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ORGANIZATIONAL SIZE, STRUCTURAL DIFFERENTIATION AND THE MAN AT THE TOP IN HONG KONG

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ABSTRACT

The relationship between size and structural differentiation is examined using the survey data from a probability sample of 346 industrial undertakings in a developing industrial-urban community of Hong Kong. The industrial units studied are mostly small or medium sized. It is found that size is strongly and positively associated with both the horizontal (departmental division of labor) and the vertical (levels of management hierarchy) differentiation.

To consider the ethnic status of the man at the top of the industrial unit, we find that Chinese bosses are more likely than non-Chinese bosses to establish small sized units, and that Chinese bosses are less likely than non-Chinese bosses to organize a structurally differentiated unit. However, the variable of ethnic status has less effects than organizational size upon structural differentiation. The relationship between size and structural differentiation remains strong and positive, even if we control the variable of ethnic status.

This study contributes to our systematic understanding of the social structure of the industries in the developing World. It is suggested that in the forthcoming studies of the relationship between size and structural differentiation, some additional factors such as technological structure, organizational age, and form of recruitment, should be considered.

Organizational Size, Differentiation, and the Man at the Top in Hong Kong*

INTRODUCTION

A work-organization is a goal-oriented group of individuals. To achieve its goals, the organization has to perform many tasks and to coordinate the activities of its members. It then usually provides a differentiated structure so that different members or subgroups of members will perform different tasks and assume different responsibilities in a coordinated fashion. Organizations vary in terms of the degree of structural differentiation. A determinant of the variation seems to be the size of the organization, i.e., the number of personnel.

The increase of size will generate more tasks and more problems of coordination. To cope with the increasing number of tasks and problems of coordination, the organization will increase its structural differentiation along both the horizontal dimension (i.e., division of labor) and the vertical dimension (i.e,, levels of supervisory authority). It can therefore be hypothesized that the larger the size, the greater will be the degree of structural differentiation. The objective of this paper is to examine this hypothesis on the basis of our study of the industrial undertakings in a developing industrial -urban centre of Hong Kong. It is underscored that the industrial units studied are mostly small or medium sized. In other words, a large number of them employ less than 100 workers.

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* This paper is derived from a larger study directed by Victor Mok of the Social Research Centre, the Chinese University of Hong Kong. The initial study was financially supported by the Harvard-Yenching Institute and was under the auspices of the Social Research Centre, the Chinese University of Hong Kong. I would like to acknowledge the advice and assistance from Dr. Robert Chin, Dr. Al-li Chin, and Miss Grace Chiu. I am also indebted to Dr. Ambrose King for his coordinatorship of the present group of studies of organizations in Kwun Tong.

The relationship between size and social structure in work-organizations has been a major sociological problem.[1] A number of studies confirmed that size is positively associated with the degree of bureaucratic structure (Chapin, 1951; Tsouderos, 1955; Hickson, 1969; Caplow, 1967; Grusky, 1961; and Blau, Heydebrand and Stauffer, 1966). Modified statements, however, have been made by sociologists in recent years. Hawley, Boland and Boland (1965), Haas, Hall, and Johnson (1963) asserted that the relationship may not be linear, i.e., the increase of size initially generates an increase of bureaucratic complexity but then further growth decreases the complexity. In a recent study of employment security agencies, Blau and Schoenherr (1971) found that differences in size account for more than one half of the variance in the division of labor and in hierarchical differentiation, but that increasing size generates structural differentiation along various dimensions at decelerating rates. Nevertheless, since the industrial units in the present study are mostly small or medium sized, it would thus be likely that the smaller industrial units are structurally less differentiated than the larger industrial enterprises.

Previous studies of the relationship between size and structure were primarily concerned with work-organizations in the developed Western societies, such as in the United States and England. The organizations studied are usually quite large in size, The industry in the developing countries of Asia, however, is in fact dominated by small or medium sized units. For example, it was estimated that of the 16,408 registered industrial undertakings in Hong Kong in March 1971, about 90% employed less than 100 workers and about 71% employed less than 20 persons. The average size was 32 persons.

