Approaches to the Study of Ethnicity.
Robert H. Bates
INTRODUCTION

This paper has two objectives. The first is to isolate several of the dominant approaches to the study of ethnic behavior in Africa. The second is to test these approaches against data obtained from the Nkana townships in Zambia.

We must register several caveats. The data were drawn from a sample of the residents of a mine township. As a result, it is only with great caution that our findings can be generalized to other urban settings. Secondly, there is the definitional problem of the term 'ethnicity'. In this paper, I have adopted a 'natural' definition; when focusing on the Bemba, for example, I group together persons who have come to identify themselves as Bemba on the copperbelt. Ushi, Kazembe Lunda, Bisa, Ngumbo, etc., are thus counted as Bemba, for they regard themselves and are regarded by others as...
Bemba in much of the day-to-day life of the Nkana townships. There are two problems with this procedure. Adopting this method means begging many of the fundamental questions in the study of ethnicity. Nonetheless, we feel that enough significant problems remain to warrant proceeding with the analysis. Secondly, while there does appear to be a common distinctive attribute in this grouping—that of language—we nonetheless classify together people who differ in many respects. The heterogeneity of the ethnic groups means that there is liable to be a large element of measurement error. We give one last warning: the terms ‘ethnic group’ and ‘tribe’ are used interchangeably. While we would prefer to reserve the term ‘tribe’ to refer to groups with distinctive structural properties, we adopt the convention for purposes of style.

With these caveats in mind, we turn to our analysis. Throughout the paper, rates of membership in the Mineworkers' Union serve as our dependent variable and ethnic background functions as the independent variable. In the first section of the paper, we test two competing hypotheses about the effects of ethnicity and we do so by asking: does ethnic background make a significant difference in rates of union membership? In the second section of the paper, we broaden our analysis to include a series of intervening variables; we explore the way in which such factors as income and length of urban residence produce different rates of membership by different ethnic groups. In so doing, we isolate, formalize, and test three different interpretations of ethnic behavior—what we term the 'sociological', 'class', and 'machine' models.

I. — Popular Wisdom versus the Mitchell-Epstein Hypothesis

It is popularly believed in Zambia that tribal membership affects social and political participation. Thus, at Nkana, it was sometimes stated that the Union was 'Bemba dominated' and governed by a 'Bemba serving clique'. A political crisis in 1967, in which national political leaders of Bemba extraction clashed with leaders from other tribes, heightened the saliency of tribal membership and the credence given these assertions. From the point of view of theories of ethnicity, these accusations were significant. They amounted to public assertions of one of the basic tenets of scholarly analysis in Africa—that

1. This is in keeping with the concept of supertribalism. See Immanuel Wallerstein, "Ethnicity and National Integration", CEA, I-3, 1960, pp. 129-139.

tribal membership pervasively structures social and political activity. Applied to the data, this position predicts significant differences in the rate of union membership between the members of different tribes.

Countering this view are the theories of Epstein and Mitchell. Both writers contend that tribal membership affects a restricted domain of social behavior in urban Africa. Ethnic background, they state, structures the social field of inter-African relations and leads to differing patterns of friendship, joking relations, marriage, hospitality, etc. However, they contend, in the field of relations between whites and blacks—such as labor relations—ethnic factors play no part; rather, they are overridden by the factors of class and race. Applied to the data on union membership, this position predicts that there would be no significant difference in the rates of membership of different tribal groupings.

In the light of the accusations, I grouped my respondents into two categories: Bemba and non-Bemba. Should tribal background make a difference in the rates of union membership, then the relationship should be most sensitive to this categorization. However, as shown in Table 1, there is no significant difference between the two groupings.

Table 1. — Union Membership by Tribal Background*

<table>
<thead>
<tr>
<th></th>
<th>Bemba</th>
<th>Non-Bemba</th>
</tr>
</thead>
<tbody>
<tr>
<td>Union members</td>
<td>598 (57.2%)</td>
<td>336 (55.3%)</td>
</tr>
<tr>
<td>Non-members</td>
<td>447 (42.8%)</td>
<td>272 (44.7%)</td>
</tr>
<tr>
<td>Total</td>
<td>1045</td>
<td>608</td>
</tr>
</tbody>
</table>

* In this and the following tables, only Zambian residents are included in the analysis. Union membership is indicated by subscription to the check-off.

