Education, training and recruitment policies of employers: the case of Panama and Rwanda
(An attempt to analyze scales of recruitment criteria)
Jacques Hallak and Jan Versluis
IIEP research report:

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A contribution to the IIEP research project on employment, the nature of work and educational planning

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Among the numerous recent research developments in the attempt to elucidate the education/work/employment links, one of the most promising is the construction of the employers' preference function of human resources. Such a function is complex by its multi-dimensionality, i.e. it involves (i) different characteristics of workers (ascriptive, cognitive, non-cognitive) to determine job profiles; (ii) different job profiles for different occupations; (iii) distinct combinations of workers' characteristics for different firms. Yet its knowledge is obviously the first step in any effort to plan human resources (i.e. can we plan the supply without knowing the demand function? even if we do not believe in the necessity to adapt the supply to the specification of the demand).

The construction of the employers' preference function requires an adequate system of data collection. With this purpose in view, in a number of surveys which were carried out, employers were asked to list by order of priority (or by relevance) the main criteria for selection and recruitment of applicants for certain specific jobs. Students of the functioning of labour markets are generally skeptical on the validity and reliability of "opinion data" of this kind, on the grounds that (i) we do not have adequate statistical tools for analyzing it (i.e. how to test differences in the classification of criteria?) and (ii) employers probably respond in a rather "erratic" way to questions of this kind.

The purpose of this paper is to report on a research effort to develop some means for overcoming these difficulties. The research carried out jointly by the IIEP (education/work/employment project) and the ILO (education/employment project) attempts to construct a statistical tool for analyzing scales of recruitment criteria. The following chapter describes the method of analysis...
which, while not entirely satisfactory - as it still converts ordinal data into cardinal -, can perhaps be considered as fairly simple. In order to test the applicability and the validity of this method, we have applied it to two different sources of data using (i) the enquête 1977 sur l'emploi - établissements du secteur privé et parastatal of Rwanda and (ii) the IFARHU/IIEP employers' survey 1977 on the cities of Panama and Colón in the sectors of industry, commerce and services. Chapters III and IV of this paper give the results of these numerical exercises which are, as in a sense is shown, a posteriori proof of the validity and simplicity of the method suggested. The last chapter of the paper draws some brief conclusions.
2.1 The survey's interviewees are sometimes asked to indicate opinions or preferences by ranking a number of given elements. An example of such a ranking that the present paper deals with is one where employers are asked to rank a series of possible criteria which may play a role in selecting among applicants to fill certain types of posts. The recruitment criteria have to be ranked according to the relative importance the employer attaches to them. The technical problem arising in analyzing the replies to such a survey questionnaire is that of comparisons between such rankings. One question, for example, that we may be interested in is whether a certain criterion is given significantly more importance than another one in selecting people for a given occupation. Another example of a question that may be of interest is whether a given criterion is more important in selecting people for a certain occupation rather than for another occupation.

The ranks being ordinal numbers rather than cardinals, the problem is not simply one of determining "average" ranks and even if such a thing as a mean rank existed, the question would remain when two such figures were significantly different and when a difference could be ascribed to chance.

In this chapter a methodology is presented which aims at first translating the ordinal numbers into cardinal figures, then standardizing the cardinal numbers to allow for comparisons and finally applying a simple statistical technique to test the significance of inequality between certain functions of the standardized cardinal figures(1).

2.2 The translation of the ordinal numbers representing the ranks into cardinal figures is, apart from some minor complications to be introduced later on, simple and straightforward. Let n be the rank of an element in a series of N elements in

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(1) The authors are largely indebted to Dr. Adib Hathout, Researcher, Laboratory of Statistics, University of Paris, who suggested this methodology to them.
We may then give a mark to each element according to its rank, starting with the principle that we have a total number
\[ n = 1, 2, \ldots, N \]
of points to distribute over the N elements, i.e. the one that ranks first receives the mark N, the one ranking second N - 1 and so on, the one ranking last receiving 1 point only. In other words, the mark obtained by the element whose rank is n would be N - 1 - n. These marks may then be treated as cardinals, to which the standard algebraic operations can be applied.

2.3 Two minor complications have to be taken into consideration. Firstly, it may happen that one or more elements do not appear in the observed ranking, because they are considered to be entirely irrelevant. These elements then obtain the mark 0 and the total number of points to be distributed is not \( \sum_{i=1}^{N} i \) but
\[ \sum_{i=1}^{N} i - \sum_{j=N-J+1}^{N} j \]
in which
\( J \) is the number of elements that, because they were irrelevant, have received mark 0.