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[1] For more detailed reviews of literature concerning this issue, see Hall, Haas, and Johnson (1967), and Blau and Schoenherr (1971: Chapter 3).

The crucial role of small or medium industrial units in the process of economic development has received increasing attention from social scientists.[2] Their social-structural components have yet to be systematically studied. The present study of the industrial organizations in an industrial-urban community of Hong Kong will therefore not only contribute to the cross-cultural understanding of the general theory on the relationship between size and structural differentiation, but will also enhance our knowledge of the social-structural characteristics of the small or medium industrial units in comparison with the larger industrial organizations in the developing World.

In this paper, organizational size is simply defined as the total number of individuals working in a particular unit, while structural differentiation refers to the number of different types of work activities in the unit. As mentioned, our general hypothesis is that size will be positively related to the degree of structural differentiation in the industrial units studied.

Some sociologists, however, have argued that size may not be a crucial determinant of social structure (Hall, 1963; Hall, Haas, and Johnson, 1967; and Harvey, 1968). The argument seems to be two-fold: (1) size produces less effects upon social structural components than other factors do, and (2) the relationship between size and social structure may be affected by other variables. In view of these arguments, we propose that the present study of work-organizations in an industrializing Chinese community should take into consideration the ethnic status of the boss or the man at the top of a particular industrial unit. It is asserted that both size and structural differentiation would be a product of the ethnic status. Why?

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[2] For an overview, see Aubrey (1951) and Staley and Morse (1965). For a specific discussion on the role of small industrial units in the development of Hong Kong economy, see Dwyer and Lai (1967).

Members of an ethnic group usually share some common perspectives or ideologies, and are also confronted with similar problems. It is then expected that the industrial bosses who are members of the same ethnic group would have similar ways of operating and organizing their business. In other words, the size and the social structure in industrial units would be dependent on, or a product of, the ethnic statuses of the bosses. This dependency becomes more obvious, in view of the fact that the bosses of small industries are likely to be both the owners as well as the managers. Because of this dual role, the ideas of the boss would have a crucial impact upon the operation of the organizational unit.

In terms of ehtnic status, the industrialists in Hong Kong can be grouped into two categories: Chinese and non-Chinese. It seems that the Chinese entrepreneurs are more likely than the non-Chinese ones to establish small sized units with non-bureaucratic or relatively undifferentiated structures. This is primarily due to the scarcity of capital and the lack of modern managerial knowledge of the Chinese entrepreneurs. These two points are elaborated as follows.

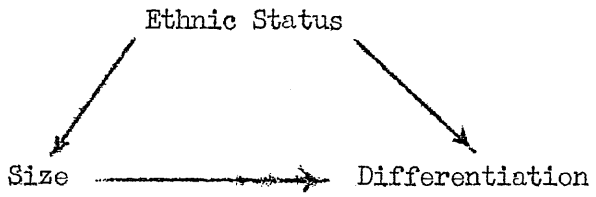
Of the various reasons for the scarcity of capital, we would like to suggest the ideology of independent entrepreneurship among the Chinese people. It is our impression that a number of Chinese people in traditional China and in Hong Kong of today share the perspective that "to be a chicken mouth is better than to be an oxtail" and that "to be an employed worker will lead to nowhere". These perspectives indicate a strong spirit of independent entrepreneurship among Chinese. As a consequence, the local Chinese in Hong Kong would tend to establish his own firm even though he may have a limited amount of financial resources. In fact, we find that in the present sample the industrial units owned by Chinese industrialists are mostly with a capital investment of less than HK$50,000.

In addition to the scarcity of capital, the Chinese entrepreneurs are also mostly handicapped by the limited amount of managerial knowledge they have. Most of them are now at their middle or old ages. They grew up in Mainland China or in Hong Kong, but during their younger years both places were relatively backward with respect to the development of industrial enterprises. They were then unlikely to be exposed to the modern-managerial procedures as used in the developed nations. Furthermore, since Hong Kong has a relatively short history of industrial development and most of the industrial units were established in the last 15 years, the Chinese entrepreneurs have not yet been able to accumulate a substantial body of managerial knowledge through practical experience.

