

## Part I

### The Problem and Theoretical Considerations

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#### 1 The Problem

In this introductory chapter I propose first, to examine data which show the various behavioural and attitudinal consequences of organizational size<sup>1</sup> and second, to present the general problem with which this study will be concerned.

The general thesis concerning the ‘size effect’ is by no means a new one. In political science it has long been argued that democracy functions efficiently only in relatively small units.<sup>2</sup> Early sociologists were also familiar with the size problem. In his *Division of Labour in Society* Durkheim stated that:

“...small scale industry where work is less divided displays a relative harmony between worker and employer. It is only in large scale industry that these relations are in a sickly state.”<sup>3</sup>

Likewise, Marx<sup>4</sup> noted that the growth of large scale industry, by concentrating large numbers of men into organizations in which there was only minimal employer-employee interaction, was instrumental in arousing ‘class consciousness’ and in intensifying the conflict between capital and labour. In a different way Simmel<sup>5</sup> noted some of the structural changes that were induced by increases in size.

More recently, studies have been carried out by writers seeking to produce relatively precise evidence of this ‘size effect’ in industry by using various indicators of conflict and employees’ attachment to their organizations. The main results in this respect have been as follows:

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- 1 By *size* is meant the total number of employees within an organization.
  - 2 For example, see: John Dewey, *Freedom and Culture* (New York, 1939), p. 159; Gunnar Myrdal, *An American Dilemma* (New York, 1944), pp. 716-19. For the classic analysis see Aristotle’s *Politics*.
  - 3 Emile Durkheim, *The Division of Labour in Society* (Glencoe, Ill., 1933), p. 356.
  - 4 Karl Marx, ‘Germany: Revolution and Counter Revolution’, in V. Adoratsky (ed.), *Selected Works of Karl Marx*, vol. 2, p. 470 (New York, n.d.).
  - 5 Georg Simmel, ‘The Number of Members as Determining the Sociological Form of the Group’, *American Journal of Sociology*, vol. 8 (1902).

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(i) Cleland,<sup>1</sup> in his study of industrial organizations in the Trenton area of New Jersey has taken the incidence of strike activity to show a direct association between organizational size and management-worker conflict.

(ii) Revans<sup>2</sup> has used a similar index with data collected from the British nationalized coal industry and shows a direct relationship between colliery size and strike activity.

**Absence**

(i) In the first of two research reports the Acton Society Trust<sup>3</sup> show that the correlation between size and the rate of absence for 18 collieries in the 'Pollockfield' area of the National Coal Board was + 0.667 (sig. 2% level). Data from the Digest of the Ministry of Fuel and Power were recalculated by these researchers and showed a correlation of "more than + 0.60" for absenteeism and colliery size throughout the industry as a whole. These findings were followed by an investigation into private industry of various kinds where the correlation between size and the rate of absenteeism proved to be + 0.447 for 91 units (sig. level 1:500,000).

(ii) Revans<sup>4</sup> has noted that, in 67 gasworks administered by one of the regional gas boards, the correlation between absence and size was + 0.62. Lateness may be classified as a form of absence and Revans similarly showed that there was a strong positive relationship between size of unit and the frequency of lateness per year in five randomly chosen gasworks.

(iii) In the second of two articles on the 'size effect' Indik<sup>5</sup> reports that, in a set of 32 delivery organizations, an index of 'member participation' derived from absence rates showed a significant negative correlation with size ( $- 0.53, p < 0.01$ ).

(iv) Hewitt and Parfit,<sup>6</sup> in a study of a textile piece goods and hosiery

1 Sherril Cleland, *The Influence of Plant Size on Industrial Relations* (Princeton, 1955).

2 R. W. Revans, 'Industrial Morale and Size of Unit', *Political Quarterly*, vol. 27 (1956), and 'Human Relations, Management and Size', in E. M. Hugh-Jones (ed.), *Human Relations and Modern Management* (Amsterdam, 1958).

3 Acton Society Trust, *Size and Morale*, parts I and II (London, 1953 and 1957).

4 Revans, 'Human Relations, Management and Size'.

5 B. P. Indik, 'Organizational Size and Member Participation: Some Empirical Tests of Alternative Explanations', *Human Relations*, vol. 18 (1965).

