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FACILITIES PLANNING: LOCATION ✓

Introduction

Site selection is an important activity which decides the fate of the business. A good location may, reduce the cost of production and distribution to a considerable extent. The reduction of cost of production and distribution helps in elevating either the competitive strength or the profit margin of the business.

Locating a business involves a large, relatively permanent investment. If the site selection is not proper, all the money spent on factory building, machinery, and their installation will go in waste and the owner has to suffer a great loss. Therefore, the site for the factory should be selected very carefully. While selecting a site, it is necessary to consider technical, commercial and financial aspects and then the select a site that may be provide maximum advantages.

The need for selecting a suitable site or location to house the factory may arise in the following situations:

- (1) While starting a new factory.
- (2) During the expansion of the existing plant.
- (3) When the existing plant is to be re-located at some other place, to remove the drawbacks of the present location or to gain the benefits of a still better location.

The Problem of Location

The problem of site selection of a factory can be solved in the following three stages:

- (1) Selection of the region.
- (2) Selection of the locality.
- (3) Selection of actual site.

(1) Selection of the Region: Generally, the geographical area is divided on the basis of natural regions or political boundaries within the nation (For example, Maharashtra

State, U.P. etc.). The suitability of various regions is considered on the basis of comparative cost advantages available out of the possible regions.

(2) Selection of the Locality: After selecting the region, the specific locality within the region is considered. Generally, the following alternative are open in selecting the locality:

- (a) Urban area
- (b) Rural area
- (c) Suburban area in the vicinity of the urban area. The comparative advantages of each locality are considered at this stage.

(3) Selection of the Site: While selecting the site, the type of development of land, cost of levelling etc., possibility of plant expansions, and other infrastructure facilities like, transport, banking, power, communication, postal facilities etc. are considered.

Factors Affecting Size of the Firm

The size of firms is usually dependent on the following factors:

(1) Availability of Capital: The size of the firm depends upon the availability of capital. Every firm needs capital. Only large capital investment is made or small capital investment is made. The need of capital depends on size, type and nature of the firm. Industries which require large capital investment e.g., sugar refining, tend towards large scale. But business units requiring small capital and more labour and a few tools and machines can be started on a small scale.

(2) Entrepreneurial Ability and Efficiency: The ability experiences and managerial efficiency of the entrepreneur is one of the important factors that determine the size of the business unit. As the firm continues to expand, the tasks of organisation and co-ordination become more difficult. The entrepreneur is gradually overloaded with decisions which only he can take, so that he is unable to give enough time and thought to any one problem. The resulting inefficiency is reflected in rising cost. The inability of the entrepreneur to successfully co-ordinate and supervise a large unit is a factor that may check the expansion of the firm.

(3) Risk of Uncertainties: Risks of changes in demand have their impact on the trends in the size of the firms. Firms have to face fluctuations in demand for their products and accordingly adjust their policies and strategies in order to survive and maintain the position in the market. The firms should have the necessary strength to absorb the shocks of fluctuations in demand and they should be flexible enough to adapt to new trends in demand.

Variations in Demand are of Four Kinds:

(i) Permanent change in demand may occur due to decline in the popularity of a product or due to a substitute. It may also be caused by changes in fashion, tastes, technology or methods of production so that the product that a firm was so far producing becomes outdated and hence unsalable.

(ii) Cyclical fluctuations in demand means imbalance in demand and supply for a short period. Trade cycles involving alternative phases of boom and depression are common phenomena.

(iii) **Seasonal fluctuations** changes in demand for certain products are seasonal in nature, e.g., demand for woollen garments changes according to winter or summer. The same is the case with umbrellas, raincoats, fans etc.

(iv) **Erratic fluctuations** in the quantity demanded occur in industries where products are not manufactured according to individual orders and designs at different prices. e.g., jewellery, furniture etc.

(4) **Type of Organisation:** The size of the firm also depends on the type of organisation. e.g., sole trading business concern or individual proprietorship, partnership firm, private companies that are managing business on small and medium scale. Joint Stock Companies require capital on large scale. Thus, the size of the firm also depends on the convenience of the directors from the point of view of the organisation and management.

(5) **Availability of Inputs:** The size can be large if the inputs are available on a large scale. Where the inputs will have to be transported from a distance and there is also some uncertainty, the size is bound to be small. It is for this reason that Government has been locating super thermal power houses near the coal mines.

