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PERS 335

DETERMINANTS OF BLACK STRIKE ACTIVITY  
IN SOUTH AFRICA, 1976-1981

NATIONAL INSTITUTE FOR PERSONNEL RESEARCH  
COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH

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Johannesburg, Republic of South Africa, January 1982

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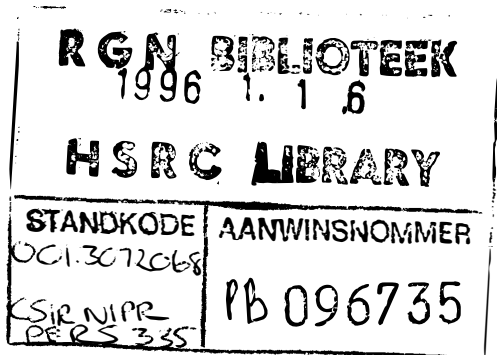
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Dr A Galin, a visiting research scientist from Tel-Aviv University, undertook this study on "Determinants of Black Strike Activity in South Africa, 1976-1981" for the NIPR. In view of certain reservations regarding the statistical treatment of her data in the report, a second report was written by R S Hall and C Chemel. It is suggested that the two reports be read together.

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ABSTRACT

Despite the Black strike activity being a major issue in the South African industrial relations, empirical studies of the determinants of such activity are very rare. This study, based on a multivariate analysis of Black strike activity in the last few years, explains some major determinants and indicates some possible trends in the Black strike activity.

# DETERMINANTS OF BLACK STRIKE ACTIVITY IN SOUTH AFRICA, 1976-1981

A Galin

## 1. INTRODUCTION

The increased reliance of the South African economy on Black labour in recent years, together with the increased awareness of Black workers of their economic power, have pushed the interest in determinants and pattern of Black strike activity to the forefront in current and future industrial relations in South Africa.

The significance of the empirical analysis of strike activity to the understanding of labour-management relations has been a controversial issue for some time. Some researchers believe that strike activity is merely a symptom of a more fundamental problem. Others maintain that strikes are an overt expression of discontentment and reveal the attitudes of the workers to their situation. For the purpose of this study it has been assumed that in South Africa Black strike activity is an expression and a reflection of problems experienced by Blacks within the context of rapidly changing industrial relations. Thus the study of the determinants of Black strike activity may give some insight into the nature of current industrial conflict in South Africa.

The aim of this study was to examine the determinants of Black strike activity in recent years from several points of view; Economic, Political, Industrial Relations and Integrative. These approaches may be described briefly as follows:

(i) The Economic Approach<sup>1</sup>

Most of the early work on strike activity has an economic orientation both with regard to assumptions and interpretations. Several dimensions of economic activity have been assumed to have a major bearing on the pattern of strikes. Of these, the most important ones are: the labour market, periods of prosperity and real wage changes.

Some assumptions underlie the study of real wage changes as an explanatory variable with regard to strike activity: (a) that strikes are a form of protest behaviour, (b) that such protest behaviour is caused by the discrepancy between labour expectations and actual labour achievements, and (c) that labour expectations are influenced by actual wage changes in the past, while achievements are symbolised by current proportional wage increases. On the basis of these assumptions it has been argued that it is possible to explain strike activity in terms of the discrepancy between wage expectations and actual wages. The greater the discrepancy, the greater will be the tendency to strike.

Recently the economic model of strike activity has been expanded to include inflation rate calculated on the basis of changes in the Consumer Price Index (CPI). It has been assumed that a relatively high rate of inflation increases the gap between wage expectations and actual wages. At the same time, owing to the uncertainty element introduced by inflation, the parties involved in bargaining, especially Labour, adopt extreme positions.

The inclusion of economic prosperity as a predictor of strike activity is based on the assumed bargaining advantages of trade unions during periods of full employment. Strikes and other pressure measures are greatly promoted by the employer inability to replace strikers, and their reluctance to lose their share of

the expanding market. In periods of unemployment, on the other hand, potential strikes are discouraged by the excess labour supply which renders workers less militant and employers less vulnerable. Hence the level of strike activity is influenced by labour supply availability.

(ii) The Political Approach<sup>2</sup>

Ever since Dunlop incorporated political factors in the broad theoretical framework of industrial relations several studies have assumed some association between political factors and level of strike activity. The major political variables assumed to have an impact are: the ruling party with regard to orientations (socialistic, liberal) and strength (number of MP's in Parliament); the political affiliation of the president or the prime minister; labour legislation; the size of the cabinet; and elections.

Some researchers attribute a decline in strike activity to the interest of labour orientated ruling parties in discouraging union militancy and to the reluctance of union leaders to embarrass a socialist government. It has also been argued that the rise of a socialistic party may change the power conflict to a 'positive sum' type of conflict, and thus render the strike weapon useless in affecting the distributive process. Some evidence in the United States of America also indicated that strike activity level varies depending on whether the USA House of Representatives is controlled by the Democratic Party or by the Republicans. It has also been found that the political affiliation of the USA president affects strike activity.

While the logic underlying the use of labour legislation as a predictor of strike activity is relatively clear, the relevance of election periods and cabinet size requires elaboration. The assumption regarding cabinet size is based on the theory of pressure groups. The thrust of the theory is that under a large

cabinet a larger number of pressure groups can promote their interests within the institutionalised political framework, and are not pushed to overt demonstration of power and protest in the form of strikes. The association between strike activity and elections may be explained in terms of labour expectations of strike success by putting pressure to bear during election. It is assumed further that unions under a labour orientated government will try to minimise their strike activity during election in order to promote re-election of that particular party.