6 D. Hewitt and J. Parfit, 'A Note on Working Morale and Size of Group', *Occupational Psychology*, vol. 27 (1953).

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factory noted that their observed association between size and absence was statistically significant at the 5% level.

### Accidents

(i) The 'Pollockfield' data used by the Acton Society Trust<sup>1</sup> also showed a correlation of + 0.50 between the incidence of accidents and colliery size. The national figures also show that the rate of accidents per 100,000 man shifts worked increases with size of colliery.

(ii) Revans<sup>2</sup> notes that there was a high and significant correlation (+ 0.96, sig. 3% level) between absence due to accidents and size of unit in five randomly chosen gas works.

### Labour Turnover

(i) Although he presents no data, Cleland concluded that labour turnover was generally lower in the smaller of his sample of over 80 plants.<sup>3</sup>

(ii) Indik<sup>4</sup> shows that an index of 'member participation' derived from quit rates correlated negatively with organizational size ( $-0.34, p < 0.05$ ) in a set of 36 automobile dealerships.

### Other Findings

Other studies have shown the relationship between size and miscellaneous attitudinal and behavioural patterns. The main findings are as follows:

(i) Talacchi's<sup>5</sup> research revealed a correlation between size and a measure of general job satisfaction of  $-0.67$ . A significant negative correlation was also found between the level of satisfaction and the level of absenteeism, but an examination of the labour turnover data and the level of satisfaction did not show any significant relationship, although a negative association had been hypothesized.

(ii) Thomas<sup>6</sup> found that the quality of work performance and the 'degree of ethical commitment' were greater in the smaller of the welfare bureaux he studied.

(iii) Campbell<sup>7</sup> discovered that as the size of the work group increased,

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1 Acton Society Trust, *Size and Morale*, part I.

2 Revans, 'Human Relations, Management and Size'.

3 Cleland, *The Influence of Plant Size on Industrial Relations*.

4 Indik, 'Organizational Size and Member Participation'.

5 S. Talacchi, 'Organizational Size, Individual Attitudes and Behaviour: An Empirical Study', *Administrative Science Quarterly*, vol. 5 (1960).

6 E. J. Thomas, 'Role Conceptions and Organizational Size', *American Sociological Review*, vol. 24 (1959).

7 H. Campbell, 'Group Incentive Payment Schemes', *Occupational Psychology*, vol. 26 (1952).

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the percentage of workers understanding the incentive payment scheme decreased and that this led to a reduction in the level of satisfaction with the system.

(iv) In discussing the mental health of the industrial worker, Kornhauser<sup>1</sup> concluded that large scale organization has a negative effect on mental health and, further, that this effect is to some degree independent of occupational differences.

(v) Marriott<sup>2</sup> found a low, but significant correlation between size of work group and individual output. However, in this connection it must be pointed out that Revans<sup>3</sup> has shown an association between output of coal per man year and size of colliery in which output increases with size to the middle ranges and then declines with increasing size.

The present study will be concerned solely with the relationship between industrial workers' rates of absenteeism and labour turnover and size of organization. The reasons for the exclusion of other phenomena such as strike activity and industrial accidents are, in the main, those of convenience. It was felt that to include these would have expanded the research to proportions which, within the limits set by time and resources, would have been unmanageable. Furthermore, the most recent work in this field (Talacchi and Indik), around which most critical discussion will take place, has concentrated on absenteeism and labour turnover.

For the research eight organizations, with certain common characteristics,<sup>4</sup> in the light engineering industry in Bradford were randomly selected from a list of firms compiled from the local trade telephone directory. The total sizes of the plants at the time absence and labour turnover data were collected<sup>5</sup> were as follows:

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- 1 A. Kornhauser, *Mental Health of the Industrial Worker* (New York, 1965).
  - 2 R. Marriott, 'Size of Working Group and Output', *Occupational Psychology*, vol. 23 (1949).
  - 3 Revans, 'Industrial Relations, Management and Size'. The size-productivity relationship will be dealt with in more detail in the concluding chapter.
  - 4 The type of technology, industry, skill level were controlled for various reasons which are discussed fully in this and subsequent chapters. A more detailed discussion of the sample of organizations is to be found in chapter 6.
  - 5 The absenteeism and labour turnover data were collected between December 1965 and February 1966. The labour turnover figures are for the three years 1963-5. The absence data refer to the twelve-month period 1965 with the exception of two cases where the data were collected from the period December 1964 – November 1965. This was made necessary by incomplete absence records in the two firms.