In urban areas many facilities are available whereas in rural areas the entrepreneur has to face many difficulties.

(6) **Nature of Product:** In the case of processing of raw materials resulting in the production of joint and by-products, the scale is naturally more if the entrepreneur decides to process all the products. In case of production of less standardised and more artistic products the size is bound to be small.

Similarly, if the expectations of the entrepreneur are limited, business can be started on small scale and, if his expectations are more such as reputation, or if a unit is catering to a big market, the size of the undertaking will be larger.

(7) **Laws of Returns:** Where an industry or its products is subject to decreasing returns, the increase of the product will mean higher cost. Such industries cannot grow beyond a certain size or become large. But where increasing returns apply, large production will result in lower cost, so that the firms can keep on growing larger in size provided the demand for the product is elastic.

(8) **Government Regulation or Licensing Policy of Government:** The size of the firm depends on the decision taken by the entrepreneur and on the attitude in the Government. Large-Scale firms are subject to much more rigorous state regulation than small ones. Licenses have to be obtained, and they have to conform to a certain standard size. It is often desirable to start on a small scale to take advantage of low taxes and then expand gradually.

Factors Affecting the Plant Location

Industry is an activity which converts raw materials and semi-finished goods into finished goods for sale. Industrial organisation means the combination and coordination of capital, labour, machinery and raw materials. The objective of industrial organisation is to minimise the cost of production and to achieve progress in that industry. This requires a pre-determined and well thought out business policy, planning of machinery and plant layout, planning of purchases of raw materials, organisation of distribution of goods and a planned sales organisation. The success of business depends on the process of organisation and planning.

As business grows, organisation and planning become more necessary. When the location of an industrial unit is preplanned, many factors are taken into consideration—e.g., adequate supply of raw materials, nearness to the market, transport facilities, supply of labourers, government facilities, land, climate, supply of power and water, etc. The consideration of these factors requires careful analysis because the location once chosen, cannot be changed often. Frequent changes in location leads to losses. Therefore, the location of an industry is determined by taking into consideration the following factors:

(A) Primary Factors

- (1) Supply of raw materials
- (2) Nearness to market
- (3) Transport facilities
- (4) Labour supply
- (5) Availability of power
- (6) Supply of capital

(B) Secondary Factors

- (7) Facilities
- (8) Natural factors
- (9) Political factors
- (10) Government subsidies and facilities
- (11) Historical and religious factors
- (12) Initial start and goodwill
- (13) Personal factors
- (14) Miscellaneous factors

FACTORS OF LOCALISATION

The factors of localisation can be divided into the following categories:

(A) Primary Factors

(1) **Supply of Raw Materials:** It is necessary to consider the adequate supply of raw materials and the nature of raw materials. The cost of raw materials are an important element of the total cost of production. If the supply of raw materials is not regular, it may lead to frequent stoppages and breakages in production. The time and the cost of transporting raw materials is also important. Therefore, industrial units are located near sources of raw materials. When the raw materials are heavier than the finished product — e.g., sugarcane — the factory is located near the raw material producing centre. Nearness to the source of raw materials reduces the cost of transportation. When the weight of the finished product is more than the weight of the raw materials, nearness to raw materials is not important because raw materials may be collected from several sources. Nearness to raw materials is important in case of such industries such as sugar, cement, jute and cotton textiles.

(2) **Nearness to Market:** Every producer wants to sell his product in the market. Nearness to market is important from the point of view of his control over the market.

In those industries where raw materials are obtained from different sources, nearness to the source of raw materials is not as important as nearness to the market. Nearness to the market is important for supplying goods to the customers in a minimum period of time adjusting supply according to changes in demand and gaining control over the market. Nearness to the market reduces the cost of transporting finished goods to the market and enhances taking advantage of favourable prices and demand in the market. The producers' survival capacity increases when the market is near the centre of production. Delay in transportation may lead to losses in the form of deterioration of goods. Nearness to market is an important factor in the case of industries producing light, delicate and perishable goods — e.g., glass, cosmetics, food products, fashionable goods having a changing demand, etc.

(3) Transport Facilities: Speedy transport facilities are needed for the regular and timely supply of raw materials at low cost and for transporting finished products on time to the market. Transport facilities with a good speed and capacity are needed for transporting labourers and establishing contacts in the market, and controlling supply according to changes in demand. A producer has to choose a speedy and cheap means of transport after making a comparative cost study of different means of transport — e.g., roads, railways, waterways, etc. Transport facilities are important for getting control over foreign markets.