(iii) The Industrial Relations Approach

The traditional approaches to the analysis of strike activity are Economic and Political. Some variables, which may be classified as purely industrial relations variables, such as number of trade unions or trade union power, have been included traditionally within either of the other two analyses. Others, such as the number of employees covered by collective agreements (in South Africa, industrial councils agreements) or labour-management committees (in South Africa, works and liaison committees) have often, unjustifiably, been disregarded. However, the infrastructure of the industrial relations system, as reflected by such variables, may have a major impact on strike activity and should therefore also be analysed separately.

The most important variable within the industrial relations approach is trade union membership.<sup>3</sup> Degree of unionisation crucially affects strike activity as Labour derives its collective bargaining power from being organised.

(iv) The Integrative Approach<sup>4</sup>

As the determinants of strike activity range across several fields of study (economic, political and the inter-disciplinary field of industrial relations) an integrative approach is required for

maximum insight. In order to construct an integrative model, a multivariate analysis is called for to identify the 'pure' impact of each variable, after taking into consideration the effect of the other variables on strike activity. Several integrative studies have indicated that some variables, which have been found to be significant when studied separately or within the context of the relevant approach, could be less or even insignificant once more variables from other fields are introduced. Thus, in order to conceive the whole picture and to eliminate, as far as possible, the impact of intervening variables it is necessary to adopt an integrative approach to the study of strike activity.

## 2. THE STUDY

In order to analyse the determinants of strike activity by Blacks in South Africa according to the above approaches, several models had to be constructed, namely the economic, political, industrial relations and integrative models. Before describing each model in detail it is necessary to discuss the main characteristics of Black strike activity, especially since the various dimensions of this strike activity will constitute the dependent variables for all the models.

### 2.1 Some Characteristics of Strike Activity by Blacks

The study of Black strike activity is based on detailed data covering the past five years (March 1977 - April 1981). During this period it is evident that Black strike activity forms the major part of strike activity in South Africa. (Between 1977 and 1980, Black strikes constituted 90 to 100 percent of the total annual strike activity.) Moreover, the figures for the individual years do not indicate any decreasing trend in the major role that Black strike activity plays in the total strike activity in the Republic.

Three major dimensions of strike activity have been included in our study:

- The frequency of the strikes - number of strikes initiated by Blacks.
- The involvement in the strikes - the number of Black workers involved in strikes.
- The volume of the strikes - the number of days lost due to strikes by Black workers.

The figures for each of these three dimensions were 'deflated' in accordance with changes in the number of employees, and in this way the three dependent variables used in all the models were obtained, i.e.:

- The relative frequency of the strikes - the number of Black strikes per 1 000 Black workers.
- The relative involvement in strikes - the number of Black strikers per 1 000 Black workers.
- The relative volume of the strikes - the number of days lost due to these strikes per 1 000 Black workers.

These relative measures are independent of the size of the work force and allow for better comparison with other countries. They also permit trends in strike activity over the years to be established.

In general the intensity of Black strike activity in South Africa is much lower than that of workers in many other industrialised countries. The relative figures (per 1 000 employees) for Black strike activity are given in Table 1. The relative figures for strike activity in other industrialised countries in 1979 are given in Table 2 for comparison.



TABLE 1: Yearly Data of Black Strike Activity  
(per 1 000 Black Employees)

	Strikes per 1 000 employees per year	Strikers per 1 000 employees per year	Days lost per 1 000 employees per year
1977	0,016	2,96	2,49
1978	0,018	3,14	2,90
1979	0,020	4,44	5,56
1980	0,050	15,98	50,30

Comparison of the data for Black strike activity per 1 000 Black employees in 1979 with the 1979 strike activity in 15 industrialised countries (per 1 000 employees) reveals that Black strike activity is relatively very low. Only in the Netherlands, Switzerland and Norway was the frequency of strikes per 1 000 employees found to be lower than that of Black strikes in South Africa.

Japan has a similar frequency to the South African Black strike figures, whereas the rest of the countries mentioned have a strike frequency which is 2,5 to 40 times higher than the strike frequency for Blacks.

Regarding the rate of involvement in strikes (the number of strikers per 1 000 employees), only West Germany, Norway and Switzerland have lower rates of involvement than those found for the Black workers in South Africa. The rates of involvement in other countries range from 1,5 to 170 that of the Black rate of involvement in strikes.

TABLE 2: Strike Activity in 15 Industrialised Countries  
- 1979 (per 1 000 employees)

Country	No. of strikes per year	No. of strikers per year	No. of days lost per year
Australia	0,33	308	656
Belguim	0,06	15	164
Canada	0,10	45	756
Finland	0,80	106	114
W. Germany	-	3	19
Ireland	0,13	61	147
Italy	0,10	788	1 335
Israel	0,09	202	434
Japan	0,02	8	17
Netherlands	0,006	7	69
Norway	0,005	1	4
Sweden	0,05	8	7
Switzerland	0,003	0,16	0,79
United Kingdom	0,09	186	1 193
United States of America	0,05	18	366

Source: The strike figures as well as the employment figures were obtained from the "1980 Yearbook of Labour Statistics", International Labour Organisation, Geneva.

The picture is also similar for the relative volume of the strikes - i.e. the rate of days lost due to strikes per 1 000 employees. Only Norway and Switzerland were found to have volumes lower than that of Black strikes. The volume of strikes for the other countries ranges from 1,5 to 230 times the relative volume of Black strikes in South Africa.

