

CHAPTER II

BASIC SELECTION MODEL

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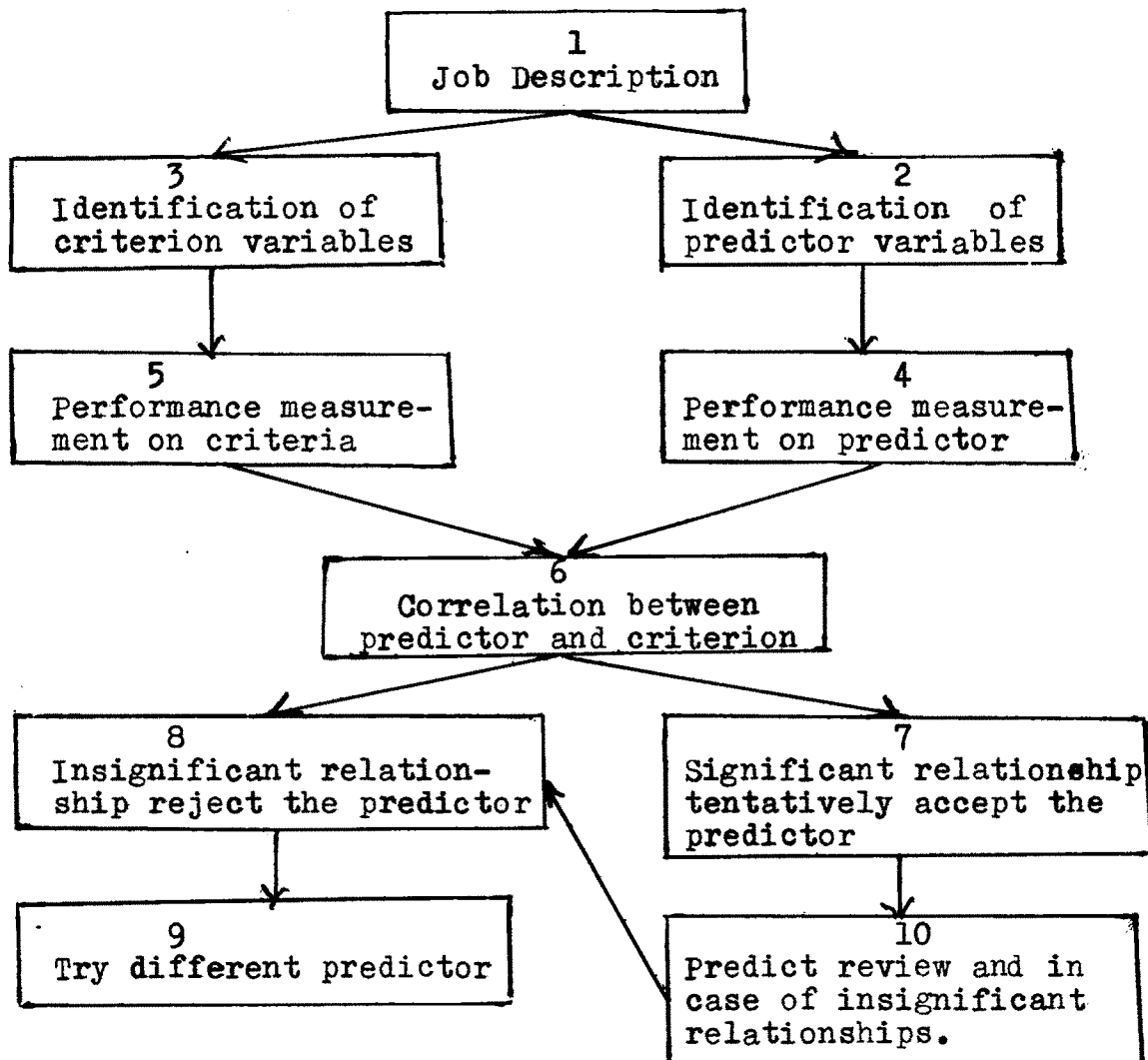
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CHAPTER II
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BASIC SELECTION MODEL:

A basic selection model requires the identification of the most essential steps, from job description, to the final acceptance and review of the selection technique(s). The model has been diagrammed by Blum and Nylor.¹ It is presented with some modifications ~~in~~ as below:



1. M.L.Blum and J.C.Nylor, Industrial Psychology, Its theoretical and social foundations, ~~Wiley~~ New York, Harper and Row, 1968.

