Selection Tests in industrial sector
Mali Archana Jayant
Mamasaheb Mohol college,
Paud Road Pune-38

Abstract
In industrial sector various types of recruitments are done with the help of various using various selection tests. Each candidate has to face these tests. These tests may be informed of written test, physical test, interviews, etc. Now days industries uses these tests and select the candidate. According to the nature of the job the tests are used by the industries. Employee has to do the work with the mental and physical sound mind. For the checking quality, skill, mental ability, physical ability of the employee these tests are used. After getting the result of the tests then candidates are selected by the industries. Each and every candidate has idea about these types of tests. But how these tests are used by the industries? This idea they didn’t get easily. This research paper focuses on various selection tests used by the industrial sector. For which type of the job which test will be used by the industries? It is discussed in this research paper. This research paper gives origin of the selection tests, Uses of the tests, Types of the selection tests used by the industries, analysis of the tests, validation of the tests, etc.

Introduction
In industrial sector there are various types of work doing. For doing that type of work employees as well as officers are suffering mental, emotional or physical stress. For analysis these types of stress various types of tests are used. These tests are used for analyzing various reasons of stress and it also gives us solutions for minimize the stress

Industrial/organizational psychology is the application or extension of psychological methods and principles to the solution of organizational and workplace problems. Most commonly, psychology is concerned with those problems caused by human performance and those which affect human performance within organizational contexts. Specifically, this entails, among other things,

I/O psychologists employ psychological measurement and research findings related to human abilities, motivation, perception, and learning in seeking to improve the fit between the needs of the work organization and those of the people who populate it.

Normally training in I/O psychology requires a master's degree or Ph.D. Practitioners may also be affiliated with one or more professional associations for the field. The Society for Industrial-Organizational Psychology (STOP), the major professional organization which represents psychologists and a division of the American Psychological Association, had about 2,000 members as of 1999.

Origin
I/O psychology has its roots in the late 19th century movement to study and measure human capabilities and motives. In response to the urging of some advertising executives, one such early psychologist, Walter Dill Scott, The Theory of Advertising (1903), generally considered to be the first book linking psychology and the business world. When the United States entered World War I in 1917, applied psychology truly came into its own. Committees of psychologists investigated soldier morale, motivation, and the prevalence of psychological impairment. Moreover, psychologists developed a group-administered intelligence test called the Army Alpha. While 1,726,000 enlisted men and officers were tested, little use was made of the results at the time since the war ended a mere three months after the testing
program was authorized. However, research studies did show that the test scores were related to soldier performance.

After the war, in 1919, the first university-based center for studying the applications of psychology to business was established at the Carnegie Institute of Technology. Called the U.S. Bureau of Salesmanship Research, it was funded largely by the life insurance industry for the purpose of conducting research for the selection and development of clerical and executive personnel as well as sales people.

Uses of psychological tests
1. Job Analysis
2. Criterion Development
3. Performance Evaluation
4. Personal Selection
5. Personal Interview
6. Paper and pencil Tests and Questionnaires
7. Work sample, Simulation and Assessment
8. Letters of Recommendation
9. Recruitment
10. Training

Selection Tests
There are a variety of selection tests. They range from unstructured interviews to structured personality tests. The main goal of these tests is to predict job performance. Each test has its own relative strengths and weaknesses in this regard. Recruitment and selection tests are only part of the selection process and you will still be asked to complete an application form, send in a copy of your resume and attend at least one interview. All of these things will tell the employer something about you and help them to choose the most appropriate candidate for the vacancy.

Types of Selection Tests
1. Job Interview
   A very commonly employed selection test is a job interview. Job interviews can be structured interview or unstructured interview.
   a) unstructured interview,
      In unstructured interview the interviewer engages in dialogue with the interviewee that does not follow a predetermined format, questions may vary from applicant to applicant, and there is usually no standardized scoring method. Consequently, validating this technique as a job performance predictor is quite difficult (One applicant may have the opportunity to respond favorably to a question that was not asked of another or vice versa).
   b) structured interview
      in a structured interview all applicants are judged on responses to the same questions asked in the same format. Structured interviews provide for more reliable and consistent scoring results.

2. Personality Tests
   Another tool used for selection is personality testing. Many personality tests now employ the five factor model of personality (FFM). These factors are conscientiousness, extraversion, neuroticism, agreeableness, and openness. A short description of each factor is listed below:
   - **Neuroticism**: a tendency to easily experience unpleasant emotions
   - **Extraversion**: a tendency to seek stimulation and the company of others
   - **Agreeableness**: a tendency to be compassionate rather than antagonistic about others
   - **Conscientiousness**: a tendency to show self-discipline, act dutiful,
and aim for achievement and competence

- **Openness to experience**: a tendency to enjoy new intellectual experiences and ideas

Of all the factors, conscientiousness has been found to positively correlate most with job performance ratings. This factor is highly related to self-discipline, attention to detail, and organization.

3. **Aptitude and ability tests**

Aptitude and ability tests are designed to assess your intellectual performance. These types of test can be broadly classified onto the groups shown and you may be asked to sit a test which consists only of ‘numerical’ questions or these may form part of a test which consists of questions of different types.