(4) Supply of Labour: The supply of labour at low cost is important. The importance of labour supply has not lessened in spite of mechanisation. Labour costs are important. Machines cannot produce anything without the availability of skilled labourers. Nearness to the source of labour is, therefore, important. However, labourers are usually available at industrial centres. If the supply of labourers is not regular, manhours and machine-hours are lost forever. Due to labour legislation, trade unions, a dearth of skilled labourers and high absenteeism, the stability of a labour force is most important. Therefore, producers should try to regularise the supply of labourers by reducing absenteeism and strikes due to unsatisfactory working conditions.

(5) Power: Power is necessary for the process of production and for transporting finishing goods and raw materials. Power may be electrical, diesel and atomic energy. All types of power like electricity, diesel and atomic energy are localised and mobile. Power shortages lead to tremendous losses due to the stoppage of machinery. Therefore, industries must have a sufficient and regular supply of power if continuity in production is to be maintained and if industries are to operate at the full capacity. Usually, heavy industries like machine tools and coal mining industries are located near sources of power. Industrialisation of villages depends on the local availability of electricity or diesel power in underdeveloped areas. All types of industries, whether big or small, require power.

(6) Supply of Capital: Industries require capital for initial promotion and expansion. Therefore, a capital market must be developed in industrial centres. Large-scale production, mechanisation and big industries require large amounts of equity capital and debenture capital for a long period. It is, therefore, necessary that development banks or long-term financing institutions (like the U.T.I., I.F.C., etc.) are developed. Commercial banks should also be developed for the supply of current, or short-term, or working capital. The capital market mobilises the small savings of the people for the purpose of industrialisation. Capital is more mobile than labour and, therefore, nearness to capital is not required for the purpose of industrialisation.

(B) Secondary Factors

(7) **Facilities:** An enterprising spirit innovation, technical knowhow and an industrious nature of population — all these factors taken together and a favourable government policy create a favourable atmosphere for the purpose of the establishment of industries. Heavy industries in India are the result of personal factors like enterprise, industrious nature of one man creating an industrial group or a family — e.g., Tatas, Kirloskars, etc.

(8) **Natural Factors:** Land, water, climate, source of raw materials and agricultural climate are some natural factors which are important for some industries like cotton textiles, sugar and jute. These industries depend on a good climate and source of natural raw materials.

(9) **Political Factors:** The government's policy of licensing and encouraging the development of industries in underdeveloped regions determines the location of industries. Such a policy may cause the dispersal of industries. The location of defence industries depends on the political policy of the government. The government's policy of subsidising small industries in village areas will determine their location and dispersal in village areas. The government's policy of not allowing licenses to big units in cities will cause the dispersal of industries to underdeveloped areas.

(10) **Government Subsidies and Facilities:** The government may encourage the dispersal of industries in underdeveloped areas by making capital, land, water and power available at subsidised rates. The government may give such facilities as development rebate, tax exemptions, price subsidies, banking, insurance and postal facilities at low rates, priority in transport and supply for raw materials, etc. By giving these facilities, the government may bring about the development of industries in backward areas and this will result in the regional balancing of industries.

(11) **Historical and Religious Factors:** Some industrial cities are of historical importance. Some of them are capital cities having religious importance, — e.g., Benaras, Prayag, Kolhapur, Nasik, etc. Industries grow at these religious centres because these are places of historical importance.

(12) **Initial Start and Goodwill:** Some industries get located at a place because some industrialists start the industry at that place at an early stage — e.g., Jamshedpur (Tatas) was developed into an industrial city; the iron and steel industry received its initial start there. The motor car industry was started at a place where Mr. Ford started his workshop. Once one industry is started, other industries also develop at that place. Government restrictions play a negative role in the location decision. Industries are not permitted to be started or expanded in certain developed urban areas. So certain industries are relocated from urban areas to rural or less developed or the divisions or branches of the industries established in urban areas are started in such rural or developed areas.

(13) **Personal Factors:** In business history, it is found that personal considerations have decidedly affected the location of certain industrial units. There is no rationale for such considerations, however, when there is a possibility of multiple locations, this factor plays a decisive role in locational consideration. Henry Ford started the automobile industry in Detroit (U.S.A.) because it was his home-town.

(14) **Miscellaneous Factors:** The following factors also affect the location of the industrial unit: