

Organisational behaviour is based on the knowledge generated through systematic researches over a period of time. Prior to systematic researches, various management practitioners also tried to find out answers of the problems involved in the complexity of human behaviour in organisations. However, such attempts have been mostly in the area of human behaviour planning, designing of organisation structure, and controlling of human behaviour in organisations. With the result, these attempts have led to the development of structural approaches of organisations and have missed the significant aspects of analysing human behaviour in organisations. Such approaches have been in the form of scientific management and administrative theory. The real beginning of researches in the area of human behaviour in organisations was made by Hawthorne Experiments. These experiments were followed by various researches in the area. Therefore, before going through the discussion of foundations of organisational behaviour in the form of Hawthorne Experiments and other researches, it will be desirable to go through the background of organisational behaviour as provided by scientific management and administrative theory, particularly Fayol's administrative management and bureaucracy.

Scientific Management

The concept of scientific management was introduced by Frederick Winslow Taylor in USA at the beginning of 20th century. This concept was further carried on by Frank and Lillian Gilbreth, Henry Gantt, George Berth, Edward Felen, etc. Scientific management was concerned essentially with improving the operational efficiency at the shop floor level. Taylor has defined scientific management as follows:

"Scientific management is concerned with knowing exactly what you want men to do and then see in that they do it in the best and cheapest way."¹

Since Taylor has put the emphasis on solving managerial problems in a scientific way, often, he is called as father of scientific management and his contributions as the principles of scientific management. Though his contributions have become traditional in present-day context, still the label scientific management is used for his contributions. It does not mean that present-day management thoughts and practices are not scientific. In fact, management as a science has been taken much later than the contributions of Taylor: Taylor's contributions can be described in two parts: elements and tools of scientific management and principles of scientific management.

Elements and Tools of Scientific Management

Taylor conducted various experiments at his workplaces to find out how human beings could be made more efficient by standardising the work and better method of doing the work. These experiments have provided the following features of scientific management:

1. Separation of Planning and Doing. Taylor emphasised the separation of planning aspect from actual doing of the work. Before Taylor's scientific management, a worker used to plan about how he had to work and what instruments were necessary for that. The worker was working under the supervision of a supervisor commonly known as gang boss. Thus, supervisor's job was merely to see how the workers were performing. This was creating a lot of problems. Taylor emphasised that planning should be left to the supervisor and the worker should emphasise only operational work.

2. Functional Foremanship. Separation of planning from doing resulted into development of supervision system which could take planning work adequately besides keeping supervision

¹Frederick W. Taylor, *Scientific Management*, New York: Harper Brothers, 1911.

on workers. For this purpose, Taylor evolved the concept of functional foremanship based on specialisation of functions. In this system, eight persons are involved to direct the activities of workers. Out of these, four persons are concerned with planning: (i) route clerk, (ii) instruction card clerk, (iii) time and cost clerk, (iv) disciplinarian. The remaining four persons are concerned with doing aspect of the work. These are: (i) speed boss, (ii) inspector, (iii) maintenance foreman, and (iv) gang boss. All of them give directions to workers on different aspects of work. This is against unity of command principle as shown in Figure 2.1.