For the whole period covered by this study (March 1976 to April 1981) there was a monthly average of 7 Black strikes in which 1 580 Black workers were involved and 3 460 work days were lost.

The monthly averages of the three strike activity dimensions for each year are given in Table 3.

TABLE 3: Monthly Averages of Black Strike Activity  
(1976 - 1981)

	Strikes per 1 000 employees per month	Strikers per 1 000 employees per month	Days lost per 1 000 employees per month
1976 (March-Dec)	,003	,40	,40
1977	,001	,25	,21
1978	,002	,26	,24
1979	,002	,37	,46
1980	,004	1,33	4,18
1981 (Jan-April)	,006	1,59	3,72

The data given in this table illustrate the significant increase in Black strike activity in 1980-81 ('post-Wiehahn period') as compared with that of 1976-79 ('pre-Wiehahn period'). This significant increase was observed in all three major measures of strike activity. Therefore the frequency of strikes per 1 000 Black workers per month has increased 2,5 fold from the first to the second period (0,002 to 0,005). Similarly, the rate of involvement and the volume of the Black strikes, which were on average 0,32 and 0,34 in the first period, increased to 1,46 and 3,95 in the second period - an increase of over fourfold and tenfold respectively.

In summarising this data it appears that even though the 1979 comparison with some industrialised countries indicates a relatively low Black strike activity in South Africa, there is also a clear indication of a rapid increase in strike activity over the last few years. Should this increase continue along its present course, a similar comparison with other countries in the future may lead to different conclusions.

## 2.2 The Dependent Variables

As mentioned previously, the three main dimensions of the strike activity constitute the dependent variables for all the models employed in this study. As the study was based on monthly observations of Black strike activity in recent years (March 1976 - April 1981)<sup>5</sup>, the dependent variables were based on the relative monthly figures for the strike activity. The three dependent variables were therefore:

- The monthly relative frequency of Black strikes (per 1 000 Black employees).
- The monthly relative involvement of Blacks in strikes (per 1 000 Black employees).
- The monthly relative volume of Black strikes (per 1 000 Black employees).

For the purpose of this study the analysis of the three dependent variables was based on the moving average figures and not on the actual averages for each month. The moving average was calculated as the average of the figures for the month under consideration and the figures for the two successive months. Thus, the moving average figures represent the delayed (lagged) reactions of the Black workers to changes in the situation (changes in the independent variables). In addition, by using the moving average it is possible, to a certain extent, to overcome the random changes which are expected in monthly observations. Thus, the moving average is believed to be a better representation of trends, as it is less affected by random occurrences than the actual monthly averages.

Previous research findings regarding the various aspects of strike activity in other countries revealed<sup>6</sup> that the relative frequency of the strikes represents the mere decision of the trade unions to strike. The relative involvement and the relative strike volume represent the outcome or the product of the previous decision to strike. This has been the main reason for using the three dependent variables rather than replacing them by one integrated dependent variable.<sup>7</sup>

### 2.3 The Models

Four models were included in the research: the economic model, the political model, the industrial relations model, and the integrated model. The independent variables for each model were chosen in accordance with the relevant approach. In order to have a control for the intervening variables, to evaluate the 'net' contribution of each variable, and to find the explanatory power of each set of independent variables, a multiple regression analysis was employed. The regression results were then assessed in the light of previous research findings. The adjusted  $R^2$  was used to determine the explained proportion of variation of our strike activity variables which were explained by independent

variables in each model. As the  $R^2$  is adjusted for the number of independent variables in the equation and the number of cases, it permits comparison of the proportion of the explained variance by the various Black strike activity models.

### 2.3.1 The Economic Model

Three independent variables were included in the economic model:

- AVSAL - The real average salary as measured by the monthly average Black salary, divided by the cost of living.
- CPI - Cost of living as measured by the monthly Consumer Price Index.
- PUNEMP - The proportion of Black unemployment, measured by the ratio of the monthly average of Black unemployment to the total economically active Black population.

The list of sources of the data used for the economic model is given in Appendix 2.

The three variables employed in the economic model explain only 30 percent of the variation of the number of Black strikes, 50 percent of the variation of the number of Blacks involved in the strikes, and 34 percent of the strike volumes (see Table 4).

It thus seems that the economic model may best explain the extent of Black involvement in strikes and less the decision to strike (expressed by the strike frequency) and the strike volume (expressed by the days lost due to Black strikes).

TABLE 4: The Economic Model  
(Beta Values)

	The period 1976-1981		
	Strikes per 1 000 employees per month	Strikers per 1 000 employees per month	Days lost per 1 000 employees per month
CPI	,33	,83***	,73***
AVSAL	,17	,12	Not in the equation
PUNEMP	-,13	,23	,15
ADJUSTED R <sup>2</sup>	30%***	50%***	34%***

\*\*\* significant at 0,005 level

\*\* significant at 0,05 level

\* significant at 0,10 level

It is also important to note that although all three equations are significant, most of the Beta values in the equations are insignificant. The only Beta values which are significant in this model suggest a high positive correlation between the cost of living index and both the involvement in the strikes and their volume, which are the 'outcome' variables. One cannot find in this model any significant indication of the effect of any particular economic variable on the strike frequency, i.e. the decision to strike. Thus, it can be concluded that the economic model does not seem to 'perform' very well as far as Black strike activity in South Africa is concerned.

### 2.3.2 The Political Model

Five independent variables were included in the political model:

LBLEG - Labour Legislation, coded according to the existing labour legislation that influenced Blacks in the observed months. The following labour legislation was considered:

(a) = Black Labour Relations Regulation Amendment Act 1973

(b) = Black Labour Regulations Amendment Act 1977

(c) = Industrial Conciliation Amendment Act 1979

(d) = Black Labour Act 1980.

