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### **Hawthorne studies**

F.W. Taylor through his analyses expanded creation by supporting it. Elton Mayo and his adherents tried to build creation by acculturating it through behavioural examinations prominently known as Hawthorne Experiments/Studies. The reality remains that an introduction to the investigation of authoritative conduct will stay inadequate without a say of Hawthorne thinks about/tests.

In November 1924, a group of scientist teachers from the eminent Harvard Business School of the U.S.A. started researching into the human parts of work and working condition at the Hawthorne plant of Western Electric Company, Chicago. The organization was delivering ringers and other electric types of gear for phone industry. Conspicuous teachers incorporated into the exploration group were Elton Mayo (Psychologist), Roethlisberger and Whitehead (Sociologists) and William Dickson (organization delegate). The group led four separate exploratory and behavioural investigations over a seven-year time span.

The Hawthorne tests were pivotal examinations in human relations that were conducted during, 1924 and 1932 at Western Electric Company's Hawthorne Works in Chicago. Initially planned as enlightenment concentrates to decide the connection amongst lighting and efficiency, the underlying tests were supported by the National Research Council (NRC) of the National Academy of Sciences. In 1927 an examination group from the Harvard Business School was

welcome to join the investigations after the brightening tests drew unexpected outcomes. Two other arrangements of tests, the transfer get together tests, and the bank-wiring tests took after the enlightenment tests. The investigations accepted the name Hawthorne tests or concentrate from the area of the Western Electric plant. Finished up by 1932, the Hawthorne ponders, with accentuation on another elucidation of gathering conduct, where the reason for the school of human relations.

Some of the major phases of Hawthorne experiments are as follows:

1. IlluminationExperiments

2. Relay Assembly Test RoomExperiments

3. Mass InterviewingProgram

4. Bank Wiring Observation RoomExperiment.

1. Experiments to determine the effects of changes in illumination on productivity, illumination experiments,1924-27.

2. Experiments to determine the effects of changes in hours and other working conditions on productivity, relay assembly test room experiments,1927-28;

3. Conducting plant-wide interviews to determine worker attitudes and sentiments, mass interviewing program, 1928-30;and

4. Determination and analysis of social organization at work, bank wiring observation room experiments,1931-32.

**1. IlluminationExperiments:**

*Enlightenment tests were embraced to discover how fluctuating levels of brightening ( a measure of light at the work environment, a physical element) influenced the efficiency. The speculation was that with higher brightening, efficiency would increment. In the first arrangement of tests, a gathering of specialists was picked and set in two separate groups. One gathering was presented to fluctuating forces of brightening. Since this gathering was subjected to test transforms, it was named as test convention. Another forum, called as control gathering, kept on working under steady powers of enlightenment. The scientists found that as they expanded the knowledge in the exploratory gathering, both gatherings expanded generation. At the point when the power of enlightenment diminished, the generation kept on expanding in both the gatherings.*

*The creation of the test assembles diminished just when the light was diminished to the level of moonlight. The decline was because of light falling much beneath the ordinary level. Along these lines, it was reasoned that enlightenment did not have any impact on profitability but rather something else was meddling with the efficiency. Around then, it was supposed that human calculates critical deciding profitability however which perspective was influencing, it didn't know. Along these lines, another period of trials was embraced.*

## **2. Relay Assembly Test Room Experiments:**

Relay assembly test room experiments were designed to determine the effect of changes in various job conditions on group productivity as the illumination experiments could not establish a relationship between the intensity of light and production. For this purpose, the researchers set up a relay assembly test room two girls were chosen. These girls were asked to choose for more girls as co-workers. The work is related to the assembly of telephone relays. Each relay consisted of some parts which girls assembled into finished products. Output depended on the speed and continuity with which girls worked. The experiments started with introducing numerous changes in sequence with duration of each change ranging from four to twelve weeks. An observer was associated with girls to supervise their work. Before each change was introduced, the girls were consulted. They were given the opportunity to express their viewpoints and concerns to the supervisor. In some cases, they were allowed to take decisions on matters concerning them.

### **Following were the changes and resultant outcomes:**

1. The incentive system has been modified so that each girl's extra pay was based on the other five rather than the output of larger group, say, 100 workers or so. The productivity increase as compared to before.
2. Two five-minute rests one in the morning session and other in evening session were introduced which were increased to ten minutes. The productivity increased.