Because of the scarcity of capital and of the lack of modern managerial knowledge, the Chinese entrepreneurs tend to employ a few workers and to establish a simple structure in their industrial units. Contrarily the non-Chinese entrepreneurs are generally in a better position to build large and complex industrial units. Most of them come from economically advanced nations, such as the United States, Japan, Britian, Australia, and Germany. Since they grew up economically well developed settings and have been able to extend their business to Hong Kong, they would be familiar with the modern managerial principles widely used in their countries of origin and would also have a sizable amount of capital resources.

On the basis of the afore-discussed rationale, we can therefore hypothesize that the Chinese bosses will be more likely to establish a smaller unit with less differentiated structure than the non-Chinese bosses. In other words, both size and structural differentiation may be a product of the ethnic status of the man at the top of the industrial unit. As a result, the size-differentiation relationship will be substantially reduced, or become spurious, if we control for the variable of ethnic status.

The interrelationships among the variables under study can be diagrammed as below:



Our major hypothesis thus becomes: organizational size will be positively related to structural differentiation, but this relationship will be preconditioned or explained by the ethnic status of the man at the top. This major hypothesis, in effect, consists of a system of sub-hypotheses; they are:

(1) The larger the size, the higher will be the degree of structural differentiation.

(2) Chinese bosses will be more likely than non-Chinese bosses to establish small sized units.

(3) Chinese bosses will be less likely than non-Chinese bosses to organize structurally differentiated units.

(4) The relationship between size and structural different -iation will disappear, or substantially reduced, if we control for ethnic status.

METHOD OF PROCEDURE

The Community. Hong Kong is one of the great commercial urban centres in the developing World. There are about 4 million people, of which about 98% are Chinese, concentrating in an area of 400 square miles. Ever since 1949, Hong Kong has been rapidly industrializing. There are currently about 17 thousand registered industrial undertakings and 600 thousand employees in industry. Most of these industrial undertakings are small-scale units, and are concentrated in two major new districts, Tsuen Wan and Kwun Tong.

Kwun Tong is located on the eastern coast of Kowloon Peninsula, Hong Kong. It has been rapidly industrializing and urbanizing over the past 17 years. There are about half a million residents living in the 23,000 acres. Presently there are over 2,000 industrial undertakings, mostly located in coastal areas of the district. Kwun Tong has, in effect, become a growing industrial-urban centre of Hong Kong. The present study will examine the hypotheses on the basis of the data from a sample of industrial units in this community.

The Sampling Survey. This paper uses part of the data collected by Victor Mok in his "Sampling Survey Study of Kwun Tong Factories in 1971". His objective was to analyze the internal operations of, and the inter-organizational linkages among, the registered industrial undertakings in Kwun Tong. An industrial undertaking is here defined as any premise or place (other than a mine or quarry) in which articles or materials are processed and transformed.[3]

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[3] For a detailed definition, see Section 2-1 of the Factories and Industrial Undertakings Ordinance, Hong Kong Government.

According to the "Employment and Vacancies Statistics" of 31st May, 1971, gathered by the Labour Department of Hong Kong Government, there was a total of 1,552 registered industrial establishments in Kwun Tong. These industrial undertakings can be classified into 14 major types.[4] A stratified probability sample of 346 industrial units was then drawn for the survey. A structured questionnaire in Chinese was developed to gather information through personal interviewing of the owner or manager in the factory setting within business hours in August 1971.[5]

Variable Measurement. The variable "Structural Differentiation" is specified into two dimensions: (1) departmental division of labor (horizontal differentiation), which refers to the number of divisions or departments dealing with different aspects of the organizational task, and (2) hierarchical differentiation), which refers to the strata which are vertically subdivided and arranged in terms of management responsibilities. Hence, it is our specific or working hypothesis that size will be positively related to both the degree of departmental division of labor and to the degree of hierarchical differentiation.

