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NAAC ACCREDITED 'A' GRADE

**Topic: Theory of Industrial Location after Weber**

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# THEORY OF INDUSTRIAL LOCATION AFTER WEBER

This theory is based on the 'least cost principle' which is used to account for location of a manufacturing industry. The theory is based upon a single, isolated country with homogeneous conditions. Some of the natural resources in this setting are found everywhere, while some have fixed locations. The workforce has fixed locations. Transportation costs, in this situation, are a function of cargo weight and the distance. Demand is uniform throughout for all products; hence, there is uniform price for all products at all locations.

In order to make his model work, Weber isolated what he believed to be basic causal factors by holding all other possible variables constant. Eventually, these variables could be introduced (one at a time) into the model.

Weber's basic assumptions are as follows:

1. The location of raw materials is a given (fixed in space in a predetermined and known fashion.)
2. The spatial distribution of consumption is a given, and there is only one central purchase point for each producing unit; (of course, he understood that in the real world, the location of a plant influences the distribution of labour and, in turn, this distribution impacts upon consumption).
3. The distribution of labour is fixed, as are wages at any specific location. Wages, however, can vary from one location to another. This means that labour was not mobile, and thus not affected by the location of industries; (of course, Weber knew this was not actually true in the real world).
4. Transportation systems are uniform in every way; and, in fact, Weber considered only one means of transportation: rail. In order to achieve such consistency, he modified weight and distance (the basic factors involved in transportation costs). In this way, he tried to compensate for variances in the intensity of rail use, the size of shipments, the topography, the condition of the road bed, the qualities of the goods being shipped, and the advantages associated with long hauls. This resulted in a mathematically flat plain.
5. Although he did not specifically mention it, the model also assumes that culture characteristics as well as economic and political systems remain constant.

The theory claims that the costs will get influenced by transportation costs, labour costs and by the agglomeration factor.

Role of Transportation Costs:

1. A one market, one raw material condition gives rise to three situations.

(i) Raw Material Available Everywhere:

The best location in this situation is the market, as that will simply eliminate the transportation costs for the manufacturing unit.

(ii) Raw Material Fixed, And Pure:

The manufacturing unit, in this case, should be located either at the market or at the source.

(iii) Raw Material Fixed and Gross (I.E. It Loses Weight On Processing):

The best location will be at source.

2. A one market, two raw materials ($R_1$, $R_2$) condition gives rise to four situations.

(i) Both $R_1$ and $R_2$ are found everywhere: here, the best location will be at the market, as in that case, lowest transportation costs would prevail.

(ii) $R_1$ is fixed, $R_2$ is found everywhere, and both are pure: the best location would be at the market, because then, transportation charges for $R_1$ only will have to be paid.

(iii) Both $R_1$and $R_2$ are fixed and pure: the best location will be at the market, because in that case lowest aggregate transportation charges will prevail.

(iv) Both $R_1$ and $R_2$ are fixed and gross: this is a complex situation, for which Weber introduced the "locational triangle". Two raw materials—R, and $R_2$—and market (M) form the three modes of this triangle. The transportation charges are a product of the cargo weight and the distance carried by transportation. Thus, a pull is being exerted on the location by each of these three modes. It is seen that the weight-losing manufacturing processes like iron smelting tend to be located near the source of raw materials, while the weight-gaining ones like baking tend to be located near the market (Fig. 10.25).

Role of Labour Costs To determine the role of locational pattern of labour force on manufacturing location, Weber's locational triangle is placed in concentric pattern of rising transportation costs outwards from the centre (Fig. 10.25). It is assumed that the labour

force is dispersed outwards and the distance from the centre represents savings on account of labour costs decrease and a point (L) comes where the savings on labour cost overcome the handicap of rising transportation costs. This is a more profitable location than 'F which is the lowest transportation cost location.

*Role of Agglomeration:*

The coming together or agglomeration of industries offers cuts in production costs if two or more industries operate in the same location (Fig. 10.25).

