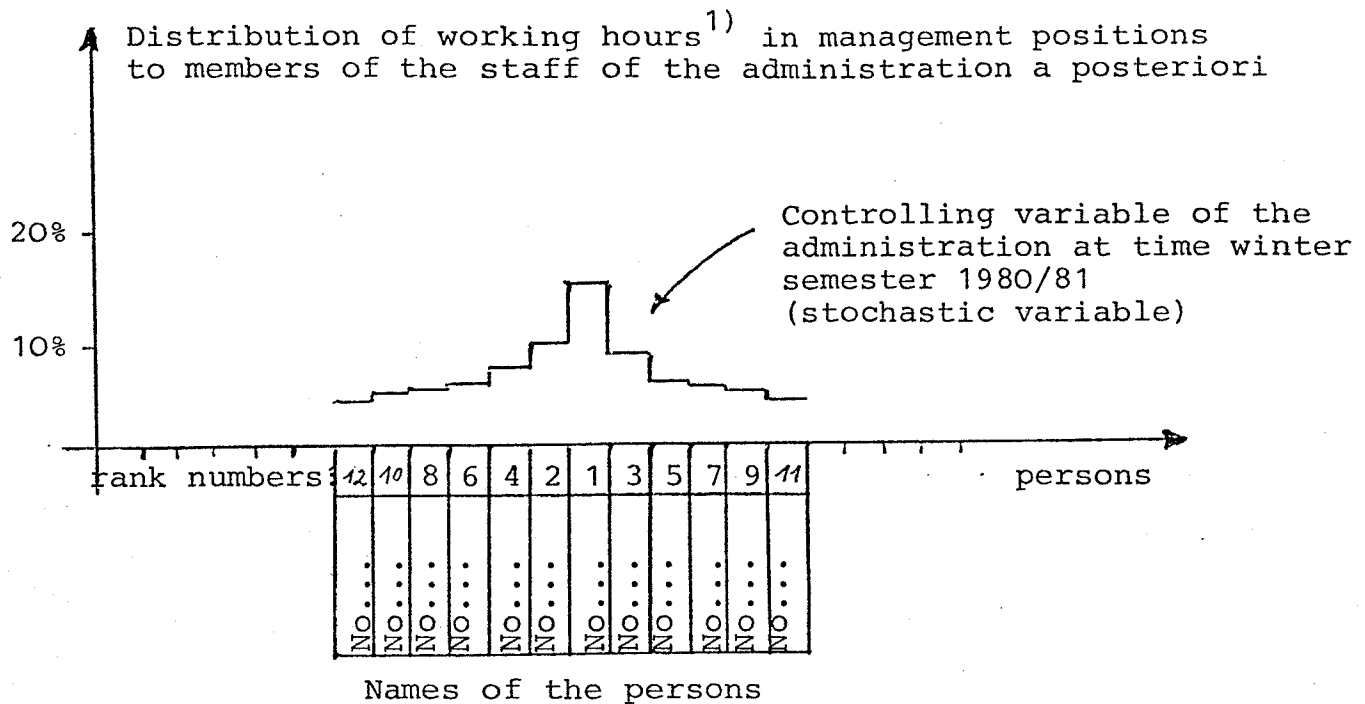
The form is presented in original language.

3 Distribution of Image in the Case Study



Reference period: from 1974 to 1981 (14 semesters)
 Number of management positions : 45
 Number of staff persons : 50

4 Distribution of the Controlling Variable in the Case Study

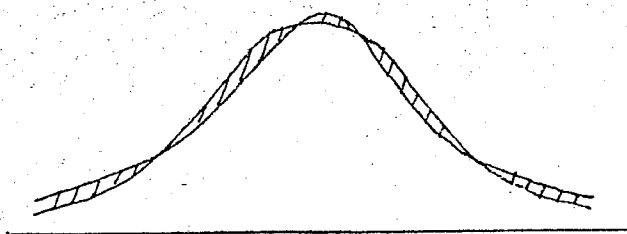


Reference period: from 1974 to 1981 (14 semesters)
 Number of management positions : 45
 Number of staff persons: 50
 Number of working hours¹⁾ at all : 2101

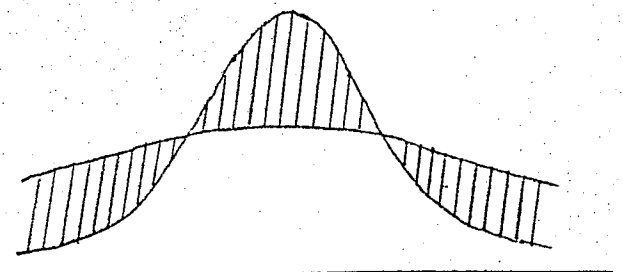
Note: The rank numbers of the same person may be different in the distribution of the management positions and the distribution of the controlling variable.

1) Working hour 1 is equivalent to lecture work for 1 hour per semester.

5 Measuring Efficiency: Two Fundamental Situations



Situation A : Distributions of management positions (image curve) and of the controlling variable are approximately equal. Efficiency of the administration should be normal.



Situation B : Distributions of management positions (image curve) and of the controlling variable have great differences. Efficiency of the administration may be improved by reorganisation of this administration.