![Aptitude & Ability Tests Diagram]

This will depend very much on the job you are applying for. For example, jobs that require you to handle figures on a day to day basis may have a higher proportion of numerical reasoning questions, whereas tests used for information technology jobs tend to have a higher proportion of abstract reasoning questions.

4. **Mental ability tests**

**Mental ability tests** measure intelligence and are the best predictor job performance in all jobs and all organizations

- **a) Crystalized Intelligence** relates to the ability of a person to use prior knowledge through learned processes to solve problems.
- **b) Fluid Intelligence** relates to a person's ability to solve a new problem utilizing novel or unlearned strategies. Employers employ both types of intelligence testing for varying job demands.
- **c) Emotional intelligence** is used to predict job performance. This information is gained through emotional intelligence testing. Emotional intelligence is the ability to recognize and control the emotions of oneself and others. This is a relatively new area being studied for predicting job satisfaction.

5. **Bio data Technique**

The next testing technique is the **bio data** technique. Bio data uses personal background information to predict job performance. The type of information is job history, family history, gender, and things of that sort. These factors are then derived empirically instead of theoretically like other selection tests.

6. **Psychomotor ability** tests.

An area of selection testing that relates to motor skills are psychomotor ability tests. These tests measure fine motor skills and hand-eye coordination. These skills are important in jobs like carpentry where the worker needs to have
control over a hammer to hit a small nail. Unlike psychomotor ability tests, physical ability tests measure gross motor skills, such as lifting and running. These skills are important in jobs like construction where strength is an important aspect.

7. **Work Sample**

Another selection test technique is taking a work sample of an applicant. During a work sample, an applicant completes a realistic job task. These tasks are highly realistic and are supposed to simulate the actual job one is applying for. One example of a work sample is a driver's test. During a driver's test simulates realistic driving. The goal is to assess how well an applicant can perform the tasks, or how well an applicant can learn the task.

8. **Assessment centers.**

Tasks are also performed when an employee or applicant visits an assessment centers. These centers are used to assess applicants potential for high-level jobs. The testing takes multiple days and is costly to the organization providing the assessment and that is why it is seldom used for jobs other then those of high-level. The assessment consists of a battery of psychological tests.

a) One example of a psychological test given is the **leaderless group exercise**, where a group is given a task to complete without a leader this task is testing if any of the applicants will take the role of leader, thus showing leadership skills.

b) Another exercise completed at an assessment center is a **role-playing exercise**. In these exercises applicants are asked to take a role in a job-related situation in order to study how well the applicants handle the situation.

c) Another example of a psychological test is the **in-basket exercise**. In this exercise, applicants have a number of jobs in a "basket" that need to be completed in an allotted time. Each job has requirements in order to complete and they take a certain set amount of time to complete. This tests the organizational ability of applicants, how well applicants work together, leadership, among other things.

9. **Situational Judgment Test.**

Like the role playing task in assessment centers, another selection test is the situational judgment test. This test is a paper and pencil test where a participant is presented with a hypothetical situation and asked to write what they would do in that situation.

10. **Job Knowledge Test**

Unlike hypothetical situations, often, jobs require knowledge of the job. The job knowledge test is used for that purpose. These tests measure how much knowledge a person has in the field they want to work in. An example of this is the State Medical Board test that needs to be taken before a person can practice medicine in a state. Another example are certification tests, such as the A+ Certification test for people who wish to show they have basic hardware and software computer knowledge.

11. **vocational interest tests**

Often times, people need help making decisions about their
career. Occupational counselors use vocational interest tests in order to help guide career decisions. These tests measure different occupational interests.

12. Mental Illness Test
The last type of selection test is tests of mental illness. These tests measure if a person has a mental illness. However, due to the American’s with Disabilities Act (ADA) they are illegal to give to job applicants. This is because it mental illness is considered a disability, and even if a person has one, it does not mean they cannot perform the job. If they can perform the job, then, in spite of their disability, the ADA protects them.

Analysis Of Selection Tests
Whichever type of test you are given, the questions are almost always presented in multiple-choice format and have definite correct and incorrect answers. As you proceed through the test, the questions may become more difficult and you will usually find that there are more questions than you can comfortably complete in the time allowed. Very few people manage to finish these tests and the object is simply to give as many correct answers as you can.

Validating Employee Selection Tests
In order to use a selection test with confidence it must be validated. This validation process is important because it builds validity and reliability for using the test for a specific job. For example, if a fast food restaurant called Gopher Burger creates a selection test for employees by putting together a series of questions like "What is your favorite color?" it would have no basis for job performance theoretically nor empirically.

In order to establish validity in the select tests first, a job analysis must be conducted. A job analysis is a study that is used to
determine the important tasks and skills needed for a specific job. In our example about Gopher Burger, the test creators would start brainstorming about what skills a cook needs in the restaurant, such as manual dexterity for flipping the burgers, keen memory for remembering what goes on the burgers, and speed to make the food quickly.

The next step is to create a rudimentary test from the job analysis. These tests should then be administered to the employees or applicants. Then, predictive and concurrent validation would be calculated. The measures for the validation studies would be gotten from ratings (subjective measures) or objective measures. In Gopher Burger, an example of an objective measure would be the number of burgers the applicant can make it an hour; whereas, ratings can be gained from a supervisors observation of the applicant.

After the validation studies are complete, the test should be revised until validity and reliability are statistically significant in order to accurately predict job performance from the test.

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