

AUTHORITY, AUTONOMY AND CENTRALIZATION IN MEXICAN ORGANIZATIONS.



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The study of the structure of an organization shows its importance by means of its determiners which are products or services rendered as well as its global effects on society which include survival, development and evolution.

When studying the structure of an organization, the administration theorists divide the structure in two vital parts: 1. Organizational Design and 2. Labor or Work Design.

An organizational design is an integral model of duly formalized labor relations with specific transmission to the areas or departments for the particular tasks which make up each unit of the organization, providing that they contribute to the attainment of predetermined objectives. It is essentially:

The act of differentiating standards

Management of labor relations

Optimum distribution of work load

Designation of work groups

Establishment of work behavior pattern for members of the organization

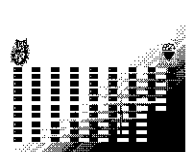
Every well-structured organization has duly formalized standards set out in manuals and routines which facilitate the operation of the diverse departments. Organizational charts and rules also help reach such goals. Nevertheless, organizations which have no formalized standards exist and base themselves simply on skills acquired by the most senior members of the department or operative section. The skills are passed on without being documented and the resulting organization structure based on either convention or custom.

Between these two extremes there is a great variety in the degree or level of the formalization of organizational standards.

The reasons for conceptualizing and abstracting an organization design are numerous. Firstly, there is the need for clear, well defined and functional order in the organization so that a great deal of uncertainty and confusion can be avoided, this subsequently makes the work to be done more attractive, safe and efficient and furthers interaction within and among the working groups. Better handling and identification of data systems is another result of precise operation and distribution of channels of communication. It can be said that an organizational design makes an organization more ordered, predictable and manageable; it also facilitates organizational learning.

The degree of development and evolution reached by an organization over the years is used to judge its level of consolidation or soundness which is reflected in its prosperity or weakness. Prosperity and weakness are largely due to the structure and, especially to the established organization and labor design. Organizations adapt their designs to suit circumstances in such a way that if a working table is efficient, it should be respected and kept in use; however, when the opposite happens, its contents should be checked and if it is inefficient, it should be dropped.

An organizational design softens the intense and powerful influence of a person in a supreme managerial position and permits functional continuity in the areas and department which make up an organization. Besides helping in the definition of the



fields of activity to be developed and in the specification of courses of action to be taken, it establishes an indispensable level of influence for the smooth running of the organization.

Bearing in mind the organization's projection in a social and administrative context, we can say that it has a clear, precise and even high degree of excellence when it is capable of solving its problems without manipulating the conflict to the detriment of its members and can reach its objectives with maximum efficiency.

Thus we cannot disconnect the concepts of an organization's structure from those corresponding to an organizational and labor design.

We can establish that the structure of an organization is a model of labor conduct which has been duly regulated for the interrelation of work functions that have been indicated and previously established in the attainment of the organization's goals. *It is best understood by studying it in terms of task specialization and the level of coordination entailed.* This specialization includes a division of work for the total of tasks and activities encompassed by uniform and manageable units of operation. These units should be duly coordinated or distributed in areas of specialized work within other highly representative fields which form the essence of the departmental divisions of the organization.

The balance between specialization and coordination by means of stimulative combinations not only makes the organization's structure an operation model, but also the designers' efforts in the attainment of the goals are objectivized.

From an abstract point of view in administrative science we can say that organizational design is the normative or reglamentary relation between the most diverse working units and the elements which make them up in order to reach an indispensable balance between the level of specialization and coordination. This balance is needed to reach the goals by means of defined conduct which lets the organizations change and last. In short, this means:

Authority is the official power to establish relations between the rules and regulations imposed in an organization.

The express or evident relation between the components of an organization and its goals.

The ways employees become part of the organization, their relationship to their work and how the organization responds to its labor force's development needs.

These were the basic reasons why I decided to go into the scientific knowledge about authority, cen-

tralization and autonomy in the Mexican labor context.

AUTHORITY IN AN ADMINISTRATIVE DESIGN

When studying authority as a phenomenon within the confines of Administrative Science, and when studying it as an abstraction of the knowledge of an organization's structure, it is possible to find some bases of the management's function and to situate the dimensions of this concept. Thus it is possible to determine the reason for elaborating under what conditions labor relations are established and also to set out the norms for said relations. Furthermore, it is possible to understand the mechanisms needed to reach the goals and objectives in accordance with a specific design. It is through authority that employee performance guidelines are set and the use of resources is justified within the objectivization of a model. Authority harmonizes conflicting interests and establishes a consensus of individual and group values. It is here that the dimensions of hierarchic levels, the division of work and superior-subordinate relations become evident.

Brown (1980, 91) sees authority as being able to enforce measures to carry out specific courses of action in organizations, i.e. an institutionalized form of power. The person in whom this power is invested has the right to order the fulfillment of tasks or plans to be carried out in a course of action. Bernard's definition, according to Grimes, is that authority is a condition of an order within a formal organization to which they contribute. The critical difference is implied in the phrase "In virtue of the fact that said order is accepted" in such a way that the underlying rationality of accepting authority as an order in the organization and the fact that its members voluntarily carry out the orders leads to the understanding that the four basic aspects of authority are:

1. *It is conferred upon important positions*
2. *Voluntary compliance of the organization's members*
3. *Suspension of critical judgement on fulfillment of an order*
4. *The meaning of authority is abstract since it arises from a collective context as a form of control.*

Van de Ven (1980, 121) sees authority as being the right to act and analyze the dimensions given by Weber. He also associates authority with "in-

fluence" which denotes the capacity of one person to make another do something in a way in which it would not have been done. Presthus (1962, 138) and Fillet, House and Kerr (1976, 94) made an important contribution by distinguishing the theoretical differences between authority, power and influence and established the thesis that power and influence coexist. After extensive studies in numerous enterprises Van de Ven did not find differences between these variables. Nevertheless, this observation shows the need to increase the dimensions of the Organization Assessment Instruments (OAI) to develop new measuring systems to show the fine distinctions established by other authors. The same author (1980, 123) made three basic adaptations to Tannenbaum's (1968, 33) control graph: (1) authority is spread out through hierarchic levels and also horizontally over distinctive operative units; (2) all of the organization's members were taken into account; (3) authority, as an extension of an exercise in an organization, depends on how it is perceived by the members.

AUTONOMY

The differences in personal interest and the fulfillment of goals as seen fit with the power to act electively and reflexively when executing an action allow the individual to feel satisfaction; in fact, he feels a mingled sensation of pleasure and superiority. This leads to a cycle of self-satisfaction where pleasure is replaced by more status, respect and power.

In the culturalization process, the human species has had to face the basic problem of finding the essence of its freedom and of outlining freedom's limits as well as having to know the most relevant forms which characterize it. Politicians, philosophers, the clergy, scientists and writers, irrespective of their epoch or geographical location, have used various terminologies to conceptualize human behavior as a phenomenon. Nowadays, the terms tend to converge due to circumstances or contingencies. Fromm, according to Gross (1964, 327), considers the "Freedom of man" to be the highest and sanest goal in the world. When man finds himself, his awareness makes him more productive and his relationship with his environment is more authentic in concrete reality in a positive and shared sense.

Man's knowledge and actions can be separated or isolated into operative units which facilitate their to determine the conditions under which

they are linked together so as to reach maximum organization. Put differently, an attempt is made to reach their significance as cognitive or behavioral elements which are representative of a cultural context within a system of values. The highest level of learning is seen as a growth and metamorphosis process of a person who undergoes changes which make him different in successive phases provided that each phase is an elevation of knowledge and ethic values.

This representation only takes place within a framework of freedom since the forms shown by a person over a wide range of specific interests are spontaneous and illustrate growth from something elementary to a complex literary or scientific work.

The interaction of these groups allows us to understand the difficulty a human being has in striving for freedom; freedom being a free choice of action or power, elective and reflexive thought and action done out of conviction and without the internal or environmental pressures which usually interfere. The interest of these thoughts is more evident when the individual is seen within an organization in the light of his need for self-development and creativity which are subject to the norms of a group and the interaction of interests within the group.

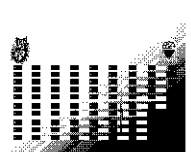
CENTRALIZATION

Aiken and Hage (1966, 427) view centralization as being the extent to which power is concentrated in a social system. From an administrative point of view, maximum centralization is when all power is held by one person (or a small group of people) in an enterprise; inversely, minimal centralization is when power is held equally by all members of an organization. All organizations, as can be expected, fall somewhere between maximum and minimum centralization.

In order to measure centralization, various systems can be used. One of these is the concept of "power" which means decision taking, another involves delving into the knowledge of power in general. Both are obtained by means of perceptual instruments which reflect the subjectivity of the answers. In Aiken and Hage's work the dimensions given to centralization were the degree of the participation in decision taking which has two sub-dimensions: global organization, and the degree of control held by those who carry out the tasks.

RESEARCH MODEL:

The design of this study of the problem of autho-



riety, autonomy and centralization in some important Mexican organization can be summerised as follows:

Authority as an administrative phenomenon is associated with socialization and job satisfaction. The degree of freedom or autonomy that a person should have is limited, reduced or changed according to the task assigned; especially in mid or upper levels of the organization structure.

This situation is not conducive to relations which favor a good organizational climate and has repercussions on the satisfactory integration of the production system. The above mentioned reappears to the detriment of worker autonomy and freedom when it links the authority with similar or concomitant phenomena. This study intends to show that the autonomy variable is modified or neutralized in its action by the authority and centralization variables. Furthermore, authority has sufficient power to make itself evident through the varying complexity of organization. The study will be done according to the following hypotheses:

1. Authority (X) and centralization (2) modify work autonomy (Y).
2. The function of authority (X) can be differentiated in the hierarchic levels of the organization (W).

The sample group of 123 enterprises to be studied was chosen from 500 large companies with assets of over, 2,500 million pesos and a binomial sample formula of 0.5 probability and 0.9 reliability was used. Each organization was asked to replay through three of its managers; a total of 322 respondents was obtained.

RESULTS

Table five the structure of the four factors which are represented by the following variables: authority, socialization, centralization and complexity. These factors are orthogonally distributed and their coefficients, communality and eigenvalues can be studied in depth.

Table six has the three dimensions which make up the authority variable in this study.

Table seven represents the two dimensions which make up socialization.

Table eight has the results on the reliability of the instruments through correlation coefficients corrected by the Spearman-Brown formula with its respective levels of significance.

Table nine shows the results of the discriminant analysis for the function of authority by means of

the items corresponding to factor number one (Authority) as well as the second factor (Socialization). These are also contrasted with the five hierarchic levels of companies in accordance with the complexity variable which is being studied. The canonical correlation had a value of 0.22, a Wilks Lambda of 0.95 and chi square value of 22.6 at a significance level of .03 for function number one corresponding to authority. The coefficients for the centroid groups were: (1) (-.25); (2) (-.25); (3) (.07); (4) (.19); (5) 3.57).

Table ten has the prediction results in groups where 25% of the cases were shown to be correctly classified. The chi-square value was 4.7 at a significance level of .03.

Table eleven illustrates a territorial map which indicates the distribution of the centroid groups and their lay out while taking the functions of authority and socialization into account.

Table twelve is the result of the Path analysis in the study of the three variables shown at causal closure; the standardized Beta coefficients and the value of the latent variables.

Table thirteen is the bivariate covariation breakdown.

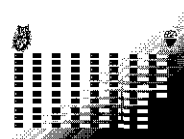
Table fourteen shows a final Path analysis for the three variables under study.

DISCUSSION

The autonomy or laboral freedom variable was, with its respective coefficients and eigenvalue, present as a factor in the pilot test. The test was to first evaluate the functionality and viability of the five variables being studied, it was for this reason that they have been included in the study.

Table five shows the factor structure of the four variables: (1) Authority; (2) Socialization; (3) Centralization; (4) Complexity. Autonomy or laboral freedom is not included since this variable was not factorized in the base group (with the varimax method after rotation with Kaiser normalization) and therefore the items of this variable were not "loaded on a factor" or are not "saturated in a factor". It was observed that other factors (1 and 3) were saturated in the final result of the complex factor test (four factors) but this is not what is being referred to here. These factors, 1 and 3, which were saturated by autonomy were the authority and centralization variables whose factorial loads were visibly similar for both factors and for the five items of the autonomy variable.

Due to what has been stated, authority and centralization, when present at the same time, modify



the values which individually make evident the continuous of the autonomy or laboral freedom variable which is proof of the first hypothesis. This finding, in my opinion, should not go unnoticed since it permits us to contemplate a new approach within the science of administration through a bipolar representation of the phenomena of authority and laboral freedom at work. The interplay between the intermediate values will depend on the magnitude or intensity with which one phenomenon dominates the values of another. When there is less autonomy in work and greater freedom, authority is seen to have less influence.

From a practical point of view of the results obtained in this study—given that the study represents the most select groups of the private sector in Mexico—we can infer that the powerful action of authority left the lowest values of autonomy for the development of the administrative task. This can explain the reason for loading six items on factors 1 and 3 and why autonomy did not factorize.

The statement that authority is shown with “powerful action” is backed by the results of concrete reality through the already explained factorization test. The saturation of this factor was done in three dimensions. The first dimension has been “Objective authority” since it is the object of authority in itself when it is shown or made clear, irrespective of its orientation (upwards, downwards and horizontal). The acts of control are included in this dimension. The second dimension, or “Subjective authority” represents the internalization of authority and is the formation of certain criteria by each person. The third and last dimension is “Utilitarian authority” which is the expression of usefulness in authority.

Having considered the eigenvalues obtained in the factorial analysis it was thought suitable to create discriminating function by means of the statistic analysis of the original values of the authority variable (first function of the discriminant analysis). The socialization variable was applied as the second function. The groups in which both functions acted were represented by hierarchic levels of the enterprise into which the answers to complexity were divided.

The results of the discriminant analysis for the authority function were: a canonic correlation coefficient of 0.22; Wilks Lambda 0.93; a chi square 22.60 at a level of significance of 0.13. The centroid groups were adequately spread out on the map.

The above mentioned results show the maximum expression and dimension of the discriminatory of authority for the large Mexican enter-

prises where the chain of command or hierarchic levels cover fifteen levels in the most important branches at operational level. This means that authority as an administrative phenomenon has sufficient conceptual strength and that it is capable of differentiation through the various hierarchic levels which make up the power or command structure of an organization. The test proves its value as a continuum ladder represented by this variable which is called “Administrative authority”, thus it is studied, not only as a basic element of the organizational structure design, but also as an essential component of work design and redesign. I have not found the later described or observed by the organization or administration theoreticians; nevertheless, it is important since it can modify the structural model of both designs in their integral conceptualization.

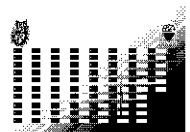
Table eleven shows the horizontal axis of the territorial map, the function of authority and the magnitude of its behavior in relation to the centroid groups. The vertical axis represents the discriminatory function of socialization.

Authority as a theoretic body and vital principle of administration practice is the meeting point of interdepartmental interaction in an organization and the site where decisions for the attainment of goals and objectives should be made. However, authority is also respect and it is here where its relation to administrative freedom is best. Authority should be in agreement with the fundamental convictions, codes, beliefs and habits of the individuals and action groups. It is for this reason whoever exercises power always does so in a limited way. Traditionally authority has been thought of as being without limits and the fact that it has no limits has often made it an instrument of corruption. Over the centuries man has imposed limits on the actions of those who have authority for this very reason.

The second hypothesis of this paper which states that: “The function of authority (X) can be differentiated in the various hierarchic levels of organizations (W)” was shown with the first discriminatory function (authority), which was split into hierarchic level groups of the organizational structure of the sample (table seven, central group distribution).

On evaluating the findings of this research paper, it is desirable to delve into the study of the authority and centralization variables. For this reason the causal closure for the three variables under study was designed. This was done by using the Path analysis. Table twelve shows its findings.

Table thirteen gives the bivariate covariation breakdown data which is genuine or causal between



authority (X_3) and socialization (X_2). The covariant between authority (X_3) and centralization (X_1) is two thirds direct causal in origin only one third indirect: however, the covariation is, in its totality, of causal or genuine origin.

The relation between socialization (X_2) and centralization (X_1) is broken down into causal and spurious. The bivariate causal closure relation between (X_2) and (X_1) shows that 85% is of causal origin and 15% is spurious.

The analysis of Cij coefficient affirms that the causal closure between authority (X_3) and centralization (X_1) is undoubtedly of causal origin. This concept is in agreement with the theoretic context and with administrative practice.

Socialization (X_2) and centralization (X_1) have a double relation which is on one hand of causal origin, and on the other, a spurious relation.

This model is in agreement with the reality of theory-practice and shows that while some kinds of socialization facilitate the phenomenon of centralization, some of its other dimensions are definitely incompatible.

For a better understanding of the negative association of the causal origin between authority and centralization it is advisable to study E. Resenos' concept given below:

"Authority is a specification of the function's hierarchic scope. The more the specification the functions, the greater the integration of authority and the less the tendency to centralize."

Table fourteen shows the final model of the Path analysis in accordance with the final results of the causalologic closure as found in this study.

CONCLUSIONS

1. The autonomy variable did not factorize, i.e. its items were not saturated by one factor only. The saturation variable came into effect in the factors corresponding to the authority and centralization variables. This leads to the conclusion that these two variable modify the values of autonomy or labor freedom.
2. Authority and autonomy can be represented bipolarly where their values will have an indirect relation, i.e. the greater, the authority, the less work autonomy, and vice versa.
3. Authority is a powerful phenomenon in its theoretical and practical conceptualization in the field of administrative science and has three di-

mension:

Objective authority
Subjective authority
Utilitarian authority

4. It was shown through the factorial and discriminant analysis that administrative authority is a "discriminatory function" before the hierarchic levels of an organization.
5. The causal closure between authority and socialization was achieved by means of the Path analysis. The breakdown of the bivariate covariation between authority and centralization was of causal or genuine origin and the relation between socialization and centralization was 85% causal and 15% spurious.
6. The socialization variable is presented in this study as having a bipolar nature: at one pole there are the superficial relationships between people, and at the other, their feelings and affections.
7. It is shown in the study that the private sector, according to the sample obtained, is putting administrative decentralization into effect.

SUMMARY

The study defines its basic objects and purpose which are to find the relationship between authority, autonomy, centralization, socialization and complexity variables.

The sample group is made up of "gigantic and large" enterprises of the private sector with 322 respondents taken from high levels of management.

Theoretic concepts on authority and autonomy and their application to administrative practice are evaluated.