To validate this finding, income and marital status were controlled. I also controlled age and length of service on the mines. I held constant the proportion of life spent on the mines and occupational status. In only one instance did the tribe make a difference. As shown in Table 2, poor Bemba more frequently join the Union than do low paid workers from other tribes.

Table 2. — Union Membership by Tribe, under Low Income

<table>
<thead>
<tr>
<th></th>
<th>Bemba</th>
<th>Non-Bemba</th>
</tr>
</thead>
<tbody>
<tr>
<td>Union members</td>
<td>287 (49.5%)</td>
<td>99 (38.2%)</td>
</tr>
<tr>
<td>Non-members</td>
<td>293 (50.5%)</td>
<td>160 (61.8%)</td>
</tr>
<tr>
<td>Total</td>
<td>580</td>
<td>259</td>
</tr>
</tbody>
</table>

$\chi^2 = 8.69$
Significance = .0032
Phi = .102

To further validate my findings, I grouped the respondents by province of origin. In Zambia, as elsewhere in Africa, region of origin correlates highly with tribal membership; and in studies of urban areas, region of origin is found to supplant tribal membership as a criterion for the formation of ethnic groups. Once again, however, there was no difference between the rates of membership of the different groups, even when other factors were controlled.

Given the general failure of ethnic background to correlate with union membership, despite the introduction of controls, I accepted the Mitchell-Epstein thesis and rejected the conventional wisdom of scholars and mine-workers alike.

II. Re-Evaluation of the Ethnic Factor

Curiosity led to the use of a multivariate procedure. Among the more attractive of these procedures was that of James S. Coleman. Coleman’s technique allows the analyst to relate several variables simultaneously and also to assess the relative, independent effects of each.1

Once again, union membership serves as the dependent variable. As independent variables, I selected the three factors which, under cross-tabulation procedures, associated most strongly with union membership: marital status, income, and length of service. I also selected tribe. Tables 3 through 5 present the bivariate relationships for the first three variables; Table 1 depicts the relationship between tribe and union membership.

Table 3. — Marital Status and Union Membership

<table>
<thead>
<tr>
<th></th>
<th>Married</th>
<th>Not married</th>
</tr>
</thead>
<tbody>
<tr>
<td>Union members</td>
<td>839 (64.9%)</td>
<td>95 (26.4%)</td>
</tr>
<tr>
<td>Non-members</td>
<td>454 (35.1%)</td>
<td>265 (73.6%)</td>
</tr>
<tr>
<td>Total</td>
<td>1293</td>
<td>360</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 168.00 \]
Significance = .0000
Phi = .32

Table 4. — Income and Union Membership

<table>
<thead>
<tr>
<th></th>
<th>High income</th>
<th>Low income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Union members</td>
<td>385 (45.9%)</td>
<td>526 (66.9%)</td>
</tr>
<tr>
<td>Non-members</td>
<td>453 (54.1%)</td>
<td>260 (33.1%)</td>
</tr>
<tr>
<td>Total</td>
<td>838</td>
<td>786</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 71.6 \]
Significance = .0000
Phi = .21

Table 5. — Length of Service and Union Membership

<table>
<thead>
<tr>
<th></th>
<th>Low length of service</th>
<th>High length of service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Union members</td>
<td>330 (38.5%)</td>
<td>603 (74.4%)</td>
</tr>
<tr>
<td>Non-members</td>
<td>527 (61.5%)</td>
<td>208 (25.6%)</td>
</tr>
<tr>
<td>Total</td>
<td>857</td>
<td>811</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 216.00 \]
Significance = .0000
Phi = .11

Table 6 presents the breakdown of my sample of Union members according to the four independent variables. For convenience, ‘LoL’ and ‘HiL’ are used to stand for low and high length of service; ‘LoY’ and ‘HiY’ to stand for low and high income; and ‘Mar’ and ‘Nmar’ to stand for married and not married respectively.
Following Coleman’s procedure, we can calculate the estimated effect (a) of each of the independent variables upon the rates of union membership.  

\[
\begin{align*}
\text{length of service} &= .103 \\
\text{marital status} &= .345 \\
\text{income} &= .190 \\
\text{tribal membership} &= .130
\end{align*}
\]