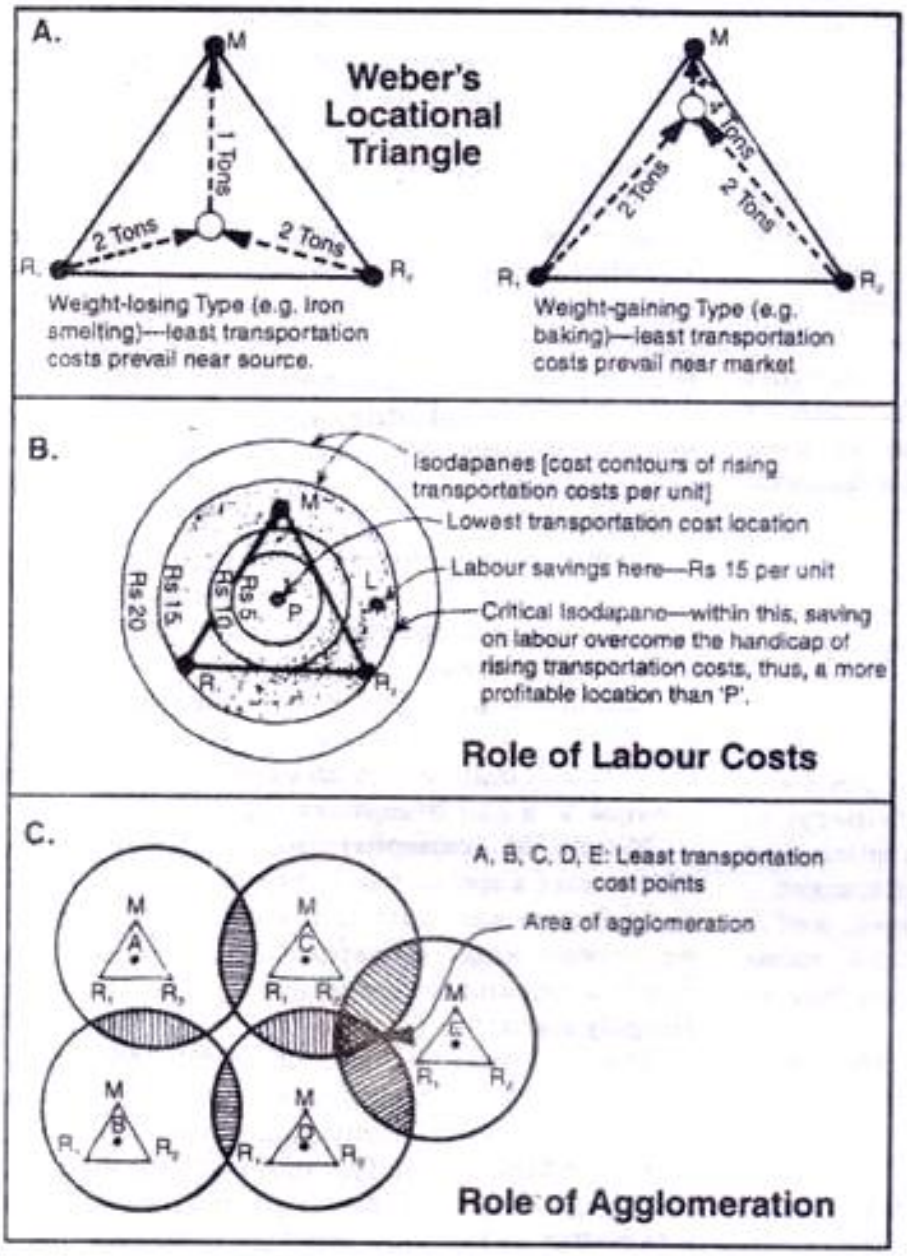


**Fig. 10.25** Graphical presentation of Weber's Theory of Industrial Location.

*Evaluation of Weber's:*

Theory Weber's theory which revolves around transportation costs misses the point that the freight rates may not always be directly proportional to the distance. These rates may not also be similar for raw materials and finished goods.

Weber, in his theory, seems to have over-emphasized the supply factors while ignoring the demand factors. Still, credit must be given to Weber for laying bare the fact that transportation costs are the most fundamental factor in deciding the location of the manufacturing industry. Weber's theory of location has been criticized on various grounds which may be summarized as follows:

1. Weber has been criticized for his unrealistic approach and deductive reasoning. According to Sargant Florence, vague generalizations cannot provide suitable solutions to the theory of location as non-economic considerations will also influence which are not mentioned in the pure theory. He says that Weber's theory fails to explain locations resulting from historical and social forces.

2. A.Predohl criticizes Weber's theory as more a selective theory than a deductive theory. The very distinction between primary and secondary is itself artificial, illogical and arbitrary.

3. Weber assumes fixed labour centres and unlimited supplies of labour which are unrealistic. The rise of industry may create new labour centres and we cannot assume unlimited labour supplies at any centre.

4. In a competitive market structure, the assumption of fixed points of consumption is unrealistic. Country-wise scattering, usually, of consuming public is a reality and there may be a shift in the consuming centres with a shift in industrial population.

5. A. Robinson also considers Weber's division of raw materials into 'ubiquities' and 'localised' as artificial.

Weber's deductive theory of location, in spite of the shortcomings, is the only theory which has been neither enjoying the universal acceptance and application, as all the other alternative suggestions are neither complete nor comprehensive.