The analysis of the answers in the empiric test was done by applying factor analysis, discrimination and the Path analysis. The results obtained are commented on and discussed by interpreting the findings within the theoretic context of administrative science.

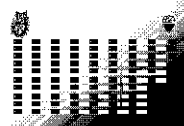
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FIGURE Nº 1

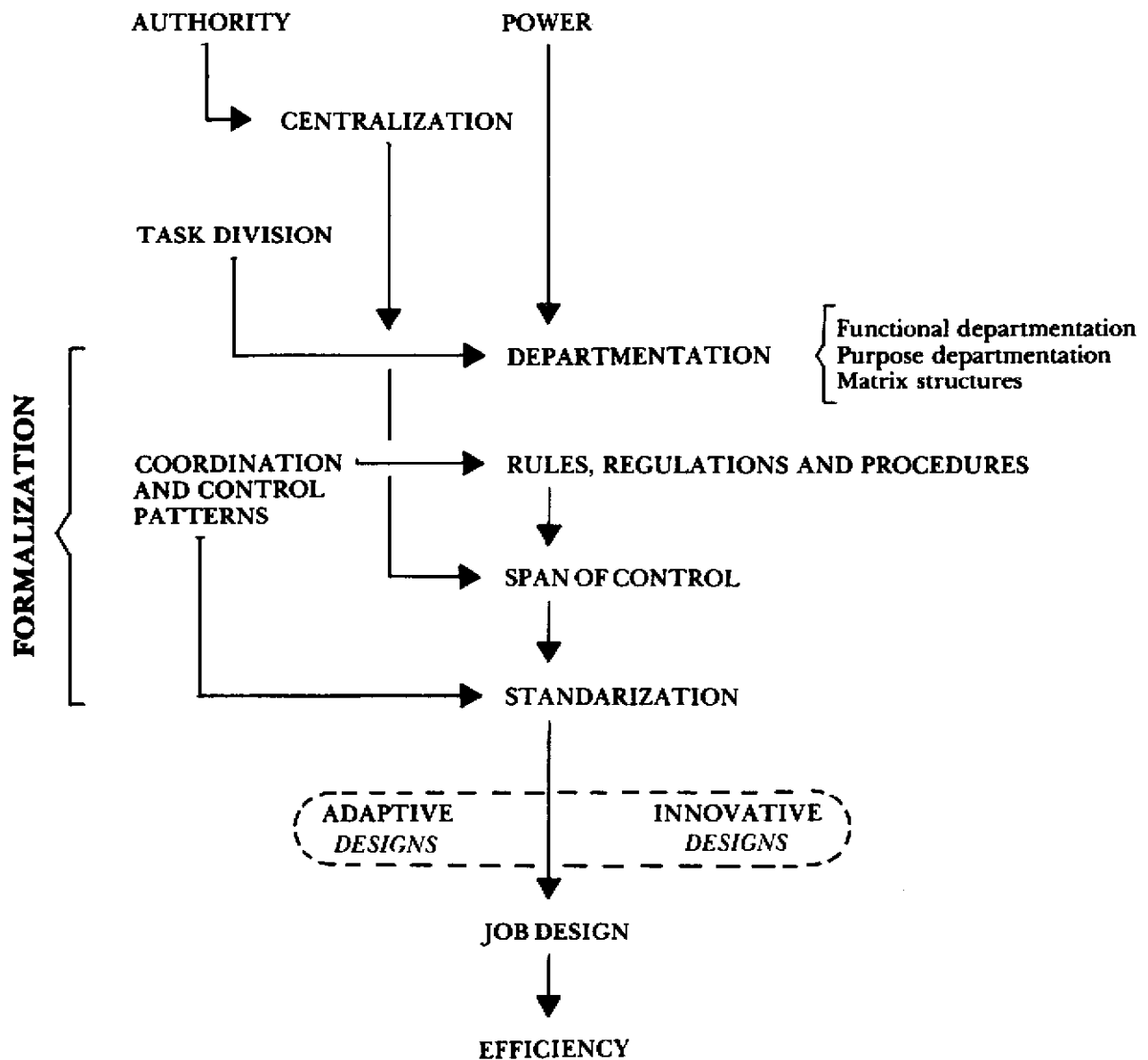
VARIABLES IN ORGANIZATION DESIGN