3. The rest period was reduced to five minutes, but the frequency was increased. The productivity decreased slightly, and the girls complained that frequent rest intervals affected the rhythm of the work.

4. The number of rest was reduced to two of ten minutes of each, but in the morning, coffee or soup was served along with the sandwich, and in the evening, snack was provided. The productivity increased.

5. Changes in working hours and workday were introduced, such as cutting an hour off the end of the day and eliminating Saturday work. The girls were allowed to leave at 4.30 p.m. instead of usual 5.00 p.m. and later at 4.00 p.m. productivity increased.

As each change was introduced, absenteeism decreased, morale improved, and less supervision was required. It was assumed that these positive factors were there because of the various factors being adjusted and making them more confident. At this time, the researchers decided to revert to an original position, that is, no rest and other benefits. Surprisingly, productivity increased further instead of going down. This development caused a considerable amount of redirection in thinking, and the result implied that productivity increased not because of positive changes in physical factors but because of the change in girls' attitudes towards work and their workgroup. They developed a feeling of stability and a sense of belonging. Since there was more freedom of work, they developed a sense of responsibility and self-discipline. The relationship between supervisor and workers became close and friendly.

### ***3. Mass Interviewing Program:***

During experiments, about 20,000 interviews were conducted between 1928 and 1930 to determine employees' attitudes towards company, supervision, insurance plans, promotion and wages. Initially, these interviews were conducted using direct questioning such as "do you like your supervisor?" or "is he in your opinion fair or does he have favourites?" etc.

This method has the disadvantage of stimulating antagonism or the oversimplified 'yes' or 'no' responses which could not get to the root of the problem; the method was changed to nondirective interviewing where the interviewer was asked to listen to instead of talking, arguing or advising. The interview program gave valuable insights into the human behaviour in the company.

### **Some of the major findings of the program were as follows:**

1. A complaint is not necessarily an objective recital of facts; it is a symptom of personal disturbance the cause of which may be deep-seated.

2. Objects, persons or events are carriers of social meanings. They become related to employee satisfaction or dissatisfaction only as the employee comes to view them from his situation.

3. The personal situation of the worker is a configuration, composed of a personal preference involving sentiments, desires and interests of the person and the cultural reference constituting the person's human past and his present interpersonal relations.

4. The position or status of worker in the company is a reference from which the employee assigns meaning and value to the events, objects and features of his environment such as hours of work, wages, etc.

5. The social organization of the company represents a system of values from which the worker derives satisfaction or dissatisfaction according to the perception of his social status and the expected social rewards.

6. The social demands of the workers are influenced by social experience in groups both inside and outside the workplant.

During interviews, it was discovered that workers' behaviour was being influenced by group behaviour. However, this conclusion was not very satisfactory and, therefore, researchers decided to conduct another series of experiments. As such, the detailed study of a shop situation was started to find out the behaviour of workers in small groups.



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#### ***4. Bank Wiring Observation Room Experiment:***

These investigations were directed to discover the effect of little gatherings of the people. In this trial, a group of 14 male labourers were framed into a little work meeting. The men were occupied with the gathering of terminal banks for the utilization in phone trades. The work included appending wire with switches for certain gear utilized as a part of phone deals. Time-based compensation for every specialist was settled on the premise of the normal yield of every labourer. Reward as additionally payable on the assumption of collective endeavour.

It was normal that profoundly skilled specialists would convey weight on less capable labourers to build yield and exploit gather motivation design. In any case, the technique did not work and experts built up their particular standard of yield, and this was implemented enthusiastically by different strategies for social weight. The specialist's referred to different explanations behind this conduct viz. dread of unemployment, a dread of increment in yield; yearning to secure moderate labourers and so on. The Hawthorne tests unmistakably demonstrated that a man at work is roused by more than the fulfilment of financial needs. The administration ought to perceive that individuals are social creatures and not simply monetary creatures. As a social being, they are people from a gathering and the government should attempt to comprehend assemble states of mind and gathering brain science.

**The following were the main conclusions drawn by Prof. Mayo by Hawthorne studies:**

#### **1. Social Unit:**

A factory is not only a techno-economic unit but also a social unit. Men are social beings. This social characteristic at work plays a major role in motivating people. The output increased in Relay Room due to the effective functioning of a social group with a warm relationship with its supervisors.