The surprising result of this analysis is its revelation of the effect of tribal membership. The estimated effect of tribe exceeds in strength one of the most powerful correlates revealed through bivariate procedures. Moreover, while bivariate procedures showed tribal membership as associating with union membership with a phi of only .024, the multivariate procedure reveals that ethnic background has a comparatively high level of association with the dependent variable. Lastly, while cross-tabulation suggests that the association between ethnic background and tribal membership is insignificant, under Coleman’s procedure, the association is significant at a level of .06. We are therefore compelled to relinquish our strong endorsement of the Mitchell-Epstein hypothesis and to undertake further analysis.

1. The principal assumption that must be made in applying Coleman’s statistical model is that the current rate of union membership for each category represents an equilibrium state in a process of transition between membership and non-membership—a transition which is taking place at a constant rate over time. Under this assumption, we can apply Coleman’s powerful time-based model to cross-sectional data. I see no reason why the basic assumption is not fulfilled in my data.

2. Standardizing each estimate for the variance, we can calculate the significance level of each; all, save length of service, are significant at the .10 level, and marital status and income are significant at the .01 level. The estimated random error toward membership is .054; and the estimated random error away from membership is .179. The four variables thus ‘explain’ over 75% of the variance in union membership.
III. — New Directions for Analysis

The contrast in the findings produced by the cross-tabulation and multivariate procedures does not lead back to a straight 'tribalism' interpretation. The results of the bivariate analysis still stand: tribe, in itself, does not make a significant difference. Rather it is tribal membership, in conjunction with other variables, which is important. The problem, therefore, is to trace the interrelationship of tribal background with other factors. Three major models of these relationships stand out in the literature. Crudely labeled, they are the 'sociological,' 'class,' and 'machine' models.1 None of our representations of these models will do justice to the literature from which they are derived. The sociologists, scholarly Marxists, and political scientists who suggest the interpretations are free to disown the use I make of them. Nonetheless, the labels do emphasize the predominant variables through which tribe is held to exercise its effect on social life, and I will seek to apply each of the models to my data. The models make use of four variables: tribe, length of service on the mines, income, and union membership.

In evaluating the three models, we shall apply a three-variable form of path analysis. The technique has the advantage of clearly emphasizing the role of intervening variables and of testing the manner in which they mediate the relationship between other variables of concern. In all cases, the variables are dichotomized. In the case of income and length of service, the dichotomy falls at the midpoint of the distribution. Applying Boudon's analysis, we use phi as an equivalent of the correlation coefficient and Coleman's a, standardized by the variance, as an equivalent of the path coefficient.2 We assume uni-directional causality.

1. There is a third major approach: the study of ethnic groups as cultural and political communities. Because this approach requires data about attitudes and group identifications, I could not apply it to my data. The approach is particularly useful when one is concerned with dynamics; it can then be wed to the hypothesis of situational selection. Examples of this approach would be: Brian Weinstein, Gabon: Nation-Building on the Ogooué, Cambridge, Mass., 1966; Charles W. Anderson, Fred R. Von Der Mehden, and Crawford Young, Issues of Political Development, Englewood Cliffs, N.J., 1967; and Michael Banton, "Social Alignment and Identity in a West African City", in Hilda Kuper, ed., Urbanization and Migration in West Africa, Berkeley and Los Angeles, 1965, pp. 131-147.

2. See Raymond Boudon, "A New Look at Correlational Analysis", in Hubert M. Blalock, Jr., and Ann B. Blalock, eds., Methodology in Social Research, New York, 1968, pp. 219-220. The reason for dichotomizing is to achieve these equivalents. While a full regression analysis, using dummy variables, would be preferred, missing data problems and other difficulties
1. Sociological Model.