FIGURE N° 2

VARIABLES INTERACTION IN TASK DESIGN

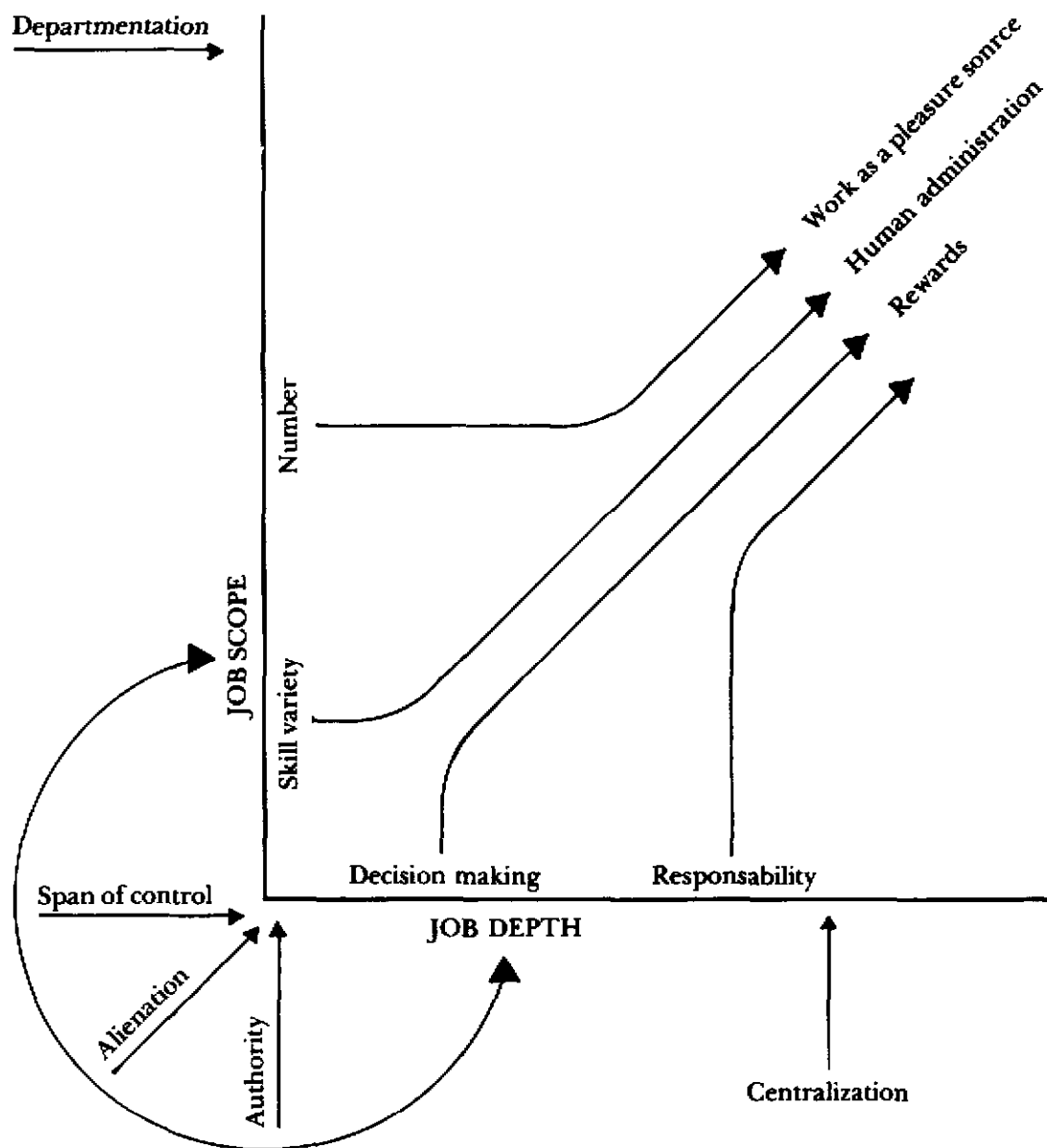
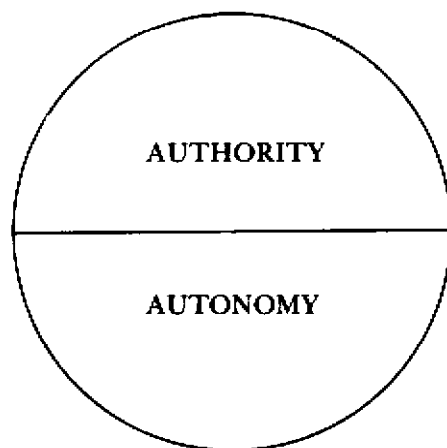
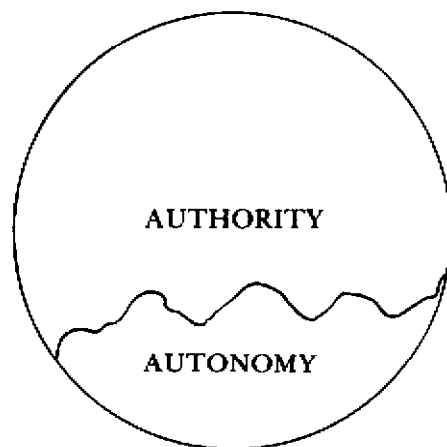


FIGURE Nº 3

**BIPOLAR STRUCTURE OF
THE INDIRECT RELATIONSHIP
AMONG AUTHORITY AND
AUTONOMY**



RELATIONSHIP AS DEFINED BY MANAGEMENT THEORIES



RELATIONSHIP FOUND OUT BY THE AUTHOR'S MODEL

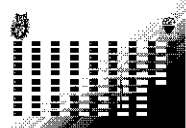
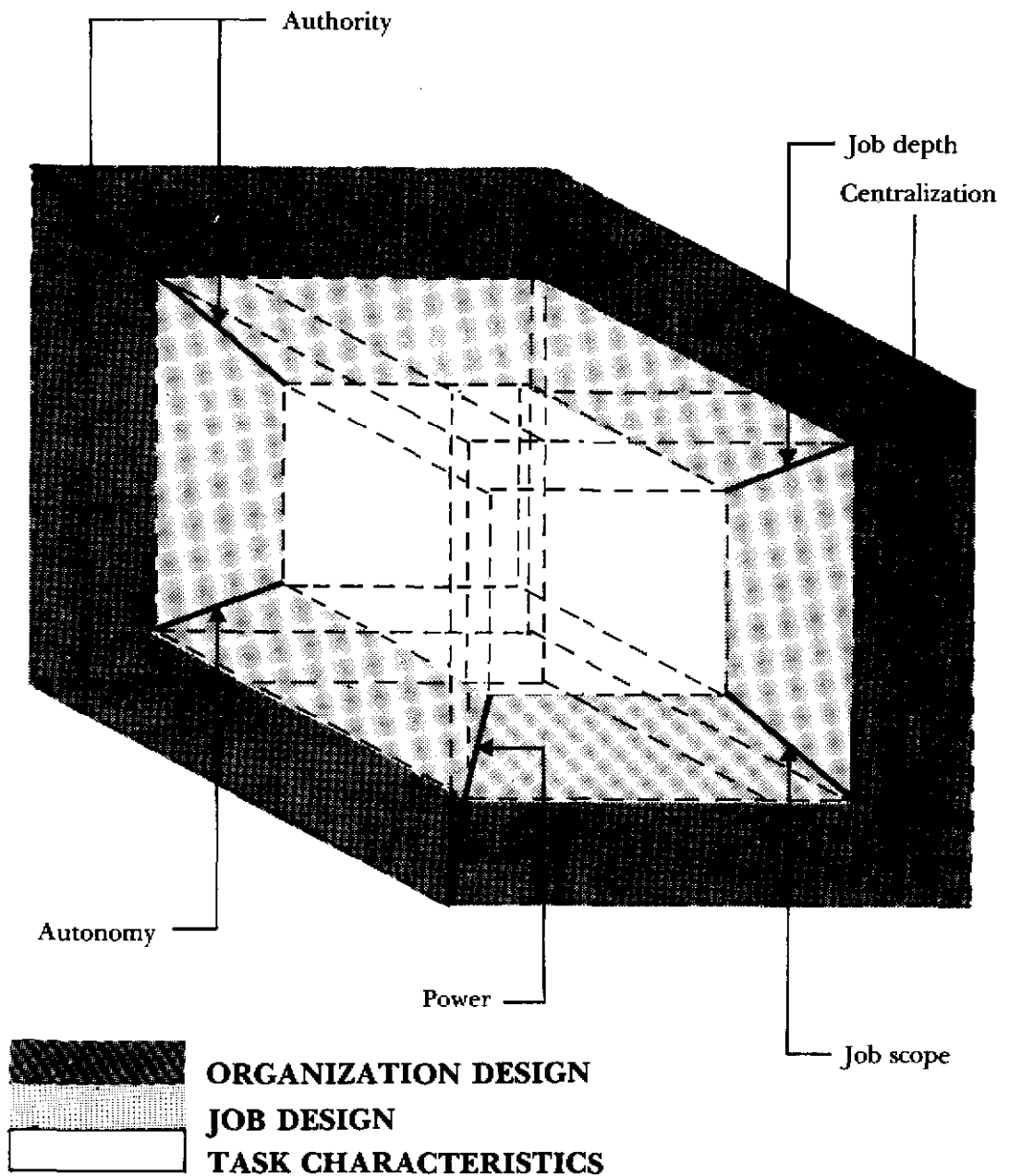