Job description:

The most important aspect of any selection model is a description of the various components of the job through job analysis. Those who are responsible for preparing a job description can use one or many of the available methods to obtain data such as a checklist method, interviews, and questionnaire replies from persons involved in jobs, simple observation of how a certain job is performed, and so on. Having looked into the process and functioning of a job, its content description is prepared. The final step in the process is laying down job specifications like qualifications, abilities, skills and experience.

Although it is not reasonable to expect a total job description a meaningful one should highlight as many components of the job as possible.

Very often, companies state only the job title, with little description of the content. This may not communicate much to a potential applicant, and the company might lose some good applicants. Similarly, various companies issue rather general and ambiguous advertisements, asking for "dashing", "extrovert", "intelligent", "sociable" people etc. These often generate many unsuitable applications because the understanding of these terms is very subjective. Also, during selection, panel members might make use of them to

favour one or the other candidate. Hence job description must be specific. The more specific the job content, easier it is to operationalise and translate them into specific tools and techniques of selection.

Identification of predictor variables:

Once a job is clearly identified, determining the skills required to perform a single or several components of the job, and how to measure them, is easy. Predictor variables refer to the selection tools and techniques that can predict successful performance on-the-job. For example, the major components of a stenographer's job are typing, shorthand, filing, etc. Shorthand dictation, a typing-speed test, their skill and measure their proficiency. A good job description helps in identifying the predictors.

Identification of criterion variables:

Another important advantage of job description is the identification of indicators of performance (criteria) for evaluating success on the job. Though identification of both predictor and criterion variables is a simultaneous process, in most cases, companies wait till the end of the year to develop measures of on-the-job performance.

It

It is necessary at this point to introduce the concepts of reliability and validity of both the predictor and criterion variables. Questions relating to their reliability and validity have to be answered to establish the job relatedness of both the selection tools and techniques, and the indicators of performance.

Performance measurement on predictor and criterion:

Having identified the predictor and criterion variables, the next logical step is, how to utilize them. In most cases a quantitative score is usually possible on both predictor and criterion. This can be a test score, or a scale value on one and/or several performance measures, all of which indicate the relative strength and merit of an applicant/employee. Not all predictors and criteria can lend themselves to a neat numerical value, but in most cases it is possible to derive a quantitative indicator.

Correlation between predictor and criterion:

To establish a degree of relationship between predictor and criterion scores, a statistical method of coefficient of correlation is used to see if predictor scores really predict the performance on the job. Box C explains the method of coefficient of correlation. This is a fairly important step, because it demonstrates the job-worthiness of predictors.

Decision to accept or reject a predictor:

Depending upon the degree of relationship between predictor x and criterion, a decision is made to accept or reject the predictor. If the correlation is insignificantly low it indicates that the predictor cannot discriminate between the potential and non-potential successful job performers, and ~~hence~~ hence it is worth rejecting this predictor. On the other hand, if the relationship is high, it indicates that those who score high on the predictor also perform better on the job. In this case, since the predictor can discriminate between "good" and "bad" performers, it should be accepted.

Follow-up:

Having decided to reject a given predictor, the next step is to look for another predictor. Here we go back to step 2 and work downward. On the other hand, if the predictor is accepted, it should not be taken to be valid and reliable for a lifetime; the people who apply might change, larger changes in the organisation might necessitate changes in job, and hence the necessity to review the predictor continuously. If in a subsequent year it shows a low and insignificant relationship, it is necessary to go to step 6, i.e., reject the predictor. This means that the process will have to start all over again and hence the need to go back to step 2.