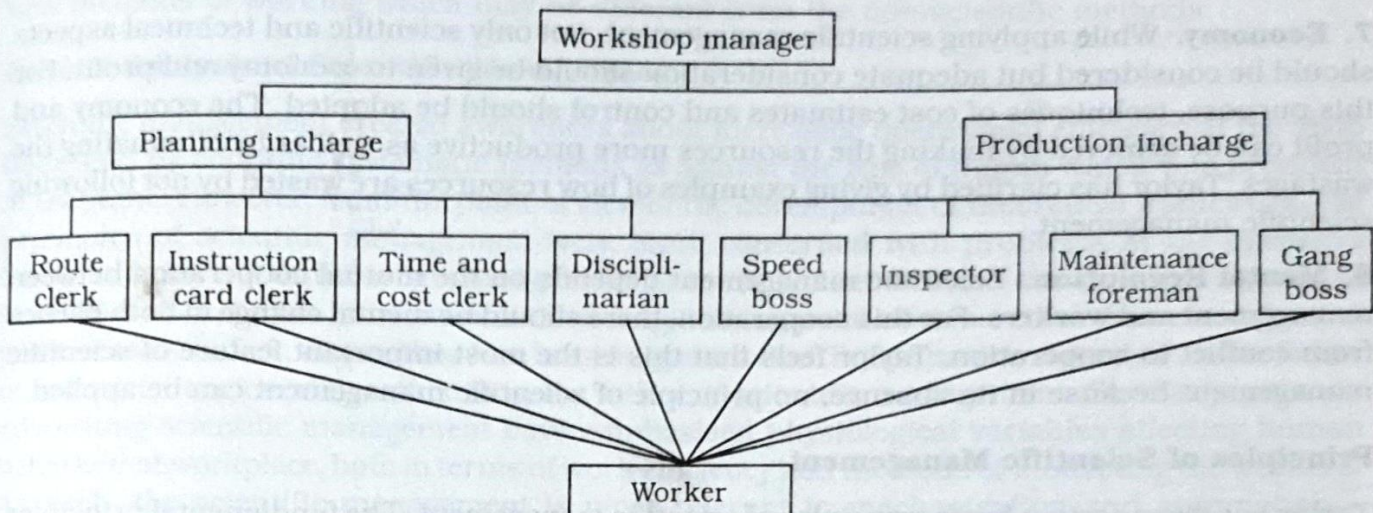


FIGURE 2.1: Functional foremanship

3. Job Analysis. Job analysis is undertaken to find out the one best way of doing the thing. The best way of doing a job is one which requires the least movements, consequently less time and cost. The best way of doing the thing can be determined by taking up time-motion-fatigue studies. (i) Time study involves the determination of time a movement takes to complete. The movement which takes minimum time is the best one. This helps in fixing the fair work for a period. (ii) Motion study involves the study of movements in parts which are involved in doing a job and thereby eliminating the wasteful movements and performing only necessary movements. Elimination of unnecessary movements in doing work reduces time taken in performing a work and also the fatigue of workers. (iii) Fatigue study shows the amount and frequency of rest required in completing the work. After a certain period of time, workers feel fatigue and cannot work with full capacity. Therefore, they require rest in between. When the rest is allowed, they start working with full capacity. Thus, job analysis, as given by Taylor, suggests the fair amount of a day's work requiring certain movements and rest periods to complete it.

4. Standardisation. As far as possible, standardisation should be maintained in respect of instruments and tools, period of work, amount of work, working conditions, cost of production, etc. These things should be fixed in advance on the basis of job analysis and various elements of costs that go in performing a work.

5. Scientific Selection and Training of Workers. Taylor has suggested that workers should be selected on scientific basis taking into account their education, work experience, aptitude, physical strength, etc. A worker should be given work for which he is physically and technically most suitable. Apart from selection, proper emphasis should be given on the training of workers which makes them more efficient and effective.

6. Financial Incentives. Financial incentives can motivate workers to put in their maximum efforts. If provisions exist to earn higher wages by putting in extra effort, workers will be motivated to earn more. Taylor himself applied the concept of *differential piece rate system*

which was highly motivating. According to this scheme, a worker who completes the normal work gets wages at higher rate per piece and one who does not complete gets at lower rate. Thus, there is considerable difference in wages between those who complete the work and those who do not complete. To make the differential piece rate system work, Taylor has suggested that wages should be based on individual performance and not on the position which he occupies. Further, the wage rate should be fixed on accurate knowledge and not on estimates.

7. Economy. While applying scientific management, not only scientific and technical aspects should be considered but adequate consideration should be given to economy and profit. For this purpose, techniques of cost estimates and control should be adopted. The economy and profit can be achieved by making the resources more productive as well as by eliminating the wastages. Taylor has clarified by giving examples of how resources are wasted by not following scientific management.

8. Mental Revolution. Scientific management depends on the mutual cooperation between management and workers. For this cooperation, there should be mental change in both parties from conflict to cooperation. Taylor feels that this is the most important feature of scientific management because in its absence, no principle of scientific management can be applied.