FIGURE N° 4

PROPOSED TECHNICAL MODEL



FACTOR I

FIGURE N° 5.1

ITEMS	FACTORS			COMMUNALITY			MEAN	STD DEV			
FACTOR II											
01	—	.05	—	.55	—	.02	.06	.30	3.2	—	.95
07	—	.08	—	.49	—	.10	.04	.26	3.4	—	1.0
13	—	.03	—	.47	—	.06	.01	.22	3.2	—	1.0
19	—	.23	—	.44	—	.14	.17	.29	3.9	—	.90
24	—	.16	—	.30	—	.18	.06	.15	3.9	—	.89
31	(-)	.05	—	.39	—	.01	.01	(-)	3.3	—	1.0
35	—	.05	—	.70	—	.05	.13	.51	3.9	—	.89
38	—	.12	—	.41	—	.05	.03	.18	3.5	—	.75
39	—	.15	—	.66	(-)	.02	.07	.45	4.0	—	.81
FACTOR III											
04	(-)	.09	(-)	.02	(-)	.41	.03	.18	2.8	—	1.2
10	(-)	.12	—	.01	(-)	.38	.03	.15	2.3	—	1.1
16	—	.14	(-)	.08	(-)	.49	.08	.28	2.4	—	1.0
22	—	.01	(-)	.07	(-)	.56	.02	.32	2.1	—	.95
28	—	.16	(-)	.28	(-)	.57	.05	.44	2.6	—	1.1
34	—	.14	—	.05	—	.52	.06	.29	3.9	—	.72

SOCIALIZATION

FACTOR III

CENTRALIZATION

ITEMS	FACTORS	COMMUNALITY	MEAN	STD DEV
-------	---------	-------------	------	---------

FACTOR IV

COMPLEXITY

40	_____	.09	_____(-)	.12	_____(-)	.07	_____	.31	_____	.13	_____	2.1	_____	1.3
41	_____	(-) .10	_____	.22	_____	.02	_____	.56	_____	.37	_____	3.4	_____	1.7
42	_____	(-) .11	_____	.22	_____	.04	_____	.70	_____	.55	_____	3.0	_____	1.3
43	_____	(-) .01	_____	.15	_____	.02	_____	.60	_____	.38	_____	2.2	_____	1.4

FACTOR	EINGENVALUE	PCT OF VAR	CUM PCT
--------	-------------	------------	---------

I	_____	6.3	_____	50.9	_____	50.9
II	_____	2.5	_____	20.4	_____	71.3
III	_____	2.0	_____	16.8	_____	88.1
IV	_____	1.4	_____	11.9	_____	100.

FIGURE N° 6

Three dimensions of authority

ITEMS	FACTORS			COMMUNALITY	MEAN	STD DEV
FACTOR	I	I	II	III		
02	.50	.11	.25	.28	3.6	.90
08	.64	.18	.12	.45	3.4	.98
14	.37	.28	.23	.26	3.4	.91
20	.66	.13	.11	.47	3.7	.80
26	.59	.03	.36	.47	3.6	.85
FACTOR II						
11	.03	.58	.11	.35	3.8	.84
17	.14	.57	.13	.37	4.2	.64
23	.29	.40	(-)	.12	3.7	.78
29	.16	.30	.19	.16	3.7	.84
FACTOR III						
09	.16	.18	.47	.28	4.2	.73
27	.13	.07	.61	.40	3.8	.74
FACTOR	EIGENVALUE		PCT OF VAR		CUM PCT	
I	2.71		69.5		69.5	
II	.65		16.7		86.3	
III	.53		13.7		100.-	

FIGURE N° 7

Two dimensions of socialization

ITEMS	FACTORS	COMMUNALITY	MEAN	STD DEV
FACTOR I	I	II		
19	.71	.04	.50	3.9 .90
24	.29	.11	0.9	3.9 .89
35	.60	.48	.55	3.9 .89
39	.62	.29	.46	4.0 .81

FACTOR II

01	.24	.56	.37	3.2 .95
45	.17	.45	.23	3.2 1.01
31	.03	.51	.26	3.3 1.03
38	.19	.37	.18	3.9 .90

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
I	2.54	83.7	83.7
II	.49	16.3	100.-

FIGURE N° 8

RELIABILITY

Correlation coefficients (Spearman-Brown)

AUTHORITY	. 91	s	=	. 001
SOCIALIZATION	. 94	s	=	. 001
CENTRALIZATION	. 84	s	=	. 001
COMPLEXITY	. 85	s	=	. 001

Discriminant Analysis

Authority and hierarchichal levels (complexity)

DIRECT SOLUTION METHODOLOGY

PRIOR PROBABILITIES = EQUAL

	GROUP 1 .20	GROUP 2 .20	GROUP 3 .20	GROUP 4 .20	GROUP 5 .20		
NUMBER REMOVED	EIGENVALUE	CANONICAL CORRELATION	PERCENT OF TRACE	WILKS LAMBDA	CHI-SQUARE	D.F.	SIGNIFICANCE
0	.05	.22	70.0	.93	22.6	12	.03
1	.02	.13	26.8	.98	6.8	6	.33
1	.00	.04	3.2	.99	.7	2	.69

STANDAR DIZED	DISCRIMINANT	FUNCTION	COEFFICIENTS
	1	2	3
V. Authority	.64	.73	.40
V. Socialization	-.52	-.41	.82
V. Centralization	.74	.64	.33

FIGURE 9.1

CENTROIDES OF GROUPS IN REDUCED SPACE.