A. SELECTION WITH MULTIPLE PREDICTORS:

The model given above takes into account one predictor and one criterion. In reality, however, organisations use a number of predictors such as tests, interviews, information on the application form and so on. In order to take into account the combined effect of a number of predictors, one of the four general multiple prediction models is used.

These four models are discussed below:

i. Profile matching:

This is a rather simple method. A profile of a typically successful employee is developed on the various predictors which measure job success. The procedures entail administering various predictors on known successful employees of a given level and job. Their average scores on these predictors are calculated, and these are then used as a standard to judge the scores of applicants on the same predictors. The assumption here is that while developing the ideal profile, predictors have been tested for their reliability and validity.

To compare profiles, two methods are used. In both these methods, it is not necessary that the profile of the potential applicant should be exactly the same or above average of various predictors. The important consideration is the closeness of profile-points. The first method is coefficient of correlation, where

the averages on ideal profiles are correlated with the scores on various predictors of an applicant. The degree of coefficient indicates the degree of closeness. The other method computes similarity or dissimilarity by taking the differences (D) between ideal and obtained scores on each predictor, squaring them, and then adding them to get an index of similarity. The value of D is squared to get rid of the signs. The larger the value of addition, the greater the dissimilarity, and vice versa.

ii. Multiple cut-off:

In the profile-matching model, it is not necessary that an applicant should have scores at or above the ideal averages on the predictors. A proximity to ideal profile is preferred. This means an applicant can have less or more than the ideal average. In the multiple cut-off model, a cut-off point is established separately for each predictor. Unless an applicant scores above the cut-off point on all predictors, he will not be considered for selection. The cut-off point is usually determined through trial and error. Usually it is the performance of successful employees on predictors that forms the initial basis for determining the cut-off point. However, continuous review and up-dating is a necessary condition in this model.

iii. Multiple regression:

In the multiple cut-off model, a minimum score is required on all the predictors. This model does not provide a single score for each applicant though this would make it simple. A simple addition of scores for each one who is above all the minimum cut-off scores, does not help in ranking them in the order of merit. Two applicants might have the same total scores but differ on the extent on each one of the predictors. This makes the process of selection more cumbersome.

The multiple regression model takes into account some of these problems. It utilizes the statistical method of multiple regression, where the relative contribution of various input factors to output is determined. For example, a personnel manager is faced with the problem of determining which of the several predictors contributes most in predicting successful performance on-the-job. He runs a regression model where he feeds information on job performance, and the performance on several predictors. The method gives him the relative contribution of each of the various predictors to job performance.

This model assumes that each predictor is linearly related to criterion, and that the predictors have compensatory powers. That is, a high score on one predictor may compensate for a low score on ~~an~~ another. It has mathematical elegance and provides a single score for each applicant. Computers help enormously in making calculations in a short time and also avoid the possibility of error in calculations. For the design and procedure of multiple regression model, the reader is referred to two standard text books on statistics.¹

iv. Multiple hurdle:

This model has some elements of the multiple cut-off model. The important difference is that in the multiple cut-off model, the decision is "one shot" in the sense that if an applicant has secured points above the minimum cut-off score in all the predictors, he can be for selection. In the multiple hurdle model it score above the given minimum score on a predictor before he is considered for the next stage. Thus each stage is a hurdle that he must clear to reach the final stage where he is considered for selection. Most companies use a preliminary screening device, which are usually tests of de-selection or marks in the previous examination. Those who qualify in this are called for an interview. The multiple hurdle model thus represents a sequential selection situation.