The first model derives from sociological analyses of African urban societies. Tribe, it assumes, acquires significance primarily through the intervening variable of urban stability. In this analysis, we use length of service on the mines as an analogue of length of urban residence, one of the basic measures of urban stability.¹

Sociologists frequently find that length of residence in an urban area correlates with rates of social and political participation.² And social anthropologists have long known that various tribal groups migrate to urban areas at differing rates. The distance between the rural homeland and town; the ability of the rural social and economic structures to withstand the absence of productive manpower; the relative wealth of rural and urban areas; the system of land tenure in the rural areas; and the number of intervening economic opportunities between the rural area and the city—these are some of the factors used to explain disparate levels of migration to the urban areas by various tribes and to analyze how tribes differ in their propensity for stabilizing as urban dwellers.³

That tribal membership and length of residence combine to produce differential rates of social and political participation is most clearly revealed in the literature from West Africa. Political conflicts between ‘strangers’ and ‘sons of the soil’, and social and economic competition between these groups pervasively structure the pattern of West African urban society. Immigrant ethnic groups frequently frustrated all such attempts. Besides, an application of Boudon’s derivations grows more naturally from the bivariate and multivariate techniques used in the first parts of the paper.


form associations to assert their interests against dominant settler tribes; in response, the core groups elaborate organizational defenses to protect their own positions.\(^1\) In this way, the variable of tribe, through the intervening variable of length of residence, structures the pattern of organizational participation.

In Zambia, insofar as there is a core group in the mine townships, it is formed by the Bemba speakers. Relatively proximate to the copperbelt, possessing a poor rural economy which renders migration attractive,\(^2\) and having few intervening economic opportunities between their homelands and the mine towns, the Bemba evidence a high rate of urban migration and a strong penchant for becoming urban residents. As Rotberg notes, in the 1920's and 1930's, the Bemba were already rivaling the Nyasa as a major group in the copper mining labor force; by the 1950's, Chibemba had become the lingua franca of the copperbelt; and by the 1960's, the Bemba dominated the trade union and party structures in the mining areas.\(^3\) The relationship between tribe, urban stabilization, and participation should thus obtain on the copperbelt as well as in West Africa.


3. See Rotberg, pp. 30-31. It is interesting to note that police records reveal the early prominence of the Bemba and their high rate of participation in strikes and riots in the mine townships. Thus, of the 56 persons arrested at Luanshya during the strike of 1935, 33 were Bemba speakers, 27 were non-Bemba, and 3 were of unknown origin (Secretariat, Sec/Lab 67, Vol. I). Of the 62 miners killed or wounded by the colonial armed forces during the riots at Rhokana in 1940, 38 were Bemba, 17 non-Bemba, and 7 of unknown origin. The latter figures are fair indicators of the composition of the most militant portion of the strikers; rifle fire was directed purposely to avoid shooting observers and non-participants, and the riot leaders were to the fore of the crowd. As the captain in charge of the military detail testified: "I reiterated the command that aim was to be low as [...]. I wished to minimize the casualties among [...]. innocent occupants of the kraal" (Report by Captain Francis Jones, 2nd Batallion, Northern Rhodesian Regiment, p. 8; Secretariat, Sec/ Lab 78, Vol. II. Figures from Vols. III and IV). Unfortunately, I lack statistics on the composition of the labor force which would allow me to rule out the factor of chance in accounting for Bemba participation.

Also to the point is the behavior of the Nyachusa miners. During an epic twelve-week strike in 1955, the Nyachusa refused to take part in the strike; they also sought to withdraw from the Mineworkers' Union. Their leaders declared that "the Nyachusa people were interested only in coming to the copperbelt to earn money", and not to become permanent residents. The response of this ethnic group thus suggests that low rates of urban stabilization correlate with low levels of participation (File 100.01).
In the model below, we relate these three variables in the manner suggested by the literature. As a measure of tribal membership, we determine whether or not a person is a Bemba. As an index of urban stability, we use the length of service on the mines. To measure participation, we determine whether or not a person is a member of the Mineworkers' Union.

\[
\begin{align*}
\text{Tribe} & \rightarrow \text{Urban stability} \rightarrow \text{Participation} \\
1 & \quad 0.025 \quad \rightarrow \quad 2 \quad 0.362 \quad \rightarrow \quad 3
\end{align*}
\]

In evaluating this model against alternate interpretations, we will compare the difference between the obtained relationships and the relationships predicted by each.

**Predicted correlation**  
\[ \varphi_{12} = 0 \quad \varphi_{13} = \frac{a_{12}}{s_2} \cdot \frac{a_{13}}{s_3} \]

** Obtained correlation**  
\[ \varphi_{12} = 0.009 \quad \varphi_{13} = 0.018 \]

**Difference**  
\[ \text{Difference} = 0.009 \]

2. **Class Model.**

The sociological model emphasizes urban stability as an intervening variable between tribe and other factors. The class model stresses the intervening variable of income.