Another complication, which in fact is not unavoidable if a questionnaire is designed with the proposed methodology in mind, occurs in one of the two case studies presented in this paper. It may happen that two or more of the elements obtain the same rank. In that case, if \( K \) elements obtain, say rank \( n' \), the next ranking element should theoretically be given rank \( n'' = n' + K \). For example, if two elements obtain rank 3, the next should be number 5. This procedure implies however that the total number of points to be distributed over the elements

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(1) A real purist might argue that also the marks are not really cardinal numbers, any school teacher, however, is treating them as such when preparing quarterly reports, a practically universally-accepted procedure.

(2) The reader who strongly dislikes formulae may jump to section 2.4 without losing much.

(3) It may even happen that \( J = N \) in the case where none of the elements listed on the questionnaire is relevant.

(4) A procedure followed currently in sports, if two teams rank ex aequo at the third place, the next is called fifth.
is
\[
\sum_{i=1}^{N} - \sum_{j=N-j+1}^{N} - \sum_{k=1}^{K-1}
\]

In the case study discussed later on, this rule has not been followed. When \( K \) elements are classified ex aequo as number \( n' \), the next was given rank \( n'' = n' + 1 \). Here the total number of points to be distributed becomes
\[
\sum_{i=1}^{N} - \sum_{j=N-j+1}^{N} - \sum_{k=1}^{K-1} - (N - K - n' + 1) (K - 1)
\]

A small numerical example may illustrate the meaning of what seems to become a complicated formula. Let us assume that we have eight elements, ranked 1, 2, ..., 8. The total number of points to be distributed would be
\[
1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 = 36
\]

If, however, three elements had been ranked ex aequo in the third position and the next had been called sixth, the total would be
\[
1 + 3 + 3 + 3 + 6 + 7 + 8 = 33
\]

\( \sum_{k=1}^{K-1} \) being \( 1 + 2 = 3 \). And if the further complication was that after the three elements in the third position, the next had been called fourth, the total number of points would be
\[
1 + 3 + 3 + 3 + 4 + 5 + 6 = 27
\]

and \( \sum_{k=1}^{K-1} \) would still be 3 (the loss of points caused by the fact that the second 3 is not a 4 and the third 3 not a 5) and \( (N - K - n' + 1) (K - 1) = 6 \) (the loss of points due to the fact that 4 is not 6, 5 is not 7 and 6 is not 8, 3 elements i.e. \( N - K - n' + 1 \) have a lower rank than they theoretically should, their rank being \( K - 1 \) lower than it "should" have been).

2.4 In fact, the only reason why the complications of section 2.3 have to be mentioned and analyzed, is that the sum of the marks might in certain cases be less than \( \sum_{i=1}^{N} \). To allow for comparisons however, it is essential that the sum of the marks is always the same, where in the case of recruitment criteria
"always" means "for each occupation in each establishment". For that reason a standardization procedure is applied which makes them equal. If for example, among all occupations, the highest sum of marks found is $N^N$ and for a given occupation the sum of the marks as defined in sections 2.2 and 2.3 is $N^N < N^N$ each of the marks for that particular occupation is multiplied by $\frac{N^N}{N'}$ which leads to a standardization such that also for the occupation under consideration the sum of the marks becomes $N^N$.

2.5 Having obtained now standardized cardinal marks, we may proceed to the calculation of means and standard deviations and go on to a testing procedure for the significance of inequality of mean standardized marks. The procedure followed is that of the well known T test, the computer programme used that of the SPSS. So for a description of the test the SPSS manual may be referred to (2). Two types of tests have been applied, viz. between paired samples and between grouped samples. To illustrate these expressions examples may be given of each type. Paired sample tests would reply to questions such as "is experience more important in the recruitment of foremen than in that of production workers?" or "is education more important than civil status when a secretary is recruited?". Grouped sample tests take up questions such as "is health as a recruitment criterion for bookkeepers more important in the public or in the private sector of the economy?".

2.6 Just a few small examples selected from the studies discussed in the next chapters. In the Panama study a ranking is made among 12 criteria, the maximum mark a criterion can have thus being 12. In one occupational category the average mark of experience is close to 11, the average mark for sex 0.7. Needless to say that the difference is highly significant, $t = -10$. In Rwanda,

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(1) The procedure followed allows for one exception. If the case occurs where all criteria are considered to be irrelevant $J = N$, as mentioned in the footnote in section 2.3, $N'$ would also be 0 and the sum of standardized marks should also be 0; fortunately the computer programme used treats $\frac{N^N}{0}$ as 0, so that the desired result is automatically obtained.

experience for workers obtains an average mark 1.7 (on a maximum of 3),
education for workers 0.08, \( t = -13.48 \), also highly significant. But
vocational training for technicians scores 0.75, while experience for
technicians scores 0.65, leading to \( t = 0.64 \) and no significant difference.
CHAPTER III
APPLICATION TO PANAMA

3.1 In the framework of a research study carried out by the IIEP on "education and work", in the cities of Panama and Colón, a survey questionnaire was administered to 80 firms. The questionnaire included among other things a section dealing with criteria for recruitment and promotion for the following selected occupations: managers; professionals, production supervisors; other supervisors; accountants; executive secretaries; secretaries; workers doing qualified jobs (W.Q.); other workers (W); salesmen. More specifically, employers were asked to rank by order of preference the following criteria for selection of applicants to each of the selected occupations: health; civil status; age; education; male; female; police record; English; experience; seniority. And in addition, in the case of promotion (internal recruitment): "performance test administered by the firms" and "opinion of supervisors". Some criteria can be judged as "equally important" and be ranked "ex aequo"; other criteria can be considered to be "irrelevant" and ranked "0".

(1) The survey was carried out in May/June 1977 by the IIEP and IFARHU. The probability sample was stratified (50%) with the following basis: firms of more than 50 employees in industry, commerce, transport and banks; firms of more than 30 employees in the other service sectors. The main purpose of the survey was to examine the relationships between firms' characteristics (size, status, capital, process of production, market, etc.), their use of human resources (distribution of employees by department and function), and their personnel policy (condition of remuneration, of contract, of work, mode of recruitment, etc.). A more specific purpose was to study recruitment and promotion policies and the role of education and training regarding access to some key occupations. The questionnaire included (i) factual data on firms' characteristics and on its use of manpower; (ii) factual data on conditions of work for some pre-selected occupations; (iii) opinion and factual data on mode of recruitment for those occupations. Item (i) was completed by any representative from the administrative or managerial department; items (ii) and (iii) were completed by the personnel department. The process used for data collection was "direct interviews". The report of the study is available in English, French and Spanish and can be obtained from the IIEP: Education and Work in Panama by J. Hallak and F. Caillods.
The hypotheses to be tested and questions to be answered are the following:

(1) Are "ascriptive characteristics" of workers important regarding access to various occupations?

(2) The lower the position of the occupation in the "job ladder" the less important the role of education as a criterion for selection.

(3) For some specific occupations, employers put more emphasis on "experience" than on "education".

(4) (For socio-cultural reasons), some occupations are "closed" for some categories of applicants (male/females; young/old; married/single; etc.).

(5) The patterns of recruitment for (1) to (4) are different for different categories of firms (i.e. large firms have a recruitment policy which is different to that of small firms; public from private; etc.).

e tc.

3.2 In order to test these hypotheses, it was necessary to develop an adequate statistical treatment of the data. Using the methodology described in Chapter II, we are able to:

- compare pairs of criteria for each occupation;
- examine the "value" of each criterion for each pair of occupations.

Adopting a 5% degree of confidence (t-test), it is possible for example to demonstrate that in the case of "managers": age occupies a higher rank than civil status, sex or police record; a lower rank than education or experience; and that no conclusion can be made as to the "relative position" of age in comparison with the other criteria. Similarly English is (5%) more important for "managers" than for "supervisors of production"; and for "executive secretaries" as opposed to "accountants"; no comparison can be made with regard
to this criterion for "salesmen". The tables below illustrate these findings. 

Table 1 should be read as follows:
- 1st row: Health ≻ C.S. means Health is more important than Civil Status when recruiting for a managerial position.

In order to check whether recruitment criteria differ according to firms' characteristics, we carried out the same statistical treatment for each category of firms (public/private; large/small; modern/traditional, etc.). We found for example that in the public sector no clear-cut conclusion (5%) can be drawn with regard to English as a selection criterion, whereas in the case of "private" firms it plays a significant role in various occupations.