1. W.L.Hays, *Statistics*, Rinehart, Wiston and Holt, New York, 1963.; J.B.Winer, *Statistical Principles in Experimental Design*, McGraw-Hill, New York, 1962.

tentative inferences about his suitability for employment. Many types of application forms--sometimes very long and comprehensive and sometimes brief-- are used. Information is generally called on the following items:

a. Biographical data:

Name, Father's name, date and place of birth, age, sex, nationality, height, weight, identification marks, physical disability, if any, marital status and number of dependants.

b. Educational Attainment:

Education (subjects offered and grades secured), Training acquired in special fields and knowledge gained from professional/technical institutes or evening classes or through correspondence courses.

c. Work Experience:

Previous experience, the number of jobs held with the same or other employers, including the nature of duties, and responsibilities and the duration of various assignments, salary received, grades, and reasons for leaving the present employer.

d. Salary:

Salary demanded and other benefits expected.

e. Personal Items:

Association memberships, of NCC or NSS, extra-curricular activities, sports, hobbies, and any other pertinent information supporting a candidate's suitability for a post.

f. Other Items:

Names and addresses of previous employers, references, etc.

An application blank is a brief history sheet of an employee's background and can be used for future reference, in case of need.

The data submitted in an application form should help predict the candidate's chances for making a success of his job. The information sought in it should be relevant to the objective of selection. To ensure that the information given by the applicant is true, the application blank usually carries a threat of discharge at any time after employment if the information furnished in it proves to be false.

The questions included in an application blank should be such as are valid and necessary. Superfluous questions should be avoided. They should not by their wording or nature, encourage dishonest answers. In brief, an application form should be complete enough to relieve the interviewer of the burden of recording considerable factual data.

ii. Selection tests:

According to Wendell, tests are used in business for three primary purposes.¹

- a. For the selection and placement of new employees;
- b. For appraising employees for promotional potentials; and
- c. For counselling employees. If properly used, psychological tests can be of paramount importance for each of these purposes.

According to Meyer and Bertottle, candidates are judged on the basis of their physical characteristics, their abilities and skills, their interests and personality traits.

MEASURES OF HUMAN CHARACTERISTICS

	----	Height
	--	Weight
Physical Characteristic	--	Senses
	--	Visual Activity
	--	Hearing
	--	Dexterity
	--	Mathematical ability
Abilities and Skills	--	Verbal ability
	--	Intelligence
	--	Clerical skills
	--	Mechanical aptitudes
Interests	--	Scientific Interests
	--	Economic interests
	--	Cultural interests
	--	Cultural interterests
	--	Sociality
	--	Dominance
Personality Traits	--	Cooperativeness
	--	Tolerance
	--	Emotional Stability

 1. French, Wendell, The Personnel Management Process, 1970, pp.231.

Attributes and Characteristics of tests:**a. Assumption:**

The use of tests is based on the assumption that no two persons are equal so far as intelligence, skills, aptitudes and personality are concerned. The different attributes of the individual are revealed when tests are used.

Further, people possessing varying skills or other attributes perform differently on a job.

b. Validity:

Validity refers to the extent to which a test measures what it is designed to measure. A typing or short-hand test, for example should accurately measure a person's ability to type or take dictation. Validity may be of three kinds, viz., predictive validity, concurrent validity and synthetic validity.

Predictive Validity refers to a test which is predictive of, or significantly correlated with, some elements of the work behaviour which are required of a person if he is to perform successfully the job for which he is being tested. For selection purposes, predictive validity is a better measure of the utility of a test.

By Concurrent Validity we mean the extent to which test scores correlate with the variance in a criterion measure

presently available. For example, how scores on a typing-skill test will correlate with the performance of typists presently on the job.

Synthetic Validity refers to the validation of a set of tests for a specific job or jobs by an analysis of the jobs to identify the elements involved, the selection of a series of tests which have proved to be valid for measuring elements, and the combination of these validities into a single validity.

c. Reliability:

It refers to a test which is consistent in its measuring ability. In other words, if a person takes the test today and then after a month, his score should be approximately the same. In order that a test should be useful for selection purposes, it must not only be valid but also reliable.