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<i>A</i>	5,000	(Departments <i>x</i> and <i>y</i> , 158)
<i>B</i>	3,000	(Department <i>z</i> , 90)
<i>C</i>	63	
<i>D</i>	26	
<i>E</i>	24	
<i>F</i>	16	
<i>G</i>	12	
<i>H</i>	9	

Plants *A* and *B* are branches of their respective enterprises, but all the small organizations are separate firms in their own right. The absence and labour turnover data were collected for semi-skilled and skilled workers only, and from the *whole firm* in the case of the small organizations. The figures for the semi-skilled and skilled men in plants *A* and *B* come from *departments* within the plants; two departments (*x* and *y*) containing, in all, 158 men were studied in plant *A* and in plant *B* one department of 90 workers was used.

Strictly speaking the absence and labour turnover data from the large plants should have been collected from each organization as a whole and not just from selected departments. Thus, it could be argued that my independent variable is department size rather than plant size. Two points are relevant to this problem. First, the reasons for this strategy were those of expediency. As we shall see later, it was necessary to control the possible effect of technology in analyzing the 'size-effect' and, therefore, only those departments with the appropriate technological system were considered. Also I wished to interview men from the organizations; but with limited time and resources I thought it better to have extensive coverage of one or two departments rather than draw a sample of about 60 respondents from a total population of over 8,000. Second, there are good reasons to believe that, in this case, it matters little whether the independent variable is size of plant or size of department. In the first place all three departments in the large plants were larger than any of the small firms. However, there is a more compelling reason to believe that this research design presents no serious problem. To anticipate the subsequent argument, it was decided that *bureaucratization* was the major structural variable linked to size and which was crucial in accounting for the behavioural patterns of the 'size-effect'. Consequently, it is only necessary to look at *bureaucratized sectors* of large plants in analyzing this particular problem.

### Absenteeism

Measures of absenteeism, in investigations of this kind, are often expressed as days lost as a percentage of days scheduled to be worked per week or per

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year. However objections have been made to the use of this measure on the grounds that it includes cases of absence due to 'genuine' sickness which may often be quite lengthy and thus distort the absenteeism rate – especially in small organizations. It is argued that as absence is being used as an indicator of dissatisfaction or 'low morale', then rates compiled from short deliberate and 'uncertified' absences may be the best measure.<sup>1</sup> However, there are good reasons to believe that the *total* absence rate is equally suitable and that the distinction in question is not very meaningful. First, such a distinction neglects the fact of psychosomatic illness, which may be at least partly induced by a depriving work situation.<sup>2</sup> Similarly, it becomes difficult to deal with the size-accident relationship if short *deliberate* absences are viewed as the most important measure. Furthermore, I would like to suggest that the actual length of 'illness' may be, to some extent, deliberately calculated: that is to say, dissatisfied workers may be more reluctant to return to work after illness. Second, large bureaucratically controlled organizations are likely to be more stringent than the small firm concerning short 'uncertified' absences and consequently the worker in the small firm may have to convert his proposed two day absence into a week's 'certified' sickness. In this connection Trist and Hill<sup>3</sup> have shown that the frequency of sanctioned absences increases, whereas unsanctioned absences decrease with length of service. This is interpreted as showing a process of learning to substitute acceptable for unacceptable forms of absence. Thus, it is quite possible that some large organizations will have quite low levels of short deliberate absenteeism.