Principles of Scientific Management

Taylor has given certain basic principles of scientific management. The fundamental principles that Taylor saw underlying the scientific management are given below:

1. Replacing Rule of Thumb with Science. Taylor has emphasised that in scientific management, organised knowledge should be applied which will replace rule of thumb. While the use of scientific method denotes precision in determining any aspect of work, rule of thumb emphasises estimation. Since exactness of various aspects of work like day's fair work, standardisation in work, differential piece rate for payment, etc., is the basic core of scientific management, it is essential that all these are measured precisely and should not be based on mere estimates. This approach can be adopted in all aspects of managing.

2. Harmony in Group Action. Taylor has emphasised that attempts should be made to obtain harmony in group action rather than discord. Group harmony suggests that there should be mutual give and take situation and proper understanding so that group as a whole contributes to the maximum.

3. Cooperation. Scientific management involves achieving cooperation rather than chaotic individualism. Scientific management is based on mutual confidence, cooperation, and goodwill. Cooperation between management and workers can be developed through mutual understanding and a change in thinking. Taylor has suggested "substitution of war for peace, hearty and brotherly cooperation for contentment and strife, replacement of suspicious watchfulness with mutual confidence, of becoming friends instead of enemies. It is along this line, I say, that scientific management must be developed."

4. Maximum Output. Scientific management involves continuous increase in production and productivity instead of restricted production either by management or by workers. Taylor hated inefficiency and deliberate curtailment of production. His concern was with the large size of the cake. In his opinion, "there is hardly any worse crime to my mind than that of deliberately restricting output." He decried quarrel over production but welcomed quarrel over distribution, provided the product to be distributed had outgrown the size. Therefore, he advised the management and workers to "turn their attention towards increasing the size of

the surplus until the size of the surplus becomes so large that it is necessary to quarrel over how it shall be divided."

5. Development of Workers. In scientific management, all workers should be developed to the fullest extent possible for their own and for the company's highest prosperity. Development of workers requires their scientific selection and providing them training at the workplace. Training should be provided to workers to keep them fully fit according to the requirement of new methods of working which may be different from the non-scientific methods.

Critical Analysis of Scientific Management

Scientific management created awareness about increasing operational efficiency at the shop floor level by adopting systematic methods as against the rule of thumb which was prevalent at that time. However, from the point of view of the development of theoretical framework, the principles of scientific management were more concerned with problems at the operative levels and did not emphasise management of an organisation from the manager's point of view. Therefore, it was more relevant from engineering point of view rather than management point of view. In fact, one author has later suggested that Taylor can be regarded as the father of industrial engineering rather than the father of scientific management. Similarly, persons advocating scientific management have emphasised physiological variables affecting human behaviour at workplace, both in terms of work efficiency and methods of motivating the workers. As such, the scientific management is more relevant to mechanisation and automation—technical aspect of efficiency—than the broader aspects of management of an organisation.

Apart from the theoretical considerations, Taylor's scientific management was opposed by trade unions, industrialists, and general public. The opposition was so grave that Taylor had to defend his scientific management before a special US Congressional Committee in 1912. The introduction of scientific management led to the agitation by trade unions in different production units. The major reasons for the opposition of scientific management were as follows:

1. There were many of the followers of Taylor who took aggressive mechanical view of production and sidelined human aspect at the workplace. This created aggressive attitudes among workers.
2. The work used to be performed under close and strict supervision based on authoritarian approach. Workers were not allowed to raise their voice even for genuine grievances.
3. There was lack of scientific standardisation of work and whatever standards used to be set by the management, the workers had to follow strictly. Such standards often used to raise production norm without taking into consideration the factors affecting such a norm.
4. The most crucial element which was under contention was the differential piece rate system. The workers, even the efficient ones, and their unions, opposed this system on the plea that it was a new method of exploiting workers by the industrialists. It may be mentioned that trade unions were quite popular at that time.

Fayol's Administrative Management

Henry Fayol, a French industrialist, looked at the problems of managing an organisation from top management point of view. He has used the term 'administration' instead of 'management' emphasising that there is unity of science of administration. He has divided his approach of studying management into three parts: (1) managerial qualities (physical, mental, moral,