The basis for the class model of ethnicity is the observed relationship between tribal membership and income. It is in terms of this relationship that analysts explain the emergency of ethnic conflict. While we do not focus on ethnic conflict in this paper, we nonetheless can explore the principal assumption of this model: that tribe becomes a significant variable through its relationship with income.

In an analysis of Yoruba towns, Bascom notes that patterns of stratification relate to patterns of ethnic origin: Yoruba of non-local origin and members of other tribes, he states, locate among the lower urban strata.\(^1\) Schwab notes a similar pattern in Oshogbo, where members of immigrant ethnic groups cluster into the extreme ranges of the income distribution.\(^2\) Southall reports related findings in his studies of Kampala. The Ganda occupy the top economic positions in the city (excluding Europeans and Asians) and disproportionately

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2. See Schwab.
dwell in the more expensive townships. Fortes, in a social survey of Kumasi, reports "a close parallelism between ethnic origin, living standards, the degree of Westernization, etc." Kilson notes a similar tendency in Sierra Leone, where, as the Protectorate became increasingly involved in the modern money economy, the Creole population gained economic ascendancy over other ethnic groups. Studies in Abidjan, Conakry, and Accra report a tendency for the type of employment and tribal membership to correlate.

Class analysts emphasize that ethnically-based distributions of wealth promote partisan and conflict-laden patterns of political participation. Thus, Zolberg indicates that the overlay of differential levels of income upon ethnic cleavages reinforces and exacerbates ethnic cleavages in the Ivory Coast. Sklar notes a similar pattern in Nigeria; in so doing, he most lucidly articulates the class model of ethnicity:

"Tribalism is widely supposed to be the most formidable barrier to national unity in Africa. Nearly every African state has at least one serious problem of ethnic or regional separatism. It is less frequently recognized that tribal movements may be created and instigated to action by the new men of power in furtherance of their own special interests which are, time and again, the constitutive interests of emerging social classes. Tribalism then becomes a mask for class privilege. To borrow a worn metaphor, there is often a non-traditional wolf under the traditional sheepskin [...].

An analysis along these lines does not underestimate the intensity of tribal conflict. It does suggest that tribalism should be viewed as a dependent variable rather than a primordial political force in the new nation."

Patterns of ethnic conflict in Zambia warrant the application of a class-based model. On the coppermines, tribes from Malawi

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desia disproportionately hold top economic positions. At Rhokana, they dominate the white-collar and managerial echelons of the Personnel Department and hold a disproportionate share of the supervisory posts in the production departments. The ethnic antagonisms created by this pattern serve as a constant source of tensions in the mining areas.\(^1\) The southern towns of Zambia evidence a similar pattern. Thus, in her study of Livingstone, McCulloch declares:

> "While numbers of each of the six main tribal groups represented in town were found in all occupational groups except one [. . .] there were marked indications that the most skilled and better paid jobs were being done mainly by members of specific tribes or groups of tribes. There was a tendency, in other words, for economic class to correspond with tribal group."\(^2\)

Rotberg contends, in his most recent study of Zambian politics, that class influences the importance of tribe at the national level as well:

> "I would argue that 'class' is the more determining variable in Zambian politics today, and that the 'tribal' split in the governing party is symptomatic rather than causal."\(^3\)

As we have measured the variable of tribal membership and not tribal conflict, we will put tribe first in the causal hierarchy, while retaining income as an intervening variable. Income cannot cause tribal membership. And it is in keeping with class interpretation of ethnicity to state that different tribes occupy different income levels and that this causes differing rates of organizational participation.