The variable definition was based on the assumption that the impact of labour legislation which is relevant to Blacks accumulates over a period of time. Therefore the coding of LBLEG was done as follows:

LBLEG = 1 after legislation (a) was passed

LBLEG = 2 after legislation (a) and (b) were passed

LBLEG = 3 after legislation (a), (b) and (c) were passed

LBLEG = 4 after legislation (a), (b), (c) and (d) were passed.

RULPAR - The strength of the ruling party as measured by the number of its members in the House of Assembly in the observed month.

PMINS - The Prime Minister. The variable was defined as follows:

Botha's period = 1

Vorster's period = 2.



- ELEC - Election period. For this variable the election period was defined as the period starting 4 months before the election and included the election month and the 4 months afterwards (total nine months). The election period was coded 1. The non-election period was coded 2.
- CABSIZ - Cabinet size, as measured by the number of ministers in the cabinet.

The list of data sources used for the political model variables is given in Appendix 2.

Table 5 shows that the political model explains 49 percent of the strike frequency variance, 64 percent of the involvement in strike variance, and 31 percent of the strike volume variance.

Both the political and the economic models best explain the variance of Black involvement in strikes. However, the power of the political model is greater than that of the economic model in explaining the decision to strike (the strike frequency) and Black involvement in strikes. Whereas the economic model explains only 30 percent of the strike frequency variance, the political model explains almost 50 percent of it. Similarly, the political and economic models explain 64 percent and 50 percent respectively of the variance of Black involvement in strikes.

In addition, more independent variables were found significant in the political than in the economic model. Both cabinet size and labour legislation have high significant correlations with various aspects of strike activity. The election period also seems to be correlated to Black strike activity, but the statistical significance of this correlation is lower.

**TABLE 5: The Political Model**  
(Beta Values)

	The Period 1976-1981		
	Strikes per 1 000 employees per month	Strikers per 1 000 employees per month	Days lost per 1 000 employees per month
CABSIZ	,70***	,50***	,21
ELEC	,20*	,15*	,03
PMINS	-,13	-,02	-,11
RULPAR	-,06	-,10	-,03
LBLEG	,05	,48***	,39**
ADJUSTED R <sup>2</sup>	49%***	64%***	31%***

- \*\*\* significant at the level of 0,005  
 \*\* significant at the level of 0,05  
 \* significant at the level of 0,10

The high significant correlation between the size of the cabinet and both strike frequency and Black involvement in strikes is rather confusing. Previous research on strike activity in Israel<sup>8</sup> also indicated a correlation between cabinet size and Israeli strike activity. However, the correlation there had a negative sign, which confirmed the theory of pressure groups as discussed previously. The correlation here between cabinet size and strike activity is, however, positive and therefore cannot be explained along these lines. At present Black trade unions can hardly be considered as pressure groups as far as the South African government is concerned. Thus, the possibility of using the theory of pressure groups to interpret this correlation can be excluded. Another difference between the Israeli research

and the present one is that in Israel, during the research period, there had been many changes in the cabinet size, whereas in South Africa, there was only one minor change in cabinet size in 1980. All this leads to the thought that perhaps the change in cabinet size in South Africa reflects changes in some other variable, which may not even be a political variable, and cannot be specified at this stage.

The political model also suggests a significant correlation between the relevant labour legislation and some aspects of Black strike activity. Thus, according to this model, labour legislation does not influence the decision to strike (expressed by the strike frequency), but does influence the 'outcome' of these decisions in the form of the number of participants and the number of days lost due to strikes. It seems that the more labour legislation there is the more Black workers participating in strikes there are, and more days are lost due to these strikes. In other words, it is suggested that labour legislation during the observed period may have had a stimulating impact on the size of involvement in the strikes, and the strike volume.

The election period also has a significant influence on some aspects of the strike activity according to the political model. This model suggests that during the election period there are somewhat fewer strikes and fewer strikers involved in these strikes. This is hard to explain in the light of theoretical assumption and findings. It is difficult to assume that the Black unions try to assist the ruling party in its election campaign. It may of course be that during the election period the government is more rigid in its attitude toward strikes. However, it is also possible that during election periods another variable, forming part of one of the other models, could come into effect. It is thus possible that, to a certain extent, the election period merely reflects the impact of an unknown variable.

In conclusion, it can be said that the political model explains a higher proportion of the strike activity than the economic model. It therefore seems that one cannot ignore political variables and explain Black strike activity in South Africa solely from an economic point of view. On the other hand, it should be remembered that political and economic variables determine and interact with one another to some extent. This is also true for the industrial relations variables. Results of separate analysis of one set of variables, in this case the political set, can thus easily be a reflection of other intervening variables which reside under the economic or industrial relations categories. As an example, in recent years labour legislation has had a lot to do with works committees, liaison committees and Black trade unionism. All these variables fall under the industrial relations model. However, their impact might be reflected in the political model, in the inter-correlation between labour legislation and strike activity.

### 2.3.3 The Industrial Relations Model

Five independent variables were included in the industrial relations model:

- NTRUM - The number of Black trade unions.
- UNIMEM - The strength of the Black trade unions as measured by the ratio of union members to the economically active Black population.
- NCOM - The number of works and liaison committees.
- NBWDDET - The number of Blacks regulated by wage determinations.
- INCAG - The number of Blacks covered by industrial councils agreements.