A way of getting round any problems set by very lengthy absences, and without using the dubious 'certified-uncertified' distinction, is to follow the procedure suggested by Turner and Lawrence among others. In their investigation they used a measure calculated from the number of *times*, not days, men had been absent from work in a one year period. Thus, a six-month absence and a one-day absence both count as *one* absence.<sup>4</sup>

Both the total time lost measure and the number of times absent measure have been used to deal with the data collected for the present research. However, before presenting the data we must note the reasons for calculating

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- 1 See Acton Society Trust, *Size and Morale*, part I; A. Lundquist, 'Absenteeism and Job Turnover as a Consequence of Unfavourable Job Adjustment', *Acta Sociologica*, vol. 3 (1958).
  - 2 Kornhauser, *Mental Health of the Industrial Worker*.
  - 3 J. M. M. Hill and E. L. Trist, 'Changes in Accidents and Other Forms of Absence with Length of Service', *Human Relations*, vol. 8 (1955).
  - 4 Arthur N. Turner and Paul R. Lawrence, *Industrial Jobs and the Worker* (Boston, 1965). However, this measure is also subject to certain weaknesses. Lengthy absences will reduce the opportunity for absence.

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the absence rates for semi-skilled and skilled workers separately.<sup>1</sup> Several studies<sup>2</sup> have shown an *inverse* relationship between absenteeism and skill level and, therefore, the separate calculations have been made in order to eliminate any distortion in the comparison of organizations which may arise if the units in question differ in their relative proportions of skilled and semi-skilled men.

The relationship between organizational size and *total* absence is shown below in Table 1.1.

Table 1.1. Total absence by size of organization and skill level

Size of organization	Total absence*	
	skilled	semi-skilled
A 5,000	3.98%	6.60%
B† 3,000	5.00%	7.62%
C 63	3.18%	1.15%
D 26	2.01%	1.60%
E 24	0.29%	3.00%
F 16	2.20%	0.39%
G 12	0.60%	0.85%
H 9	0.64%	0.70%

\* Total absence =  $\frac{\text{Total days lost per year}}{\text{Total days scheduled to be worked per year}} \times 100$ .

† This department comprised about 20% immigrants (mainly Pakistani). They were excluded in the calculation of the absence rates and from later interviews. However, this group showed strikingly similar rates of absence to the native workers.

For example, if a man is absent for three months only one absence is possible in that period. Therefore, the longer the periods of absence the less frequent will absence tend to be.

- 1 For the purposes of the present research men are classified as skilled only if they have served an apprenticeship. Unskilled workers, supervisors and apprentices were excluded from consideration.
- 2 For some of the many studies which show this relationship see: Gladys Palmer *et al.*, *The Reluctant Job Changer* (Philadelphia, 1962); Hilde Behrend, *Absence under Full Employment*, University of Birmingham Studies in Economics and Society, Monograph A.3, 1951; M. Baldamus, *Efficiency and Effort* (London, 1959).

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The correlation between log size<sup>1</sup> and the total absenteeism rates proved to be highly significant for both skill levels,  $r = +0.86$  (sig. 1% level) and  $r = +0.94$  (sig. 1% level) for skilled and semi-skilled workers respectively.

The relationship between organizational size and average *number* of absences per man per year is shown in Table 1.2.

Table 1.2. Absences per man per year by size of organization and skill level

Size of organization		Absences per man*	
		skilled	semi-skilled
<i>A</i>	5,000	1.95	2.01
<i>B</i>	3,000	1.64	3.50
<i>C</i>	63	1.80	0.70
<i>D</i>	26	0.61	0.75
<i>E</i>	24	0.22	1.20
<i>F</i>	16	1.01	0.50
<i>G</i>	12	0.32	0.36
<i>H</i>	9	0.40	0.75

\* Number of absences per man per year  $\frac{\text{Total number of separate absences}}{\text{Total number of workers}}$

Again the correlations between log size and the absence measures proved to be highly significant. For skilled workers  $r = +0.80$  (sig. 2% level) and for semi-skilled workers  $r = +0.86$  (sig. 1% level).

Thus, there is a strong statistical relationship between the absence rate and organizational size in the sample in question here. In this respect the findings are consistent with those of the previously cited studies.