The basic assumption underlying the use of tests in personnel selection is that individuals are ~~2~~ different in their job-related abilities and skills, and that these skills can be adequately and accurately measured for comparison. Since many human abilities are complex and interrelated, they have to be understood in association with each other. For example, in a test of numerical ability, the testee has to grasp the relation between various data presented, and to deduce something new to reach an answer. Over and above all he should

be able to read and comprehend the question. Hence a test of numerical ability would not measure this ability alone, but a class or group of abilities. Therefore, it is difficult to call an ability a unitary one. All tests, therefore are first psychological and then tests of specific abilities. That is why the common definition of a psychological test, is "that which is measured by the test."

A more scientific definition is: "psychological tests are essentially an objective and standardized measure of a sample of behaviour." The following three constructs in this definition will be closely scrutinized to comprehend the meaning fully.

"Objective" in this definition refers to the validity and reliability of measuring instruments. It also means the job relatedness of the test. This is the most crucial issue and in some respects the crux of the whole testing movement. Each employer has the moral (in some countries) legal obligation to show that his selection standards/tools are job related. In particular, employers who use psychological tests should have data to show that the test is predictive of or significantly correlated with important aspects of role behaviour relevant to the job for which the candidate is being evaluated. In addition, objectivity refers to equality of opportunity for those taking the test. It should not discriminate against caste, creed, sex and other factors.

In India, Unfortunately, psychological tests have not been developed for use in ~~ix~~ industry. A few organisations are using these tests. But they are mainly used as a "rejection" device. Tests are used without ensuring their validity. Before using any test as a psychological test one has to be sure of its validity i.e. whether it serves the purpose which it intends to serve. And this validity can be found out by actually trying out a test along with other selection devices and finding out for ourselves whether the tests are really making a discrimination between a potential success and a potential failure. Unless we are sure of the validity of a test, we are using the test as a rejection device. It is easier to use a test in this way. It does not require any elaborate development programme. Depending upon the whims and fancies of the "psychologist" one can use any test for the purposes of rejecting candidates. After all any test will give you a ranking of the candidates. And you can reject the candidates who scores below a certain limit on these tests. Such a task is effortlessly achieved and the managements also have a satisfaction of using psychological tests in their selection procedure. ~~this, text~~ This is a wrong use of psychological tests.

iii. Interview:

Interview is often regarded as an indispensable tool in any selection procedure. No doubt, it is the most extensively used selection device. But one has to be aware of the scope and limitations of such a tool. Only after we have become aware of these can we make a more effective use of this technique.

Firmly established in the first place and highly unlikely to fall from this rank, the interview, of all selection techniques has been the most researched and carefully documented method. Research studies have been carried out on such aspects of interviews as the physical setting, the questions asked, and process, validity and reliability measures. Data from a 1930' survey of 236 firms, and a 1957 survey of 852 firms, in USA support the universality of interviews.¹ The first survey reveals that 94 per cent of firms used the interview method. In the second survey, the percentage shot up to 99 per cent. Similar figures are not available for Indian firms.

The interview consists of interaction between interviewer and applicant. If handled properly, it can be a powerful technique in achieving accurate information and getting

1. W.R.Spiegel and V.A.James, "Trends in Recruitment and selection Practices.", Personnel, 1958, pp.52-58.

access to material otherwise unavailable. If the interview is not handled carefully, it can be a source of bias, restricting or distorting the flow of communication.

Four kinds of interviews for selection have been identified.

Those are:

1. Preliminary Interview:

These interviews are preliminary screening of applicants to decide whether a more detailed interview will be worthwhile. The applicant is given job details during the interview to afford him freedom to decide whether the job will suit him. It is argued that preliminary interviews are unsatisfactory, first because they might lead to the elimination of many desirable candidates, and second, because interviewers may not have much experience in evaluating candidates. The only argument for this method is that it saves the company's time and money.