The list of data sources used for the political model variables is given in Appendix 2.

As can be seen from Table 6, the industrial relations model explains 49 percent of the strike frequency variance, 46 percent of the involvement in strike variance and 32 percent of the strike volume variance. Even though such explanatory power is not too high, it still indicates the need to use industrial relations variables in order to explain strike activity.

TABLE 6: The Industrial Relations Model

	The Period 1976-1981		
	Strikes per 1 000 employees	Strikers per 1 000 employees	Days lost per 1 000 employees
NTRUN	-,30	,16	,13
UNIMEM	,76**	,23	,21
NCOM	,86****	,76**	,60**
NBWDDET	-,59**	-,29	-,19
INCAG	,27**	,29**	,22
ADJUSTED R <sup>2</sup>	49%****	46%****	32%****

\*\*\* significant at the level of 0,005

\*\* significant at the level of 0,05

\* significant at the level of 0,10

It has been assumed that the number of Black trade unions, which has been growing rapidly in the last few years (mainly due to the changes in the status of the Black unions, introduced by the Industrial Conciliation Amendment Act) would have a significant influence on Black strike activity. It is therefore interesting to note that of all chosen variables in this model, only the number of Black trade unions (NTRUN) does not have any significant correlation with Black strike activity.

On the other hand, the strength of the Black trade unions, as expressed by the proportion of Black union members in the economically active population, has a significant positive correlation with strike frequency (the decision to strike).

It has been assumed that if plant level committees were established, (either works or liaison committees), better communication between managements and Black labour would result and thus industrial peace would be enhanced. Bearing this assumption in mind, the positive correlation between the number of plant level committees (NCOM) and all three aspects of strike activity is rather interesting. Unless the number of committees reflects some other variables included in another model, the findings indicate higher strike frequency, higher involvement in strikes and bigger strike volume owing to the increased number of committees.

It was also found that the number of Blacks subjected to wage determination (NBWDET) is negatively correlated with strike activity. This contrasts with the positive correlation of the number of Blacks influenced by industrial councils agreement (INCAG), which is correlated positively with Black strike activity. This may be due to the difference between the nature of the organised sector, in which industrial council agreements are the main organs, and that of the unorganised sector, in which the wage determinations are the main organs. This point will be elaborated on later.

Several codes of conduct were introduced at different times in different organisations during the study period. Within the limits of this study, it was impossible to detect the process and the extent of the application of the codes. Therefore, even though the codes of conduct may have influenced the pattern of Black strike activity, they were not included in the study.

#### 2.3.4 The Integrative Model

In order to establish the integrative model all the variables which were included in the three previous models (the economic, the political, and the industrial relations variables) were included in the preliminary stage of the regression of this model. At a preliminary stage the performance of each of these variables was assessed within an integrative framework. The variables, which explained a negligible proportion of the variance of the various aspects of strike activity, or which were found to be highly correlated with other variables included in the model, were omitted. The variables which were finally included in the integrative model were those which proved to be most important in the preliminary stage. These variables and their beta values in the regression equations for the various aspects of strike activity are given in Table 7.

The integrative model, as expected, has the highest explanatory power of Black strike activity. It explains 69 percent of the variation of the strike frequency, 67 percent of the involvement in strikes and 42 percent of Black strike volume.

The integrative model consists of six independent variables: two economic variables, one political variable and three industrial variables.

##### 2.3.4.1 The Economic Variables

The two economic variables included in the integrative model are the real average Black wage and salary (AVSAL) and the proportion of Black unemployment (PUNEMP). These two variables were not significant in the 'pure' economic model, but when they are employed in a wider context their impact on the various aspects of strike activity becomes significant.

TABLE 7: The Integrative Model

	The Period 1976-1981		
	Strikes per 1 000 employees	Strikers per 1 000 employees	Days lost per 1 000 employees
AVSAL	,19**	,13	,04
PUMEMP	-,59***	-,30**	-,43**
LBLEG	Not in the equation	,52**	,10
UNIMEM	,40***	,22**	,22*
INCAG	,27**	,17	,30*
NBWDDET	-,27**	-,23	,08
ADJUSTED R <sup>2</sup>	69%***	67%***	42%***
(R <sup>2</sup> )	(72%)	(70%)	(48%)
DURBIN-WATSON TEST	1,069	1,257	1,036

\*\*\* significant at the level of 0,005

\*\* significant at the level of 0,05

\* significant at the level of 0,10

The real average wage and salary affects only the strike frequency, and the positive direction of its influence is quite interesting. It seems that the higher the wages or salaries earned by Black workers, the higher the frequency of Black strikes, or the greater their tendency to decide to strike. One possible explanation of this finding is that the Black workers become more aware of their economic power in periods of prosperity when their wages and salaries are relatively high. In other words, the relative prosperity which South Africa has been experiencing in the last few years has contributed towards the rise in salaries and the inclination to strike.



Another possible explanation is that relatively high wages and salaries may be the outcome of previous strikes, thereby underlining the implication of the growing power of the Black workers. Based on previous success they are tempted to use their power again.

The proportion of Black unemployment is negatively correlated with all three aspects of Black strike activity. The greater the unemployment among the economically active Black population, the fewer strikes, strikers and days lost due to strikes. This was expected as previous research findings indicated relatively low strike activity during high unemployment periods. During such periods the militancy of the workers decreases and employers are less vulnerable. However, some further assessment of the correlation between unemployment and strike frequency at various levels of trade union membership (collective strength) indicated that only when the trade unions are strong (high proportion of membership) is the negative correlation between unemployment and strike frequency strong and highly significant (Table 8). The weaker the unions, the weaker the correlation between unemployment and the decision to strike. In other words, the trade unions serve as catalysts and regulators of the negative relationship of unemployment - strike frequency. When the unions are strong they encourage strikes during periods of prosperity and prevent them during periods of unemployment. When the unions are weak they cannot control strike activity, and then the workers' tendency to strike seems to increase as unemployment increases.