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4 They are (1) Food, beverages and tobacco, (2) Textiles, (3) Wearing apparel and leather industries, (4) Wood and wood products, including furniture, (5) Paper and paper products, printing and publishing, (6) Rubber products, (7) Chemicals, (8) Plastic products, (9) Glass and glass products, (10) Iron and steel basic industries, (11) Fabricated metal products, (12) Machinery, apparatus, appliances and supplies, (13) other manufacturing industries, and (14) service industries, such as transport, storage and ware-house, and personal and household services.

5 For a detailed description of Mok's study, see the progress report (August 1971) of the Kwun Tong Factory Survey prepared by Victor Mok and Louis Wong of the Social Research Centre, The Chinese University of Hong Kong.

The degree of departmental division of labor is measured by the item: How many major divisions or departments are there in your industrial establish -ment? The responses are scored as follows:

0 = No division

1 = 2 - 3 divisions

2 = 4 - 5 divisions

3 = 6 & over

The degree of hierarchical differentiation is measured by the item: How many levels of management are there in your industrial establishment? The responses are scored as follows:

0 = No stratification

1 = 2 - 3 levels

2 = 4 - 5 levels

3 = 6 & over

The variable "Organizational Size" is indicated by the item: What is the total number of personnel in your industrial establishment? The responses are scored as follows:

0 = Less than 20 persons

1 = 20 - 99 persons

2 = 100 - 199 persons

3 = 200 & over

The variable "Ethnic Status of the Man at the Top" is measured by the item: Is the boss of this industrial establishment a Chinese or not? This variable is transformed into a "dummy variable", and the responses are scored as follows:

1 = Chinese boss

0 = Non-Chinese boss

Statistical Note. Since (1) the variables under study will be skewed and are measured on ordinal scale, and (2) we are at this moment not willing to make a strong assumption on the direction of relationship, we will use Goodman and Kruskal's Gamma to measure the strength and direction of association between variables studied. It is a non-parametric and a symmetric measure of association between rank-ordered variables. Its value ranges from -1 to +1, and can be interpreted as the proportional reduction of errors in prediction. Moreover, since we are dealing with sample data, the Gamma Coefficients will be tested for significance.

FINDINGS

1. Size and Differentiation Prediction

Table 1 shows that the degree of division of labor and the degree of hierarchical differentiation are positively and strongly associated. The Gamma coefficient is .71, which is significant at the .01 level. Hence, the larger the number of departments or divisions in particular industrial units, the larger is also the number of vertical strata. Furthermore, a very large proportion of the industrial units under study have a very low degree of division of labor and of hierarchical differentiation. In fact, 40% of the industrial units have no departmental division of labor nor hierarchical differentiation. Then, how are these two components of structural different -iation related to size?

From Table 2 we observe that the Gamma coefficient for the association between size and division of labor is .71, and is significant at the .01 level. The relationship is positive and strong. It indicates that knowing the ranking of the industrial units in terms of personnel size, we can reduce 71% of the errors in predicting the ranking on the extent of departmental division of labor. Hence, we find that the larger the organizational size, the higher is the degree of departmental division of labor among the industrial units studied.

Table 3 shows that the relationship between size and the degree of hierarchical differentiation is positively strong and statistically significant at the .01 level of significance. The Gamma coefficient shows that knowing the ranking on size, we can reduce 80% of the errors in predicting the ranking on hierarchical differentiation. The relationship is even somewhat stronger than that between size and division of labor. We hence confirm that the larger the organizational size among the industrial units studied, the higher is the degree of hierarchical differentiation.

Table 3. Organizational Division of Labour and Authority Hierarchy

Hierarchy	Division of Labour				N
	No Division	2 - 3	4 - 5	6 & over	
No stratification	139	17	13	1	170
2 - 3	26	35	31	11	103
4 - 5	8	19	15	14	56
6 & over	2	5	2	6	15
N	175	76	61	32	344

Gamma = .71; $P < .01$ (Two-tailed Test)

Table 2. Organizational Size and Organizational Division of Labour

Size	Division of Labour				N
	No Division	2 - 3	4 - 5	6 & over	
1 - 19	138	26	17	2	183
20 - 99	30	33	24	17	104
100 - 199	2	13	21	9	45
200 & over	1	3	0	4	8
N	171	75	62	32	340