#### **2. Group Influence:**

The workers in a group develop a common psychological bond uniting them as the £ panel in the form of informal organization. Their behaviour is influenced by these groups. The pressure of a group, rather than management demands, frequently has the strongest influence on how productive workers would be.

#### **3. Group Behavior:**

Management must understand that a typical group behaviour can dominate or even supersede individual propensities.

#### **4. Motivation:**

Human and social motivation can play even a greater role than little monetary incentives in moving or motivating and managing employee group.

#### **5. Supervision:**

The style of control affects worker's attitude to work and his productivity. A supervisor who is friendly with his employees and takes an interest in their social problems can get co-operation and better results from the subordinates.

#### **6. Working Conditions:**

Productivity increases as a result of improved working conditions in the organization.

#### **7. Employee Morale:**

Mayo pointed out that workers were not simply cogs, in the machinery. Instead, the employee morale (both individual and in groups) can have profound effects on productivity.

#### **8. Communication:**

Experiments have shown that the output increases when workers have explained the logic behind various decisions and their participation in decision-making brings better results.

#### **9. Balanced Approach:**

The problems of employees could not be solved by taking one factor, i.e. management could not achieve the results by emphasizing one aspect. All the things should be discussed, and a decision is made for improving the whole situation. A balanced approach to the whole situation can show better results.

#### **Conclusions of Hawthorne Studies / Experiments**

It took Elton Mayo some time to work through the results of his Hawthorne Experiments, particularly the seemingly illogical results of the Relay Assembly room operations. His most important conclusion was that the prevailing view of the time that people work purely for money and living was deeply flawed. Work was much more. It was first and foremost a group activity in which other people and their behaviour are they colleagues, managers or observers, affected how well people worked. People's morale and productivity were affected not so much

by the conditions in which they worked out by the recognition they received. The rises in productivity in the Relay Assembly Room were achieved under the affected eye of the observers not because the conditions made the workers feel good but because the employees felt valued.

The conclusions derived from the **Hawthorne Studies** were as follows:-

1. The social and psychological factors are responsible for workers' productivity and job satisfaction. Only good physical working conditions are not enough to increase productivity.
2. The informal relations among workers influence the employees' behaviour and performance more than the formal relationships in the organization.
3. Employees will perform better if they are allowed to participate in decision-making affecting their interests.
4. Employees will also work more efficiently when they believe that the management is interested in their welfare.
5. When employees are treated with respect and dignity, their performance will improve.
6. Financial incentives alone cannot increase the performance. Social and Psychological needs must also be satisfied to increase productivity.
7. Good communication between the superiors and subordinates can improve the relations and the productivity of the subordinates.
8. Special attention and freedom to express their views will improve the performance of the workers.

### **Criticism of Hawthorne Studies / Experiments**

The Hawthorne Experiments are mainly criticized on the following grounds:-

1. **Lacks Validity:** The Hawthorne experiments were conducted under controlled situations. These findings will not work in the real setting. The workers under observation knew about the tests. Therefore, they may have improved their performance only for the experiments.
2. **More Importance to Human Aspects:** The Hawthorne experiments give too much importance to human aspects. Human aspects alone cannot improve productivity. The production also depends on technological and other factors.
3. **More Emphasis on Group Decision-making:** The Hawthorne experiments placed too much emphasis on group decision-making. In a real situation, an individual decision cannot be neglected especially when quick decisions are required, and there is no time to consult others.
4. **Over Importance to Freedom of Workers:** The Hawthorne experiments give a lot of relevance to freedom of the workers. It does not give importance to the constructive role of the supervisors. In reality, too much of freedom to the workers can lower down their performance or productivity.



## Summary

Mayo's reputation as a management guru rests on the Hawthorne Experiments which he conducted from 1927 to 1932 at the Western Electric Hawthorne Works in Cicero, Illinois. The factory employed mainly women workers who assembled telephone cabling equipment. The study aimed to establish the impact of different conditions of work on employee productivity. Initially, Mayo examined the effect of changes in the factory environment such as lighting and humidity. He then went on to study the effect of changes in employment arrangements such as breaks, hours, and managerial leadership. Not only were the Hawthorne experiments the first large-scale studies of working people's conditions ever made; they also produced a range of remarkable results that changed the thinking of management.