#### 2.3.4.2 The Political Variables

The only political variable included in the integrative model is labour legislation (LBLEG). Labour legislation does not have any impact on the frequency of strikes (the decision to strike)

TABLE 8: Unemployment and Strike Frequency Under Low and High Union Membership (Beta Values).

	Strike Frequency	
	low union membership	high union membership
Unemployment	,313*	-,776***

\*\* significant at ,05

\* significant at ,10

or the volume of Black strikes. However, it does influence the extent of involvement in strikes.

The relevant labour legislation in effect during the study period deals mainly with the organisation of Black workers at the place of work (within the works and liaison committees) or at the industrial or national level within trade unions. It appears that the effect of such a development in organising the Blacks, both at the plant and national level, is reflected in the ability to organise strikes on a larger scale, involving greater numbers of strikers in each strike. The number of Black workers involved in strike activity therefore increases as more labour legislation becomes operational.

It is interesting to note that the political model, which performed relatively well as a 'pure' model, does not contribute much to the explanatory power of the integrative model. This finding probably points to the gap which currently exists between the political system and the Black workers in South Africa. At present only labour legislation directly affects the strike activity of Blacks. It is also evident that the political variables, isolated in a separate model, reflect, to a great extent, the impact of the economic and industrial relations variables.

#### 2.3.4.3 The Industrial Relations Variables

The three industrial relations variables included in the integrative model are the strength of the unions (UNIMEM), the number of Blacks influenced by Industrial Council Agreements (INCAG) and the number of Blacks regulated by wage determination (NBWBET).

Union strength has a great and significant influence on all three aspects of strike activity. This is not surprising as previous research has already indicated that union membership - as an indication of the power of collective labour action - is a very important predictor of all aspects of strike activity. Union membership affects mainly the decision to strike (strike frequency). Generally speaking, the stronger the unions the more decisions to strike are taken. However, bearing in mind our previous findings in the correlation analysis (Table 8), it should be noted that in certain situations, such as high unemployment, strong Black unions act to decrease strike frequency and the frequency of decisions to strike.

The number of Black workers influenced by Industrial Council Agreements was found to be positively correlated with strike frequency. In other words, the more Black workers influenced by these agreements, the more strikes take place. The Industrial Council Agreements are typical of the 'organised sector' and should be analysed with a view to the conditions prevailing in this sector. Although many Black workers within the organised sector are not as yet organised into trade unions, the proportion of organised Black workers is higher in this sector than in the 'unorganised sector'. It most likely is the higher proportion of Blacks organised which increases the tendency of the workers to strike.

The number of Blacks regulated by wage determination was found, however, negatively correlated with the decision to strike. The more Blacks regulated by wage determination, the fewer strikes occur. One possibility to explain this finding is that wage determination applies mainly to the 'unorganised sector'. In this sector there are relatively less unions and their activity is rather uninstitutionalised. Strike decisions therefore rarely occur and the greater the number of Blacks subjected to wage determination, the greater the reduction in their tendency to strike.

As our data consisted of monthly observations for a period of about five years, it has been important to examine if any time correlated effects were incorporated into the analysis. The Durbin-Watson Test<sup>9</sup> of regression residuals was applied to test whether, in addition to the effects on the Black strike activity identified by the multiple regression analysis, there also is strike activity increase with time. The residual test result shows a significant increase in time (at the 0,01 level) in all strike activity measures for the research period. In other words, in addition to the economic, political and labour relations variables that affect Black strike activity, there are other time dependent variables that affect it as well.

Time related influences on the strike activity which are extraneous to the study might have inflated the relationship between the independent variables and the strike activity measures, and the data had to be adjusted to eliminate the time effect. This was done by employing a simple linear regression for each of the variables, with time as the independent variable, assuming linear relationships with time. The resulting residuals were then used in the multiple regression equation instead of the original variables. The resulting multiple regression equations, compared to our original ones are shown in Table 9. It was found that despite the elimination of the time effect, most variables performed in the same way they did in the original analysis.

The only changes related to the effects of unemployment and the number of Blacks regulated by wage determinations. Due to the elimination of the time impact, unemployment influences only the strike frequency significantly, and not all three strike measures as it did originally. The number of Blacks regulated by wage determinations also does not have a significant influence on the strike frequency as it did in the initial analysis. It could therefore be concluded that extraneous time dependent variables do affect the Black strike activity, although they do not, in most cases, change the original results.

TABLE 9: The Integrative Model, a Comparison Between the Original Results and 'Time Eliminated' Results

	Strikes		Strikers		Days lost	
	Time Eliminated	Original	Time Eliminated	Original	Time Eliminated	Original
AVSAL	,19**	,19**	,14	,13	,04	,04
PUMEMP	-,41**	-,59***	-,26	-,30**	-,23	-,43**
LBLEG	-,02	Not in equation	,32**	,52**	,06	,10
UNIMEM	,44***	,40***	,28**	,22**	,25*	,22*
INCAG	,34**	,27**	,25	,17	,34*	,30*
NBWBET	-,008	-,27**	-,11	-,23	,05	,08

\*\*\* significant at the level of 0,005

\*\* significant at the level of 0,05

\* significant at the level of 0,10

## 2.4 The Explanatory Power of the Models

A comparison of the explanatory power of all four models is given in Table 10.