Gamma = .71; $P < .01$ (Two-tailed Test)

Table 3. Organizational Size and Levels of Authority Hierarchy

Size	Authority Hierarchy: No Stratification	2 - 3	4 - 5	6 & over	N
1 - 19	139	36	7	1	183
20 - 99	25	47	27	5	104
100 - 199	1	20	19	4	44
200 & over	0	0	3	5	8
N	165	103	56	15	339

Gamma = .80; $P < .01$ (Two-tailed Test)

Since size is significantly related to both departmental division of labor and hierarchical differentiation, we may assert that among the industrial undertakings in a developing community like Kwun Tong of Hong Kong, size is significantly and positively associated with structural differentiation.

2. Chinese/Non-Chinese Boss and Size Prediction

Let us now consider the preconditional variable "Ethnic Status of the Boss". The question is: how is it related to size and to the two components of organizational complexity?

Table 4 indicates that size is strongly but negatively related to the ethnic background of the boss. The Gamma value is -.58, and it is significant at the .01 level. In other words, industrial units with Chinese bosses are smaller in size than are those with non-Chinese bosses.

3. Chinese/Non-Chinese and Differentiation Prediction

Tables 5 and 6 show that ethnic status is also strongly but negatively associated with the degree of departmental division of labor (Gamma = -.41), and with the degree of hierarchical differentiation (Gamma = -.59). Both relationships are significant at the .01 level. Hence, we find that industrial units with Chinese bosses have a lower degree of departmental division of labor, and especially of hierarchical differentiation than those with non-Chinese bosses.

4. Relationship of Size, Differentiation and Chinese/Non-Chinese Prediction

Comparing the Gamma values, we note that size has a stronger relationship with the two components of organizational complexity than the ethnic status of the boss. Since ethnic status is significantly associated with both size and organizational complexity, we should then ask: how is the association between size and organizational complexity preconditioned by the ethnic status of the boss?

Table 4. Ownership Pattern and Organizational Size

Ownership	Size				N
	1 - 19	20 - 99	100 - 199	200 & over	
Foreign	5	10	3	6	24
	(2.8)	(10)	(11.5)	(26.1)	(7.3)
Non-Foreign	177	90	23	17	307
	(97.2)	(90)	(88.5)	(73.9)	(92.7)
N	182	100	26	23	331
	(100)	(100)	(100)	(100)	(100)

Gamma = -.58; $P < .01$

Table 5. Ownership Pattern and Division of Labour

Ownership	Division of Labour				
	No Division	2 - 3	4 - 5	6 & over	N
Foreign	7	7	3	7	24
	(4)	(9.6)	(5.4)	(21.9)	(7.2)
Non-Foreign	167	66	53	25	311
	(96)	(90.4)	(94.6)	(78.1)	(92.8)
N	174	73	56	32	335
	(100)	(100)	(100)	(100)	(100)

Gamma = -.41; $P < .01$

Table 6. Ownership Pattern and Levels of Authority Hierarchy

Ownership	Authority Hierarchy: No Stratification	2 - 3	4 - 5	6 & over	N
Foreign	4	9	7	4	24
	(2.4)	(9.2)	(13.2)	(26.7)	(7.2)
Non-Foreign	165	89	46	11	311
	(97.6)	(90.8)	(86.8)	(73.3)	(92.8)
N	169	98	53	15	335
	(100)	(100)	(100)	(100)	(100)

Gamma = -.59; $P < .01$

Among the industrial units with Chinese bosses, the Gamma coefficient for the relationship between size and division of labor is .72; while among those with non-Chinese bosses, the coefficient is .76. Both are positive and strong, and are significant at the .01 level (two-tailed test). Since the original relationship between size and division of Labor is .71, obviously ethnic status does not have a significant impact upon the original association.

Among the industrial units with Chinese bosses, the Gamma value for the association between size and hierarchical differentiation is .79; while among those with non-Chinese bosses, the value becomes .48. Both are positive and strong, and are also significant at the .01 level (two-tailed test). However, the relationship between size and hierarchical differentiation is stronger among industrial units with Chinese bosses than among those with non-Chinese bosses.