While this partial information is sufficient to document some of the statements made above, in order to come to more complete conclusions useful for policy-making, we need to combine these findings with a view to drawing a more integrated picture of recruitment policies for various occupations. To put it differently, it is not sufficient to compare "health" with "age" for "accountants" and to decide that "age" is more important than "health" in the selection procedure; what we really want, is to say which criteria are "irrelevant"; to what extent ascriptive criteria are relevant; whether cognitive criteria are more or less important than other criteria in recruiting for occupation x; how education compares with other criteria. Hence we need to define "profiles" by producing "chains" of criteria ranked by order of preference for each occupation; we need also to supplement these profiles by comparing occupations themselves.

3.3 In order to do this an important question needs to be answered: is the relationship "rank higher" an "order relationship", i.e. "anti-reflexive"; "anti-symmetric" and "transitive"? Theoretically the answer is "yes". As the "average mark for criterion x is not higher than the average mark for x"; if the "average mark for criterion x is higher than the average mark for criterion y the opposite is not true"; and if the "average mark for x ≻ average mark for y" and if the "average mark for y ≻ average mark for z" then the "average mark x ≻ average mark z".

Table 1

Comparison of recruitment criteria for managers
(5% degree of confidence T-test)

<table>
<thead>
<tr>
<th>H</th>
<th>C.S.</th>
<th>A</th>
<th>Ed</th>
<th>M</th>
<th>F</th>
<th>P.R.</th>
<th>Eng.</th>
<th>Exp.</th>
<th>S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>&lt;</td>
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<tr>
<td>Civil Status</td>
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<tr>
<td>Age</td>
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<tr>
<td>Education</td>
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<td>Female</td>
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<tr>
<td>Police Record</td>
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<tr>
<td>English</td>
<td>&lt;</td>
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<td>&gt;</td>
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<tr>
<td>Experience</td>
<td>&lt;</td>
<td>&lt;</td>
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<td>&lt;</td>
<td>&gt;</td>
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</tr>
</tbody>
</table>

Nota: It is striking from this table to see that experience and education are both the most important criteria for selection to "managers" and that "female" is considered as a "criterion" for "non-access" to the job of "managers", and not as an "irrelevant criterion". The opposite holds true for "males": "civil status", "English" and "Police Record" are "poor" criteria. The picture is mixed for "health", "age" and "seniority".

Table 2

"English" as a criterion for recruitment to various occupations (5%) (private employers as for public irrelevant)

<table>
<thead>
<tr>
<th>M</th>
<th>A</th>
<th>Sup.</th>
<th>E.S.</th>
<th>S.</th>
<th>W.Q.</th>
<th>Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managers</td>
<td>&gt;</td>
<td>&gt;</td>
<td>&lt;</td>
<td>&lt;</td>
<td>&gt;</td>
<td>&gt;</td>
</tr>
<tr>
<td>Accountants</td>
<td>&lt;</td>
<td>&lt;</td>
<td>&lt;</td>
<td>&lt;</td>
<td>&gt;</td>
<td>&gt;</td>
</tr>
<tr>
<td>Supervisors</td>
<td>&lt;</td>
<td>&lt;</td>
<td>&lt;</td>
<td>&lt;</td>
<td>&gt;</td>
<td>&gt;</td>
</tr>
<tr>
<td>Executive secretaries</td>
<td>&gt;</td>
<td>&gt;</td>
<td>&lt;</td>
<td>&lt;</td>
<td>&gt;</td>
<td>&gt;</td>
</tr>
<tr>
<td>Secretaries</td>
<td>&gt;</td>
<td>&gt;</td>
<td>&lt;</td>
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<td>&gt;</td>
<td>&gt;</td>
</tr>
</tbody>
</table>

Nota: "English" is evidently not a "criterion" of the same importance for "executants" (i.e. W.Q. and Workers) as for "executives" (i.e. "managers", "executive secretaries"). It has more importance for "occupations" which involve relations outside the firms (managers, secretaries) than internal to the firms (supervisors).
However, there is an uncertainty with regard to the "transitivity" due either to lack of consistency and reliability in the employers' replies; or to the fact that the relationship "higher mark" is true in probability \(^{(1)}\). For this we had to check empirically the validity of the hypothesis of "transitivity". The results are summarized below for some categories of firms and for some occupations.