GROUP 1	-.05	-.03	.02
GROUP 2	-.25	.09	-.04
GROUP 3	.07	-.01	.10
GROUP 4	.19	-.40	-.06
GROUP 5	.57	.19	-.03

FIGURE No 10

ACTUAL GROUP			PREDICTED GROUP MEMBERSHIP				
Nº of Cases							
CODE			Group 1	Group 2	Group 3	Group 4	Group 5
Group 1	1	141	1. .3 PCT	61. 18.9 PCT	18. 5.6 PCT	31. 9.6 PCT	30. 9.3 PCT
Group 2	2	86	2. .6 PCT	47. 14.6 PCT	5. 1.6 PCT	16. 5.0 PCT	16. 5.0 PCT
Group 3	3	38	1. .3 PCT	12. 3.7	6. 1.9 PCT	9. 2.8 PCT	10. 3.1 PCT
Group 4	4	25	0 0 PCT	6. 1.9 PCT	4. 1.2 PCT	11. 3.4 PCT	4. 1.2 PCT
Group 5	5	32	0 0 PCT	9. 2.8 PCT	0 0 PCT	8. 2.5 PCT	15. 4.7 PCT

24.8 Percent of "known" groups correctly classified
 CHI - Square = 4.724 significance = .030

FIGURE N° 11

**PLOT OF DISCRIMINANT SCORE 1 (HORIZONTAL) Vs
DISCRIMINANT SCORE 2 (VERTICAL)**

⊕ INDICATES A CENTROID GROUP

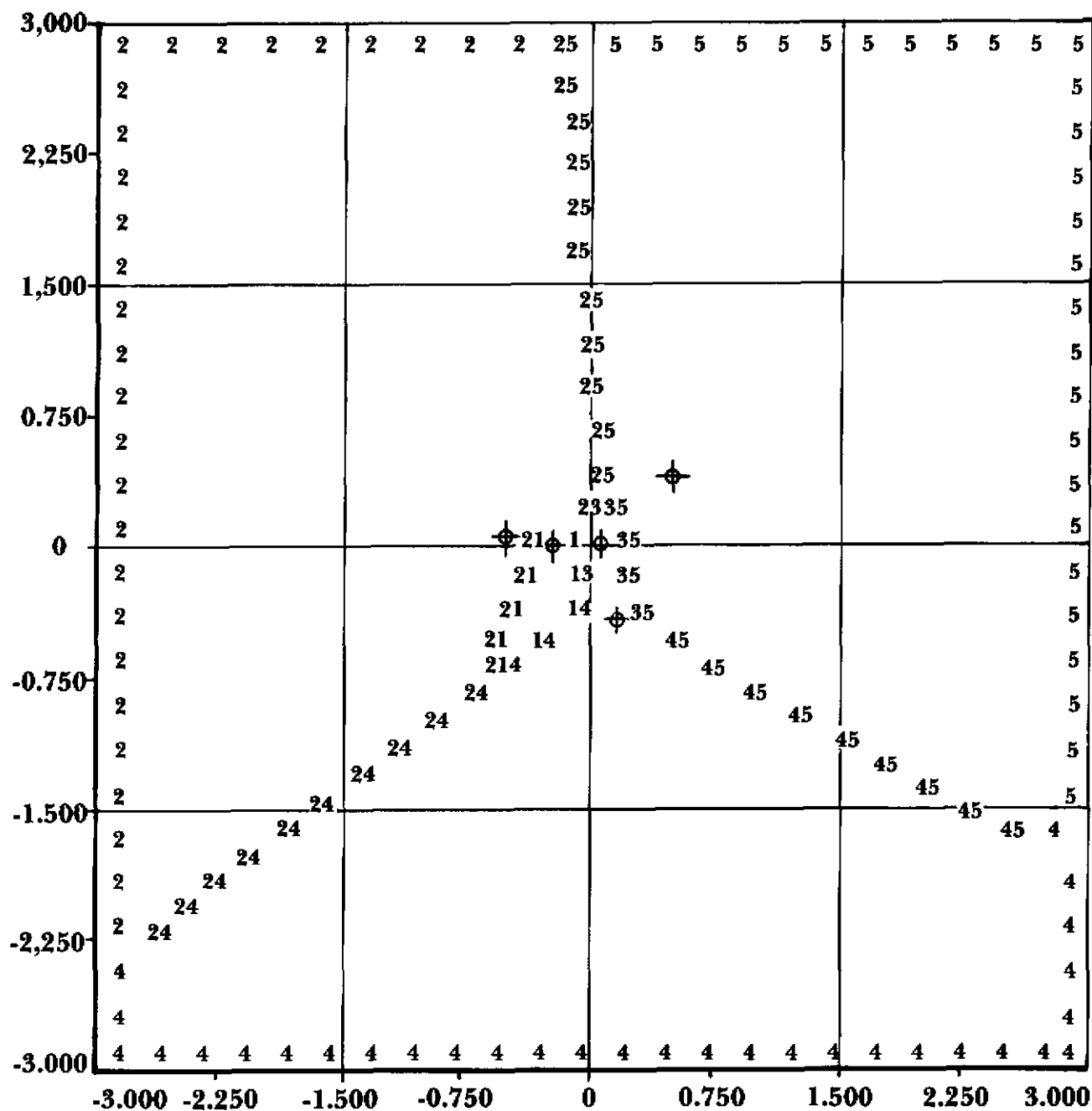