**The Class Model**

\[
\begin{align*}
\text{Tribe} & \rightarrow \text{Income} \rightarrow \text{Participation} \\
1 & \quad -.107 \quad 2 & \quad .212 \quad 3
\end{align*}
\]

**Predicted correlation**

\[
\begin{align*}
\phi_{13:2} &= 0 \\
\phi_{13} &= a_{12} \frac{s_1}{s_2} \cdot a_{23} \frac{s_2}{s_3}
\end{align*}
\]

**Obtained correlation**

\[
\begin{align*}
\phi_{13} &= -.023 \\
\phi_{13} &= .018
\end{align*}
\]

\[\text{Difference} = .041\]

**3. The Machine Model.**

The machine model of ethnic behavior stresses the variable of organizational participation. Tribal membership, according to the

\(^1\) Evidence from my own field work. Under Government urging, the mine management now blocks the promotion of Rhodesians and Malawians who have failed to obtain Zambian citizenship.

\(^2\) See McCULLOCH, p. 67.

\(^3\) See ROTBERG, p. 29.
model, achieves significance through the operations of social and economic organizations; membership in a given tribe leads to organizational power, and this in turn leads to economic advantages. In the context of the mines, the relevant organization would be the Mineworkers’ Union and the economic advantages would be higher income and greater job security, as revealed by longer lengths of service.

Southall interprets some aspects of his Kampala materials in terms of a machine model of ethnic behavior. Thus, he notes that the Ganda dominate the structures of power in Kampala and translate this position into superior wealth and material advantages. Dudley and Whitaker relate a similar pattern in Northern Nigeria. Noting the organizational dominance of the Hausa-Fulani, Dudley describes their use of the power of the native authorities to penalize opponents and to aggrandize their own position. Whitaker, emphasizing the clientage relationship, notes a similar pattern. So too in the southern regions; according to Sklar, both the Yoruba and Ibo utilized their power positions to material advantage. Thus, he refers to the Ogboni society in Benin as a pure type of ‘political machine’ and explains the emergence of tribally-based politics in terms of the exploitation of regional power centers by ethnically-dominated political parties:

“The regional party leaders operated highly effective systems of patronage, dispensing jobs, contracts, commercial loans, traditional titles, and scholarships. Young people in all parts of the country were pressured in various ways to support the regional government parties [. . .]. Opinion follows interest, and many young adults furthered their careers by adopting regionalist principles and tribalist ideologies.”

In the mining areas of Zambia, as we have noted, there are occasional accusations that the Bemba utilized the Union as a political and economic machine. In the past, these accusations were brought to a focus by internal splits within the Union hierarchy. In 1952, the General Secretary of the Union, Simon Kaluwa, attempted to block the appointment of Jameson Chapoloko to staff post in the Union. Kaluwa was a Nyanja speaker; Chapoloko was a Bemba, and at the time had close ties with Lawrence Katilungu, the Bemba President of the Union, and Robinson Puta, a Bemba who was Vice-President of the Union and Branch Chairman at Nchanga. Kaluwa was dismissed for his action, and the Nyanja-speaking members began

1. See A. W. Southall, in Wallerstein, ed.
to organize a separate association. Katilungu and Puta, however, employed the economic power of the Union to prevent the schism; by withdrawing the Union's protection from the deviants, and by rewarding the faithful, they reasserted their control over the Union and prevented an ethnic split. In the eyes of some members, however, they had merely reasserted Bemba dominance over the Union.\footnote{1}

In a similar incident in 1959, Gordon Chindele lost his post in the Union. Chindele, in protest, wrote the Labour Department, and his letter reveals his perception of a machine-like ethnic organization.

"It is very unfortunate that the Auditor did not make it quite clear that Mr. Katilungu did in fact and still does encourage the violation of union rules in the handling of trust moneys. He thinks he is the union and that he as the union rules himself. He does not regard the union as an organization of workers, but regards it as something of a Bemba tribal heritage."\footnote{2}

"I suggest that the Labour Department do something about the staffing of the Union officials in the Head Office of the union. The trust moneys of the union will be quite unsafe under the administration of the Bemba irresponsible gentlemen. In fact, the union now has become a Bemba business concern or rightly to say a 'Bemba Employment Bureau'."\footnote{3}

A representation of the machine model would be:

**Machine Model, Variant 1**

\[ \begin{align*}
1 & \quad \text{Tribe} \quad .018 \\
2 & \quad \text{Organizational participation} \quad .210 \\
3 & \quad \text{Income} 
\end{align*} \]

**Machine Model, Variant 2**

\[ \begin{align*}
1 & \quad \text{Tribe} \quad .018 \\
2 & \quad \text{Organizational participation} \quad .359 \\
3 & \quad \text{Length of service} 
\end{align*} \]