Our elaborated analysis shows that ethnic status has a somewhat stronger effect on the relationship between size and hierarchical differentiation than the relationship between size and division of labor. Nevertheless, in general the relationships between size and structural differentiation (both division of labor and hierarchical differentiation) remain positive and strong, even if we control for the ethnic status of the man at the top.

SUMMARY AND DISCUSSION

The relationship between size and the various aspects of bureaucratic structure is a major issue in sociology of work-organizations. The present study examines the effects of size upon the structure of differentiation, using the survey data from a stratified probability sample of over three hundred industrial undertakings in a developing industrial-urban community of Hong Kong. The units under study are mostly small or medium sized industries. In fact, 54% of them employ fewer than 20 persons, and 84.5% have less than 100 employees.

Since increasing size gives rise to a greater volume of tasks and problems of coordination, the organizational units would then create a more differentiated structure so that different individuals will carry out different tasks and responsibilities in a coordinated fashion. It is therefore expected that the small industrial units will have a lower degree of structural differentiation than the larger organizations.

Two dimensions of structural differentiation are studied; they are departmental division of labor (horizontal differentiation) and hierarchical differentiation (vertical differentiation). We find that size is strongly and positively related to both departmental division of labor and hierarchical differentiation. In other words, it is confirmed that the larger the size the higher would be the degree of structural differentiation, along both horizontal and vertical dimensions, in the industrial units studied.

To elaborate the relationship between size and structural differentiation, we introduce a third variable: ethnic status of man at the top. The first three questions to be considered are: (1) How is structural differentiation dependent upon the ethnic status of the man at the top of an industrial unit? (2) Does ethnic status have stronger effects than size upon structural differentiation? and (3) Is ethnic status associated with size?

We find that structural differentiation is significantly related to ethnic status. Chinese bosses are more likely than non-Chinese bosses to organize industrial units with a low degree of departmental division of labor and of hierarchical differentiation. However, the impact of ethnic status upon structural differentiation is not as strong as that of size.

We also find that ethnic status is significantly associated with size. Chinese bosses are more likely than non-Chinese bosses to establish small sized units. Since ethnic status is significantly related to both size and structural differentiation, would it disturb the original relationship between size and differentiation?

In controlling for ethnic status, we find that size and structural differentiation (both division of labor and hierarchical differentiation) remain strong and positive relationships. We thus conclude that size may have strong and independent effects upon structural differentiation in the industrial units under study.

The implication of this study is at least two-fold. First, previous studies of the work-organization in Western societies have contributed different propositions on the relationship between size and structural differentiation. The present study suggests that the relationship may be strong and positive among the industrial units in the developing World, which is characterized by a large number of small and medium sized industries.

Second, many economic studies have pointed out the differences between small and large industries in the developing countries in terms of their economic structure and functioning, such as the mode of technology, types of product, quantity of production, and size of capital investment.

The present study suggests that the social structure of small sized industrial units may also be significantly different from that of the larger enterprises. In particular, the smaller units are structurally less differentiated than the larger units.

Some limitations of this paper should be discussed. First, we have attempted to provide an empirical examination of the relationship between size and structural differentiation by controlling for the ethnic status of the boss, but the relationship may also be interpreted or conditioned by other factors, such as technology, age of the industrical unit, and recruitment pattern.[6] Let us sociologically imagine how these three factors would affect the relationship between size and structural differentiation.

Let us first consider the variable of technology. The framework of socio-technical systems in the study of work-organizations has received increasing attention from social scientists (Thompson and Bates, 1957; Trist and Bomforth, 1951; Udy, 1959; Woodward, 1965; Harvey, 1968; and Perrow, 1970). It is asserted that the various aspects of an organization's internal structure are dependent on its technology. Furthermore, as Perrow (1967) has strongly argued, a meaningful study of the effect of size on social structure can be made only if we control for technological structure.