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Selection criteria ordered according to employers' preference in the private sector (5%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managers:</td>
<td>Education (\rightarrow) Experience (\rightarrow) Age, English (\rightarrow) Civil Status (\rightarrow) Sex</td>
</tr>
<tr>
<td>Accountants:</td>
<td>Education (\rightarrow) Experience (\rightarrow) Health, Age (\rightarrow) Seniority, Civil Status, Sex</td>
</tr>
<tr>
<td>Supervisors of production:</td>
<td>Experience (\rightarrow) Education, Seniority (\rightarrow) Health (\rightarrow) Age (\rightarrow) Civil Status (\rightarrow) Sex</td>
</tr>
<tr>
<td>Executive Secretaries:</td>
<td>Sex, English, Experience, Education (\rightarrow) Health, Civil Status, Age</td>
</tr>
<tr>
<td>Secretaries:</td>
<td>Education (\rightarrow) Experience, Sex (\rightarrow) Age, Health (\rightarrow) English (\rightarrow) Civil Status (\rightarrow) Seniority</td>
</tr>
<tr>
<td>W.Q.:</td>
<td>Education (\rightarrow) Experience (\rightarrow) Age, Health (\rightarrow) Civil Status, Sex (\rightarrow) Seniority</td>
</tr>
<tr>
<td>Workers:</td>
<td>Experience, Health, Age (\rightarrow) Education, Sex, Police Record (\rightarrow) Other criteria</td>
</tr>
</tbody>
</table>

\(^{(1)}\) Another difficulty relates to the case of criteria not related in probability (at 5% degree of confidence). For the sake of simplification, we have decided to omit them with the result of having produced "incomplete chains", i.e. not including all the criteria.
Table 4

<table>
<thead>
<tr>
<th>Category</th>
<th>Selected criteria ordered according to employers' preference in the public and private sector (5%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managers:</td>
<td>Education &gt; Experience &gt; Age &gt; Seniority, English, Health &gt; Civil Status</td>
</tr>
<tr>
<td>Technicians:</td>
<td>Education &gt; Experience &gt; Health &gt; Sex</td>
</tr>
<tr>
<td>Supervisors of production:</td>
<td>Experience &gt; Education, Seniority &gt; Health, Sex, English &gt; Civil Status, Police Record</td>
</tr>
<tr>
<td>Other supervisors:</td>
<td>Experience &gt; Education &gt; Health &gt; Age, Sex &gt; Civil Status, Seniority, English, Police Record</td>
</tr>
<tr>
<td>Accountants:</td>
<td>Education &gt; Experience &gt; Health, Age &gt; Seniority, Civil Status, Sex, Police Record</td>
</tr>
<tr>
<td>Executive secretaries:</td>
<td>Sex, English, Experience, Education &gt; Health, Civil Status, Age, Police Record</td>
</tr>
<tr>
<td>Secretaries:</td>
<td>Education &gt; Experience, Sex &gt; Health, English &gt; Age &gt; Civil Status, Police Record, Seniority</td>
</tr>
<tr>
<td>W.Q.:</td>
<td>Education &gt; Experience &gt; Age, Health &gt; Sex &gt; Police Record, English &gt; Civil Status, Seniority</td>
</tr>
<tr>
<td>Workers:</td>
<td>Experience, Health, Age, Police Record &gt; Sex &gt; Education, Seniority, English</td>
</tr>
</tbody>
</table>

Table 5

<table>
<thead>
<tr>
<th>Category</th>
<th>Degree of relevance of criteria (public)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age:</td>
<td>Secretaries &gt; Technicians</td>
</tr>
<tr>
<td>Education:</td>
<td>Technicians &gt; Accountants &gt; Secretaries</td>
</tr>
<tr>
<td>Experience:</td>
<td>Managers &gt; Executive Secretaries; Technicians &gt; Secretaries; Workers; Technicians &gt; W.Q.; Supervisors of production &gt; W.Q.</td>
</tr>
</tbody>
</table>
Table 6  

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Workers</th>
<th>Managers</th>
<th>Accountants</th>
<th>Supervisors</th>
<th>Secretaries</th>
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<tbody>
<tr>
<td>Health</td>
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<td>Civil Status</td>
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<td>Age</td>
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<td>Male</td>
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<tr>
<td>Seniority</td>
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</table>

Many comments and conclusions can be made on the basis of the above results. Let us limit ourselves to the most striking ones.