TABLE 10: Proportion of Variance Explained by Different Models (Adjusted R<sup>2</sup>)\*

	The Period 1976-1981		
	Strikes per 1 000 employees	Strikers per 1 000 employees	Days lost per 1 000 employees
The Economic Model	30%	50%	34%
The Political Model	49%	64%	31%
The Industrial Relations Model	49%	46%	32%
The Integrative Model	69%	67%	42%

\* All adjusted R<sup>2</sup> values are significant at the ,005 level.

Of the three 'pure' models (the economic, the political and the industrial relations models) the economic model has the lowest explanatory power (38 percent on average), the industrial relations model has a higher explanatory power (42 percent on the average), and the political model performs even better by explaining 48 percent of the variance on average. However, the integrative model performs the best. Its explanatory power is much higher than any one of the individual 'pure' models, and

amounts to 59 percent on average.\* This result was expected as strike activity is a function of many factors from several fields, and cannot therefore be well explained in terms of only one field. Moreover, political, economic, and industrial relations variables interact on one another. The variables found to be significant in a 'pure' model may therefore not be the variables that directly influence strike activity, but a reflection of variables not included in the 'pure' model as they represent other fields. It follows that in the integrated model only those variables that have a significant and more direct impact on strike activity could be included. The rest of the variables included in the three 'pure' models, which were apparently only reflections of other variables, were dropped. Hence, whereas thirteen variables were included in the 'pure' models (3 - economic, 5 - political, and 5 - labour relations) the integrated model consists only of 5 independent variables. The integrated model, however, achieves the highest explanatory power of Black strike activity.

### 3. CONCLUSIONS

The growing militancy of Black workers in South Africa in the last few years channelled through the trade unions, is one sign of the normalisation which has just started to take place in the South African industrial relations. The negligible occurrences of Black strike activity during the previous decades, considering that Blacks composed most of the South African work force, could not be an indication of a normal situation. For some South Africans the present situation appears to reflect an enormous outburst of Black militancy. However, a comparison of data

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\* It should be noted that the average calculations do not mean that all the three strike indices were related as analytically equivalent. The average calculations have been used only as an indication of the relative explanatory power.

(per 1 000 employees) for Black strike activity, with strike activity in 15 industrialised countries reveals that Black strike activity in South Africa is very low. In fact, it is similar only to countries reputed for their low strike activity, such as West Germany, Sweden and Japan.

According to the findings in this study, the most visible reason for the increase in Black strike activity is the growth of the Black collective power awareness as reflected mainly in the increased number of Black trade union's members. It should be emphasised that according to these findings it is not the mere existence of many Black unions which explains the pattern of the Black strike activity, but also their new sense of power.

The findings also indicate that strong Black trade unions do act in an expected and rational way. In fact, they act very similarly to the way strong trade unions in the West act. The stronger they are, the more control they have over strike activity. This is indicated by their tendency to prevent strike activity during high unemployment periods and to encourage such activity during periods of prosperity. It should also be borne in mind that strong Black trade unions, with full legal rights, are a relatively new phenomenon in the South African scene. New unions are confronted with a number of different problems compared to well-established and institutionalised unions. They have to attract new members as well as compete for them with other interested unions. They have to establish their future relationship with managements and retain the support of their existing members. As a result new unions tend to be more militant than the established ones, especially when they are confronted with situations which they have never faced before. Another related problem is the inexperience of the new unions in functions and procedures relating to collective bargaining and conflict resolution. Even though the problem of inexperience was not investigated specifically



in this study, it is reasonable to assume that at least part of the recent labour-management disputes is due to the absence of appropriate negotiation skills and procedures. The suspicious attitude of the Black trade unions towards the old, established procedures may have added to the increased occurrences of disputes.

Formal demands for increased wages and salaries constitute a high percentage of the official reasons for Black strike activity. The findings suggest, however, that increased wages and salaries are not likely to change the pattern of increasing strikes. It might even have an opposite effect. The main reason for this pattern of strike increases is the new power consciousness of organised trade unions and not the formal claim for increased wages and salaries.

The fact that out of five political variables employed in this study only one, viz. labour legislation, had some limited impact on the pattern of Black strike activity indicates that a gap still exists in South Africa between the White political arena and the Black industrial relations arena. The prevention of the access of strong pressure groups to the political arena, such as the Black trade unions, may result in increased strike activity or other demonstration of power. Pressure groups tend to turn to overt demonstration of power when they cannot exercise their power within the institutionalised political framework. Thus it can be expected that the prevention of Black trade unions to participate within the political framework can result in the exertion of pressure by showing their power in the form of strikes and other activities.

Even though a multivariate quantitative analysis is essential in order to gain better insight into the pattern and the development of the Black strike activity, one also should be aware of the

limitations of such an analysis. Some variables which might have had an implication on the interpretation of the pattern of the Black strike activity in South Africa could not be quantified and were therefore excluded from the analysis. Thus the impact of important variables such as the Recognition Agreements, the Codes of Conducts, plant level problems and the banning of Black union's leaders at certain periods, could not be included in the analysis and could be only reflected in the study by the impact of time. There is also the problem of unidentified variables which occasionally could affect some variables included in the analysis. Therefore, a combination of a multivariate analysis with case study analyses would probably give a much better picture of the situation. Unfortunately, this was beyond the scope of the present study and should be borne in mind with regard to future research in this field. It is also important to note that since such rapid changes are taking place in the South African industrial relations system, especially with regard to the Black labour force, it would be of utmost importance to repeat the analysis periodically in order to monitor developments and their possible future implications for South Africa.