2. Stress Interview:

Stress interviews are deliberate attempts to create pressure to observe how an applicant performs under stress. Methods used to include stress range from frequent interruptions and criticisms of an applicant's opinion, to keeping silent for an extended period of time. The most important advantage of



the stress interview is that it helps to demonstrate important personality characteristics which would be difficult to observe in tension-free situations. However, stress-inducing must be done carefully by trained and skilled interviewers. Emotionally-disturbed persons should not be subjected to stress. It should not be done at the beginning of the interview because this can make it impossible to compare a candidate's customary behaviour with his behaviour under stress. The applicant should be given a chance to recover from the stress before he leaves.

3. Depth Interview:

Depth interviews cover the complete life history of the applicant and include such areas as the candidate's work experience, academic qualifications, health, interests, and hobbies. It is an excellent method for executive selection, performed by qualified personnel. It is however, costly and time consuming.

4. Patterned Interview:

Patterned interviews are a combination of direct and indirect questioning of the applicant. What is to be asked is already structured. The interviewer has certain clues and guidelines to areas which should be probed deeply. The interview also encourages the candidate to express the relevant information freely.

After the patterned interview is complete, the interviewer should evaluate the candidate on the basis of practical experience. McMurry and others have found that a successful evaluation of certain factors leads to accurate predictions of the candidate's suitability for a particular position. The factors are:

- a. basic character traits;
- b. motivation and
- c. emotional maturity.

One definite advantage of a patterned interview is that systematic and chronological information is obtained, and hence this yields itself to statistical analysis.

In short, interview is must for any industry as a selection tool. But in many situations we will be required to make use of the other selection tools as well (e.g. application blanks, tests and so on). In order to make this tool more effectively we may have to train the interviewers and they will also be required to prepare for the 'interviews'. The effectiveness of this tool can be increased if we are more considerable of the candidates.

In our country 'interviews' are not taken seriously by the management. Many a times interviewers are not even aware

of ~~that~~ qualities they are really looking for in the candidate or whether the questions they ask have anything to do with the qualities that they are looking for.

The final Selection Interview:

After the applicant is selected, it is advisable to sell the job to the applicant. He should be given an idea as to his future potential within the organisation. Good companies do this at the final selection interview. At this stage, many an interviewer forgets that once it is decided to select the applicant, it is an important job of the interviewer to sell the job and the company to the applicant. For example, in this interview, the interviewer can describe the company and its policies, the duties and responsibilities of the applicant as well as the opportunities available to him for future promotion. Although the interviewer need not enter into the intricacies of, for example, incentive compensation plans, he should highlight the favourable aspects of the job.

The Real Person:¹

In addition to the candidate's "technical" competence, the interviewer, must be equally concerned about the candidate's

1. Donald H. Sweet, The modern employment function, Addison-Wesley Publishing Co. Inc., ~~New York~~ Philippines, 1973, p.171.

personality, especially with regard to his relationships with the people for whom and with whom he will work. This aspect of the individual is the one most often overlooked or given only minimum attention. Most interviewing on this point consists of determining whether or not the person appears to be satisfactory in terms of his ability to get along with others. However, you should really be interested in finding out what he actually is rather than what he thinks he is or what he makes himself appear to be.

Individually, people have several different 'pictures' of themselves. The first, and most immediately observable, is what they want others to see. Another is the picture of what they think they are. Still another is the picture of what they would like to be--their ambitions, desires and hopes--and this internal picture is known only to themselves and is not communicated to others.

The most significant 'picture', the one that concerns is the one most difficult to ascertain--the picture of what the candidate really is. This is a picture often obscured by an individual in an effort to hide those parts of his temperament that he does not wish to admit to either himself or others. To fulfill the obligation of finding the person best suited for the job, the applicant's true 'self' must be determined as fully as possible.

iv. Physical Examination:

Physical examination as a selection tool can vary from the comprehensive to the nominal, depending upon the nature of the job. A comprehensive physical examination is necessary for manual jobs, and jobs for the physically handicapped.