Firstly, the distinction in terms of ranking of criteria between the public and the private sector, is certainly useful, at least insofar as the role of "police record" is concerned. In the private sector, this criterion seems to play a much more minor role than in the public sector. Similarly, "seniority" is a slightly more important criterion in the public than in the private sector. On the other hand, education ranks slightly higher in the public than in the private sector.
sector.

Secondly, with two exceptions (supervisors of production, workers), education is always (one of) the first criteria for access to all occupations. The same result is true for experience (except for managers, secretaries). This means that "cognitive aspects" of job applicants, whether developed on the job (experience) and/or through the educational system (education) are the top criteria for selection. However, while in the case of education, some difference in the relative weight given to this criterion can be perceived when comparing various occupations (education is more important for accountants than secretaries, more for secretaries than managers, more for managers than supervisors, more for supervisors than workers doing qualified jobs and more for W.Q. than grassroot workers); no significant pattern seems to emerge for experience. Clearly, there is a strong contrast between managers and secretaries where education comes first and experience second, and supervisors and workers, where the opposite holds true. The question which remains to be answered is whether there is a "substitutability" phenomenon between the two.

Another "cognitive aspect" of job applicants is English. It holds a major position for "executive secretaries" (which is natural enough in Panama), a medium or low position for the other occupations (except technicians and accountants) which is somewhat surprising. Seniority, which is another proxy for "cognitive dimensions" of applicants is rather a poor criterion except for "managers" and "supervisors". This is consistent with the fact that quite often recruitment for these jobs is made through promotion.

It is interesting to note that sex is a top criterion for admission to the jobs of "executive secretaries" and "secretaries". This can be explained by "cultural factors". More generally, we should note that ascriptive criteria (i.e. sex, age, health, civil status) do play a significant role in the selection processes. Some occupations are definitely restricted to young or old (workers, managers), to applicants with good health (almost all occupations); to men or
women (supervisors, secretaries, workers, W.Q.). While in general ascriptive criteria follow cognitive criteria, it is not so for two occupations (secretaries and workers) where they hold similar positions.
**CHAPTER IV**

**APPLICATION TO RWANDA**

4.1 In 1977 a national employment survey was carried out in Rwanda, covering the modern sector of the economy, with the exception of the public sector. The survey covered both establishments of 30 or more employees, smaller establishments and "communes". At the same time information was collected on a certain number of individuals employed in these establishments and communes. The section of the survey that is included in the present study is that of employers of the larger establishments, to whom certain questions were directed regarding recruitment practices. In principle this part of the survey was not based on sampling, but was of an exhaustive nature. The response rate of about two thirds may have introduced biases, but nothing concrete can be said about this aspect. Replies were obtained from 189 establishments, of which 157 in the private sector and 31 in the parastatal sector.

4.2 The question dealt with here was formulated as follows (1):

What interests you most when recruiting new personnel?
(Tick one case only)

- Level of education
- Vocational training
- Experience obtained

A total number of 98 replied for "cadres", 105 regarding technicians and 147 for workers. The percentage distribution of the replies is as follows:

<table>
<thead>
<tr>
<th></th>
<th>&quot;Cadres&quot;</th>
<th>&quot;Technicians&quot;</th>
<th>&quot;Workers&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of education</td>
<td>52.0</td>
<td>16.2</td>
<td>3.4</td>
</tr>
<tr>
<td>Vocational training</td>
<td>23.5</td>
<td>44.8</td>
<td>23.8</td>
</tr>
<tr>
<td>Experience obtained</td>
<td>24.5</td>
<td>39.0</td>
<td>72.8</td>
</tr>
</tbody>
</table>

(1) Authors' own translation
(2) No proper translation could be found
Even without any statistical testing it is clear that for "cadres" educational qualifications are considered the more important, for technicians vocational training, with experience as a close second, while for workers experience is the dominating factor.

4.3 If only to test the workability of our testing procedure it is interesting to apply it to the figures of section 4.2. One difference with the Panama case is that here we are not dealing with a real ranking, only one of the three criteria had to be indicated as important. The one preferred we have given mark 3, the other two mark 0 (1). The statements of section 4.2 are strongly confirmed by the results of the T-test. As far as within-occupation comparisons of criteria are concerned the following results are obtained:

"Cadres": education more important than training (T = 3.34, two tailed probability 0.001), education more important than experience (T = 3.19, prob. = 0.002), no significant difference between training and experience (T = -0.15, prob. = 0.884).