It is our impression that the small and large industrial undertakings studied may indeed have different patterns of technology. The smaller industries mostly have a limited capital. Their production technologies are thus relatively simple and changeable so as to be adaptive to the changing market-demands. A

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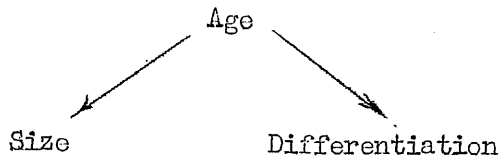
6 Other factors may also be relevant, such as types of production, age and educational background of owners or managers. In the present paper, however, we limit the scope of discussion on the three organizational features as mentioned.

simple and flexible social structure seems to be appropriate for the technological pattern. Conversely, the larger industrial units mostly have a sizable capital. They are likely to introduce complex machines and specific skills so as to generate a mass production of standardized goods. This technological pattern is generally less adaptive to change in the market-demands. Because of its complex and stabilized technology, a large industrial unit seems to be likely to develop a differentiated network of social relations. In short, the small and large sized industrial units may have different patterns of technology, which may have differential effects upon structural differentiation. The role of technology in relation to size and differentitation may be diagrammed as below:

Size ⟶ Technological Pattern ⟶ Differentiation

The relationship of size to structural differentiation may also be conditioned by the age of organization. It takes time for an organization to be developed. The accumulation of capital over time makes it possible to expand its size, and the accumulation of entrepreneurial experience facilitates its structuring of the unit in a more differentiated fashion. This rationale can be diagrammed as below:



In other words, both size and structural differentiation may be a product of the organizational age. Among units of the same age, the relationship between size and differentiation may become insignificant.

Let us now turn to the recruitment pattern. As previously argued, the technology of small units may be simpler than that of large units. With a simple technology, the small units can afford to recruit workers on the basis of particularistic criteria, i.e., on the basis of friendship and kinship connections. With a complex technology, however, the large units tend to place more emphasis upon universalistic achievement, i.e., technical competency, rather than particularistic considerations in the process of recruitment. Hence the form of recruitment in small sized units may be more likely to be particularistic than that in large sized units.

It seems to be rather difficult for kins or friends working in the same place to establish a clear-cut and formalized pattern of division of labor and of hierarchical differentiation. As a result, the small units may have a lower degree of structural differentiation than the larger enterprises. This reasoning can be diagrammed as below:

Size ⟶ Recruitment Form ⟶ Differentiation

The diagram shows that the relationship between size and differentiation may be interpreted by the factor of recruitment pattern. In other words, the relationship may be substantially reduced if we control for the form of recruitment.

The aforementioned factors (technology, age and recruitment) may generate significant effects upon the relationship between size and structural differentiation. However, it is unfortunate that we have no systematic data to verify their plausibilities. This is not infrequently a shortcoming of utilizing secondary data which were initially collected for other purposes. Further studies are thus needed.

The second limitation of this paper is that each concept is measured by a single item in a survey questionnaire. This kind of crude measurement in organizational study might have a high degree of unreliability or invalidity. Our conclusions in this paper may thus be misleading.

Since in general the relationships under study conform to our theoretical expectations, the problems of validity and reliability may be tolerable. It seems possible to assert that our measurements are to a large extent "externally valid".[7] Nonetheless it is advisable for further studies to consider multipe indicators in the measurement of concepts.

The third limitation of this study is that our analysis and interpretation of the data are primarily based upon the values of Gamma coefficient. It is basically a measure of the degree of agreement between two rank orders, or of the general "monotonicity" of the underlying relation. Throughout the paper, we do not explicitly attempt to show whether or not there are curvilinear or nonmonotone relationships. Nevertheless since the values of Gamma coefficient are significantly strong. We may assert that the relationships are unlikely to be nonmonotone (See Hays, 1963: 641-634).

The fourth limitation of the present paper is that the values of each variable are grouped into a few categories. An advantage of this measurement strategy is that it may lead to an increase of reliability, but the disadvantage is that the degree of precision is reduced. As a result, we are unable to make a specific attempt to shed light on Blau's proposition that increasing size gives rise to structural differentiation at declining rates.

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7 External validity refers to the degree to which the variable-measurements are meaningfully connected with each other.

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