**Predicted correlation**

\begin{align*}
\theta_{12} &= 0 \\
\theta_{13} &= a_{12} s_1 a_{23} s_2 s_3 \\
\theta_{13} &= .004 \\
\theta_{13} &= .101 \\
\text{Difference} &= .105
\end{align*}

**Obtained correlation**

\begin{align*}
\theta_{12} &= 0 \\
\theta_{13} &= a_{12} s_1 a_{23} s_2 s_3 \\
\theta_{13} &= .066 \\
\theta_{13} &= .024 \\
\text{Difference} &= .042 \\
\text{Average difference} &= .073
\end{align*}

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\footnote{1}{Secretariat, C/1821/2, Vol. I.}
\footnote{2}{File 120.7.}
\footnote{3}{Ibid.}
Conclusion

Of the three models, the sociological model best applies to the data from the Nkana mine townships. One criterion for evaluating the models is to reject those whose predictions fail to match the obtained correlations with a difference of .05 or less. By this standard, we can reject the machine models. To choose between the remaining interpretations, we can ask: which one yields predictions that best fit the obtained correlations? The sociological model meets this standard.

There remains a last question. While Zambia recently has begun to experience the ethnic tensions that have long characterized other countries in Africa, it was clearly a late-comer in this regard. Moreover, despite the inter-elite conflicts between leaders from different tribes, I found surprisingly little carry-over into conflicts among residents of the Nkana townships. The two observations are related, for the relative absence of tribal conflict at the local level in Zambia surely postponed the emergence of such conflict at the national level. The question therefore arises: given the applicability of the sociological model to our data, can the literature from which we draw this model help to explain why the observed differences between tribes fail to generate ethnic conflict?

Almost every writer who posits a sociological model stresses the importance of residential segregation. Thus, students of Yoruba towns cite the continued importance of lineage compounds. As one author states, most indigenous residents “continue to live in the compounds of their own lineage, to participate fully in the affairs of their kinfolk, and to belong to the traditional [. . . ] societies.”

Equally important, the immigrant groups live in separate, strangers’ quarters. Because of residential segregation, the factor of ethnic membership becomes highly salient. As Southall states in his discussion of Kampala:

“The encouragement of ethnic differences through separate residence tends to generalise a model of the whole social system in which an ethnic component enters the interpretation of all differences of [. . . ] behavior.”

Spatial segregation, superimposed on ethnic differences, thus amplifies the importance of tribe and the conflicts between immigrant and ‘permanent’ tribal groupings. Evidence for this is the invasion

2. See, for example, Schwab.
3. Aidan Southall, in Miner, ed., p. 327.
of the strangers' quarters that precipitated ethnic warfare in Nigeria.

In the mine townships of Zambia, however, no such segregation takes place. Only the mining companies build houses; 'shanty-towns' are forbidden. The mines allocate housing on the basis of need and ability to pay. These criteria obviate the self-selection of persons into ethnic clusters and thereby hinder the formation of separate and discrete tribal groups. Differences between immigrant and 'permanent' ethnic groups thus fail to receive reinforcement from the spatial ordering of the mine townships.

Also relevant is the absence of a core ethnic group similar to the Ganda, Yoruba, or Hausa-Fulani. The mine towns did not emerge from pre-existing Bemba towns; they were created wholesale by the mining companies in the 1920's and 1930's. Not only do they lack a core tribal group; they also lack the political and administrative organization associated with such groups in Kampala, Ibadan, and elsewhere. Through these organizations, reactivated by the policy of indirect rule, ethnic groups assert control over their urban societies, organize their own members, and engage in political conflict and competition with other ethnic groups. In this sense, tribalism is absent in the mining areas.¹

Certain contextual features of the mine townships—the absence of ethnic segregation, core tribal groups, and traditional political structures—thus help to explain the failure of organized ethnic conflict to emerge at the local level. Significant differences demonstrably exist; but they do not exist under conditions which would lead to the patterns of ethnic conflict found in other urban centers in Africa.

¹. Max Gluckman forcefully registers this point in his article, "Tribalism in Modern British Central Africa", CEA, I-1, 1960, pp. 55-70.