A proper matching of job requirement with physical ability results in greater utilisation of manpower. In addition, a thorough check-up before confirmation prevents infection, particularly in ~~at~~ industrial settings where a large number of people spend eight hours together. Though seldom reported in literature, the most important function of physical examination is protecting companies from employees filing compensation claims for injuries and accidents caused by pre-existing ailments.

Though physical examinations, both preplacement and pre-employment, are generally conducted, they often fail to detect complicated diseases (firstly, they are cursory, and ¹⁴⁰secondly not enough is known about some ailments.) Hence, efforts should be directed towards safety. There are two other matters of concern. First, with growing automation, less physical strength will be required for jobs. Second, a sound physical condition~~x~~ is no guarantee against accidents. In other words,

~~What~~ what is the validity and reliability of this selection tool (incidentally, one does not find any validity study on physical examination in literature.) In the absence of any such data, concern for safety is of some importance.

C. SOME ISSUES ON PERSONNEL SELECTION:(INTERVIEWING):

Despite the almost universal use of the interview for selection, very little information is available on its reliability, and validity. Two comprehensive review of research studies on the interview have concluded that of the very few studies that have reported reliability and validity figures, a very small percentage reaches the conventional level of acceptance. There are tremendous difficulties in ascertaining the reliability and validity of interviews.

1. The most important issue is that of differentiating interview data from interviewers data. In most cases the validity assessed is his (Interviewer's) validity rather than that of interview information. There is enormous confusion because interview information is channelled through the interviewer. In the process one evaluates the interviewer's biases and responses instead of evaluating the interview per se. How the two can be separated is still intriguing.

2. Inconsistency and lack of standardisation in interviewers' behaviour can make a noticeable difference in the behaviour of interviewees. Highly structured interviews reduce this variability and permit little individuality. That is why their reliability is higher than that of other kinds of interview.

A related issue is the multiplicity of interviewers. If there is more than one interviewer, what is the validity of "team decisions" vis-a-vis their individual predictions and how does "team" validity relate to the individual's accuracy? Virtually no data are available on these questions.

3. There is great subjectivity in interviews. In fact most of the objective factors are assessed by tests and application blanks. Unreliable data is generated because of the "halo-effect" (tendency to rate the applicant higher on other traits if one trait is found desirable), and "leading questions" (questions that suggest answers and restrict testing of the applicant's knowledge). Much has to be done in training interviewers, though there are hardly any attempts at this.

4. The intellectual ability of the interviewer is related somewhat to the previous point. The interviewer should possess a level of intelligence which is at least equal to the interviewee's. Sheer glorification of the role is unethical because lack of maturity in decision-making can, and in fact, does affect applicants.
5. The length of the interview is important, Many interviews are of predetermined length due to an appointment schedule. One research that studied interviews in eight factories, worked out 10 minutes to be the average duration. It further reported that of the 10 minutes, 57 per cent was taken by the interviewer, 30 per cent by the applicant and the remaining 13 per cent was spent in silence. What effect the length of the interview has and how much it contributes to its validity and reliability is not known.
6. An interview is an interaction between two people. The interviewee is as much entitled to know about the job and his suitability to it as the interviewer. No data on how much information is given to the applicant is available.
7. Qualitative interview data are as difficult to translate into quantitative scales as application blanks data. How

can we know that quantification paints the same picture as verbal description?

8. It is maintained that it will be undesirable to have a ~~x~~ very valid and reliable interview because it would necessarily restrict the information-gathering ability of the interviewer. A demand for a valid and reliable interview will defeat the very purpose and definition of it, i.e., the interviewer would be more concerned with the technicalities rather than trying to find out the characteristics of the applicant and his suitability for the job, which can be done only if there is flexibility in understanding rather than a concern for procedure. Some thought must be given to this issue.

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