FIGURE No. 12

**Results thought out Path analysis
showing the variables under study.**

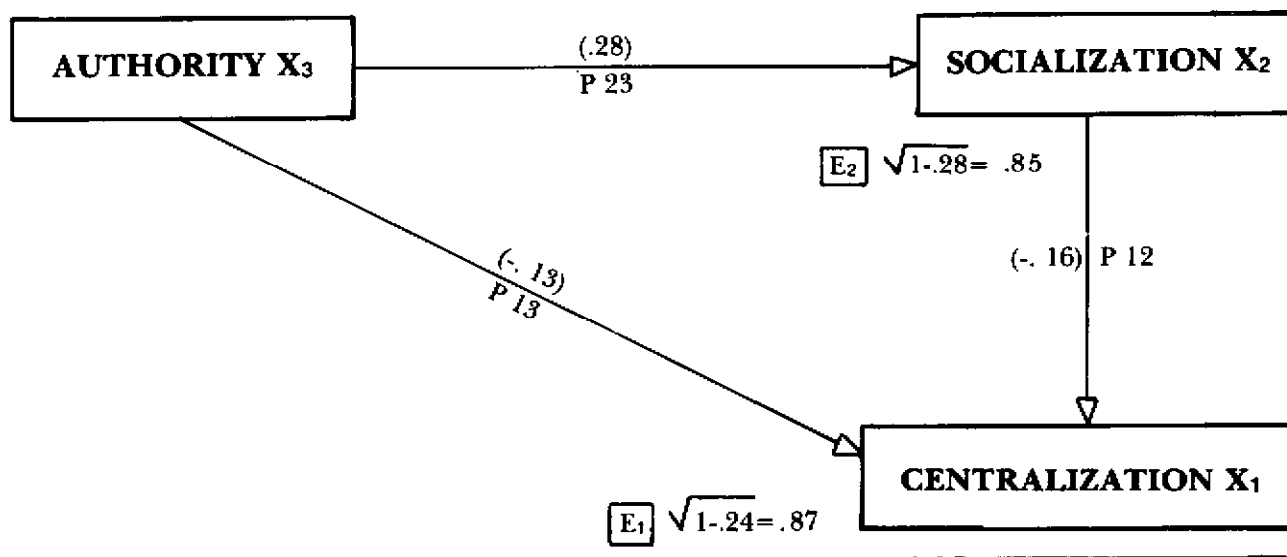


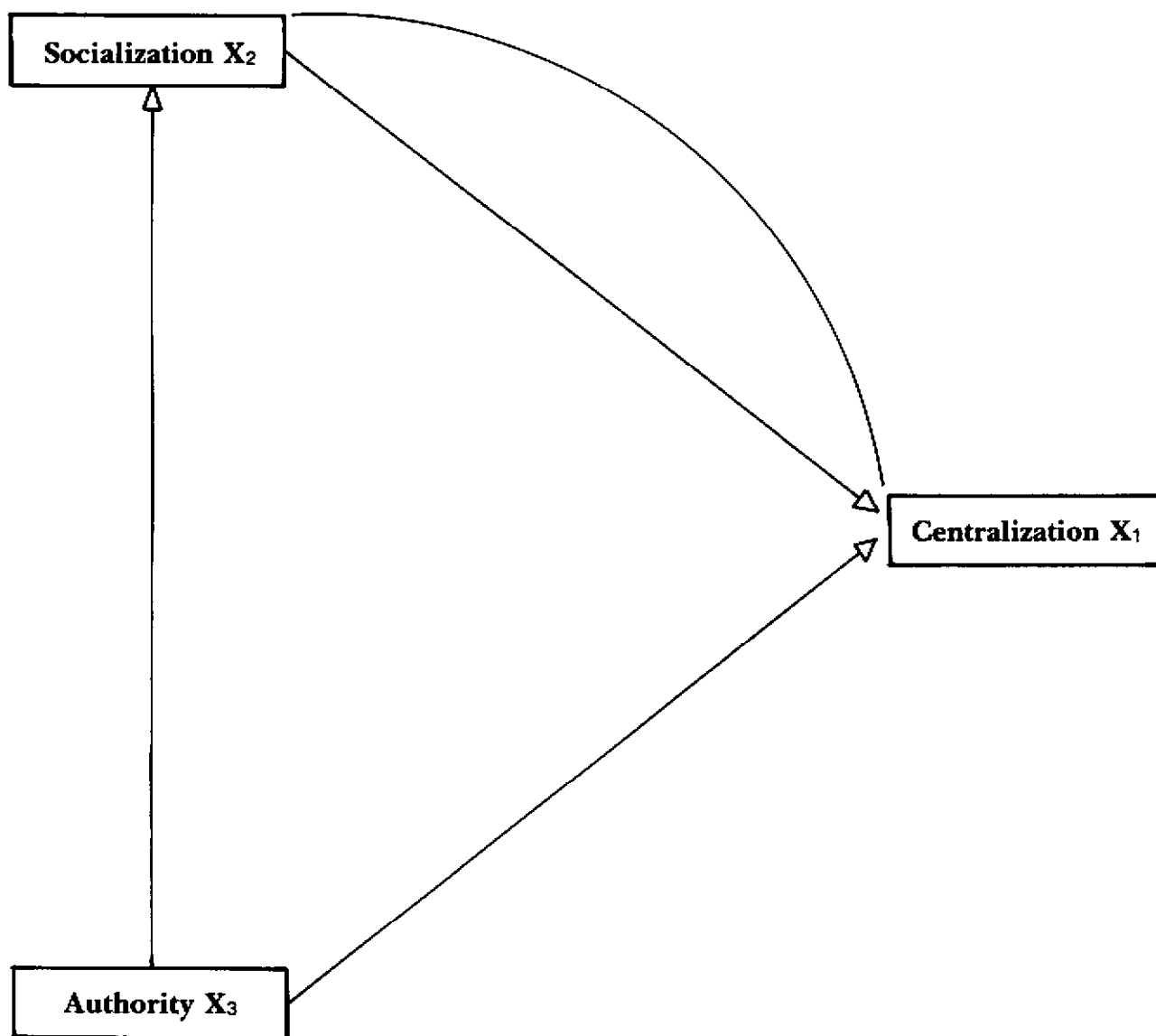
FIGURE No. 13

Descomposition of Bivariate Covariation

	(x_2, x_3)	(x_1, x_3)	(x_1, x_2)
(A) ORIGINAL COVARIATION = r_{ij}	.28	-.18	
(B) b_1 = Causal-direct	.28	-.13	-.16
b_2 = Causal-indirect	0	-.05	0
Total causal = $(b_1) + (b_2) = c_{ij}$.28	-.18	-.16
(C) NON causal = $(A) - (B) = r_{ij} - c_{ij}$	0	0	-.03

FIGURE No. 14

Final model of the Path analysis



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página interior	25,000.00	23,000.00
1/2 página horizontal	15,000.00	13,000.00
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1/2 columna	10,000.00	8,000.00

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