Technicians: both training and experience very significantly more important than education, no significant difference between training and experience (2).

Workers: experience more important than training as well as education, training more important than education.

As to comparisons among occupations:

Education: significantly more important for "cadres" than for technicians, more important for technicians than for workers.

Training: more important for technicians than for "cadres" as well as workers, no difference between "cadres" and workers.

Experience: significantly more important for workers than technicians as well as "cadres", more important for technicians than for "cadres".

4.4 The same test has been performed for private and parastatal sectors separately, with exactly the same results for both. This does not fully hold however when separate tests are applied for firms that are predominantly foreign

(1) It can easily been shown that for the result of the test it is irrelevant whether 3 or any other figure is chosen; we took 3 because it corresponds to what is done in the ranking case.

(2) No more boring figures are presented regarding T and its probability "significance", we report only the probability.
owned and firms that are mainly Rwandan owned. Among firms which have 50% or less foreign capital the difference between the importance of education for technicians is not significantly different from that of experience, while for the total group of establishments it is. Within the group of firms that are based on more than 50% foreign capital the recruitment criteria for cadres are not significantly different, predominantly foreign-owned establishments pay as much attention to education as to training or experience when recruiting "cadres". The more correct formulation may, however, be that they pay as little attention to each of the criteria because most of them do not really recruit "cadres", the "cadres" being mainly foreign like the capital. For the same reason within this group of establishments a comparison of the importance of each of the criteria between "cadres" and the other two groups of occupations is not entirely meaningful.

4.5 With regard to comparisons among branches of activity, some of the most salient findings are:

- education as a recruitment criterion for "cadres" is considered to be of more importance in the manufacturing industry than in most other branches;
- vocational training for "cadres" is more important in social services than in most other sectors, both in energy and in banking this criterion is considered to be entirely irrelevant;
- experience for cadres is of little or no relevance in all branches of activity;
- level of education as a criterion in hiring technicians is of little importance throughout the economy, in some sectors it is even entirely irrelevant;
- vocational training for technicians is more important in manufacturing, in commerce and in social services than in most other activities;
experience for technicians is more or less equally important in
all branches, except in transport where it appears entirely
irrelevant;
educational qualifications as a criterion in hiring workers play
hardly any or no role at all in all branches of activity;
vocational training for workers is of more importance in social
services than in other branches;
experience for workers is most important in the manufacturing
industry and in social services, least important in personal
services, with the other branches in between.

As regards within-branch comparisons between occupations, differences are
strongly marked in the manufacturing industry, where experience is strongly
dominating for workers, vocational training for technicians and education for "cadres".

4.6 In the analysis of groups, i.e. comparisons between sub-samples about the
same criterion for the same occupation hardly any significant difference is found.
In other words the parastatal sector is not strongly different from the private in
its recruitment procedures, nor are mainly foreign-owned companies very different
from national-owned with the exception of the recruitment of "cadres" mentioned
in section 4.4 already.
CHAPTER V
SOME CONCLUDING REMARKS

Certain researchers sometimes express doubts about the validity of questions in surveys which rank a small or a considerable number of elements. One of the main conclusions that can be drawn from the present study would be that, while applying a relatively simple methodology findings are arrived at which, to say the least, do not contradict intuition or common sense. The coherence of the findings would seem to justify a continuation of the work along the lines developed here.

5.2 Comparing the results of the two exercises on Rwanda and Panama, it is interesting to note the similarities as to the way in which employers rank education in relation to training and experience for various occupations. While the "job categories" are not strictly comparable in the two surveys, the overall pattern of criteria of selection is very much the same: education comes first for some occupations (managers, secretaries) and experience comes first (before education) for others (supervisors and workers). Training does not seem to be important for either "cadres" or "workers"; it is important only for "technicians". Ascriptive criteria are important for all occupations; but their degree of priority varies obviously with the "position" held by the occupation in the "hierarchical scale" of the firms (Panama).

5.3 As to future work in this area, three main lines seem to present themselves. Firstly, more cases must be worked on. Secondly, a more refined typology of employers should be introduced and thirdly, it would seem useful to make a clear distinction between internal promotion and external recruitment.