### Labour Turnover

The findings of the previous research into the size-labour turnover relationship are, in fact, not consistent. The Acton Society Trust<sup>2</sup> found no significant correlation between voluntary turnover (quit rate) and size – although

1 Log size is used in all correlations. This procedure was followed by Revans and the Acton Society Trust where they also had a sample of organizations that differed widely in size.

2 Acton Society Trust, *Size and Morale*, part I.



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a positive relationship had been expected. Similarly, the work done by Long<sup>1</sup> and the study carried out by the Institute of Personnel Management<sup>2</sup> also failed to find a significant relationship in this direction. On the other hand, Cleland<sup>3</sup> and Indik<sup>4</sup> do report such a relationship. To begin with two reasons may be suggested for this inconsistency. The first point concerns the adequacy of the way in which labour turnover has been measured. Usually, the quit rate is used; if, however, what is sought is an indicator of the level of organizational attachment among the majority of employees in the organization, then the 'stability rate' – that is, the proportion of long service workers in the organization – may be a more suitable measure. This measure would be especially useful in a situation in which an organization exhibited both a high quit rate and also possessed a large proportion of long service workers. For example, if a small number of unpopular jobs were causing a high quit rate it would be misleading to classify the total organization as comprising workers with a relatively low level of organizational attachment. Second, variables other than those usually considered by or of interest to sociologists are, of course, involved in determining labour turnover. For example, Long<sup>5</sup> and Cook<sup>6</sup> have demonstrated that there is a positive relationship between labour turnover and the level of employment; that is to say, in a situation of high unemployment there are fewer opportunities for job changing.

Therefore, *both* measures of labour turnover – the quit rate and the stability rate – have been used to interpret the data of the present study and the whole investigation was undertaken in the same city in order, among other things, to control the influence of the level of employment.

The average yearly quit rate for the years 1963-5 is shown in Table 1.3. The correlation between organizational size and the quit rate for the semi-skilled men proved to be of very low significance,  $r = +0.69$  (sig. 10% level). For skilled men the relationship is even weaker,  $r = +0.21$ .

The stability rate which refers to the proportion of long service workers (over 10 years) in the organizations in question also failed to show any significant relationship with size,  $r = -0.17$  (n.s.) and  $-0.12$  for skilled and semi-skilled men respectively (Table 1.4).

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1 J. R. Long, *Labour Turnover under Full Employment*, University of Birmingham Studies in Economics and Society, Monograph A.2 (1951).

2 Report of the British Institute of Personnel Management, Jan./June (1950); cited in Long, *Labour Turnover under Full Employment*.

3 Cleland, *The Influence of Plant Size on Industrial Relations*.

4 Indik, 'Organizational Size and Member Participation'.

5 Long, *Labour Turnover under Full Employment*.

6 P. H. Cook, 'Labour Turnover Research', *Journal of the Institute of Personnel Management*, vol. 33 (1961).

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Table 1.3. Mean Quit Rate by Size of Organization, and Skill Level

Size of organization	Mean quit rate* (1963-5)	
	skilled	semi-skilled
<i>A</i> 5,300	28.6%	38.1%
<i>B</i> 3,000	17.7%	35.2%
<i>C</i> 63	16.9%	44.9%
<i>D</i> 26	21.6%	20.0%
<i>E</i> 24	33.3%	16.6%
<i>F</i> 16	26.2%	16.6%
<i>G</i> 12	16.6%	0%
<i>H</i> 9	11.1%	16.6%

$$* \text{ Quit rate} = \frac{\text{Number of leavers per year}}{\text{Total number employed}} \times 100.$$

Table 1.4. Stability Rate by Size of Organization and Skill Level

Size of organization	Stability rate*	
	Over 10 years service	
	skilled	semi-skilled
<i>A</i> 5,000	45.0%	20.8%
<i>B</i> 3,000	38.5%	31.7%
<i>C</i> 63	30.5%	30.0%
<i>D</i> 26	37.5%	16.7%
<i>E</i> 24	16.7%	30.0%
<i>F</i> 16	16.7%	50.0%
<i>G</i> 12	100.0%	0%
<i>H</i> 9	66.6%	50.0%

$$* \text{ Stability rate} = \frac{\text{Number of long service workers}}{\text{Number of employees}} \times 100.$$