FOOTNOTES

1. For examples of the economic approach, see:

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## Footnotes:

## 2. For examples of the political approach, see:

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- AM Ross and Paul T Hartman, Changing Patterns of Industrial Conflict (New York: John Wiley, 1960).
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- DA Hibbs, Jr, "On the Political Economy of Long-Run Trends in Strike Activity." British Journal of Political Sciences, Vol. 8, (1978), pp. 153-175.
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- D Snyder, "Institutional Setting and Industrial Conflict: Comparative Analysis of France, Italy and the United States." American Sociological Review, Vol. 40, (1975), pp. 259-278, and "Early North American Strikes: A Reinterpretation." Industrial and Labor Relations Review, Vol. 30, (1977), pp. 325-341.

3. For the discussion of the impact of union and union strength on strike activity, see:
 

E Shorter, C Tilly, Strikes in France 1830-1968. Cambridge University Press, 1974. Also D Snyder - op.cit.
4. For some examples of a more integrative approach, see:
 

DA Hibbs, "Industrial Conflict in advanced industrial societies." The American Political Science Review, Vol. 70, (1976), pp. 1033-1057.

A Galin, "Political and Economical Determinants of Industrial Conflict - The Case of Israel and Possible Implications to South Africa." South African Journal of Labour Relations, Sept, 1981.

DWF Bendix, "Future Implications of Labour Relations in their Political Context." In E Dostal (ed.) Labour Relations, Training and Productivity, University of Stellenbosch, October 1980, pp. 17-25.
5. The Source of the Data - The Department of Manpower Utilisation. See Appendix 1.
6. GW Skeels. Op.cit. (1971).
 

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A Galin, "Political and Economic Determinants of Industrial Conflict." South African Journal of Labour Relations, Vol. 5, 1981, pp. 5-9.
7. DA Hibbs. Op.cit. (1978).
8. A Galin. Op.cit. (1981).
9. MS Younger, "Handbook for Linear Regression." California, Duxbury Press, 1979.

## APPENDIX I

Year	Month	No. of strikers	No. of strikers	No. of hours lost	
76	3	13	3091	27495	
	4	2	55	177	
	5	8	588	3476	
	6	7	725	2343	
	7	10	1120	8533	
	8	10	1835	13027	
	9	6	579	646	
	10	11	1283	6616	
	11	13	1074	16699	
	12	4	164	4048	
	77	1	7	1067	7412
		2	10	836	4491
3		5	264	1333	
4		2	40	162	
5		3	499	3317	
6		2	39	454	
7		1	4	28	
8		3	3043	23182	
9		4	1537	9582	
10		1	22	198	
11		2	182	1119	
12		1	200	800	
78	1	3	168	731	
	2	2	38	53	
	3	1	60	0	
	4	6	732	2912	
	5	7	2643	28199	
	6	1	10	20	
	7	3	129	624	
	8	5	1846	10692	
	9	4	196	385	
	10	6	773	4702	
	11	5	704	4023	
	12	6	788	7370	

Year	Month	No. of strikers	No. of strikers	No. of hours lost
79	1	5	395	2373
	2	4	1889	31562
	3	8	830	6895
	4	4	819	6645
	5	4	807	5396
	6	4	699	2337
	7	8	2521	9422
	8	2	481	8433
	9	3	499	2736
	10	2	535	5520
	11	2	1734	29129
	12	5	343	5382
80	1	1	248	434
	2	6	1685	18739
	3	4	145	961
	4	4	706	13419
	5	10	534	3031
	6	35	11452	604115
	7	13	2249	54415
	8	11	2777	31526
	9	6	5700	75668
	10	9	1115	7061
	11	13	6194	97409
	12	22	10096	173287
81	1	14	2525	37923
	2	15	2287	15805
	3	11	1223	13463
	4	27	11311	260538

APPENDIX IIData Sources

1. Consumer Price Index - Department of statistics. Weighted Average of twelve urban areas, for all items included in the calculation of the CPI. 1975 = 100
2. Black Economically Active Population - Department of statistics based on the monthly current population survey conducted by the Department. The data for 1976 and part of 1977 are based on comparison of several estimations for the period.
3. Black Salaries and Wages - Department of statistics. The average salary for Blacks in Rands per month.
4. Black Unemployment - Department of statistics based on the current population survey. The figures for 1976 and part of 1977 are based on comparison of several estimations.
5. Blacks Employed - Department of statistics.
6. Number of the National Party Members in the House of Assembly - HANSARD (House of Assembly Debates) 1976 - 1981.
7. Number of Ministers in the Cabinet - Hansard House of Assembly Debates) 1976 - 1981.



8. Number of Black Trade Unions and the Number of Members in the Black Trade Unions - Due to the enormous difficulty to find the data we have had to use several resources :
  - For 1976 - 77 - The Institute of Labour Relations - University of South Africa, Unpublished Data.
  - For 1978 - 80 - Official Rand Union Directories.
  - 1981 (to April) - Estimations by A. Lombard - Volk April 1981 pp. 26 - 29.
  
9. Number of Industrial Agreements - Annual Reports - The Department of Manpower Utilisation.
  
10. Number of Committees (Works and Liaison) - The Department of Manpower Utilisation.
  
11. Number of Blacks in Industries and Trades regulated by Wage Determination - Annual Reports - The Department of Manpower Utilisation.

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