Volume 1, Issue 1 June 2015 ISSN NO: 2454 - 2326

# North Asian International Research Journal Consortium

*North Asian International Journal Of Multidisciplinary*

# Welcome to NAIRJC

**ISSN NO: 2454 - 2326**

North Asian International Research Journal is a multidisciplinary research journal, published monthly in English, Hindi, Urdu all research papers submitted to the journal will be double-blind peer reviewed referred by members of the editorial board. Readers will include investigator in Universities, Research Institutes Government and Industry with research interest in the general subjects

# Editorial Board



**Address: - Ashak Hussain Malik House No. 221 Gangoo, Pulwama, Jammu and Kashmir, India - 192301, Cell: 09086405302, 09906662570, Ph. No: 01933-212815,**
**Email: nairjc5@gmail.com Website: www.nairjc.com**

# Government Control on Location of Industries

Professor: Mohammad Ashraf Parry

Department of Business Management Islamic University of Science and Technology

Awantipora Pulwama Kashmir-192301

## Introduction

The basic objectives of the private sectors are to be obtaining maximum profits out of the business operations. So private sector industries select such a site which reaps maximum economic advantage. Such a policy results in the concentration or localization of industries in certain areas leaving the other areas underdeveloped. Such a policy distorts the quality of income, wealth and opportunities. So the government being the custodian of public interest intervenes in the locational decisions as under:

(1) Through the licensing policy, it restricts the concentration of industries in developed areas.
(2) It provides certain tempting incentives for the spread of the industries in the industrially backward areas.
(3) It establishes the giant public sector units in the relatively less developed areas.

**Methodology:**

**The objectives of state intervention and control are:**

(1) To attain balanced regional development.
(2) To narrow down the gap of inequality of income and wealth through creating and providing employment opportunities to less developed areas.
(3) To reduce the concentration of population and congestion of industries in city areas.
(4) As strategic defense policy, spread of industries reduces the chances of heavy losses in war time

**Subjective, Qualitative and Semi-Quantitative Techniques**

In setting up industries, the location is governed by personal preference. Though very common in practice, the approach is not professional, In case of certain industries, there are dominant factors which influence the location decision. For evaluating these qualitative factors, ranking or rating methods are used. Let's examine some of these methods.

**(1) Equal Weights method:** In this method, equal weights are assigned to different factors (F) and the site (S) is evaluated among the factor scale. Himalaya, for instance, a manufacturer of auto spares chose three factors to rate four sites. The sites were assigned ratings between 0-10 points against each factor. Some of the sites ratings were used to compare it with the other sites.

**Table 1.1**

**Decision matrix**

| | Potential site | | | |
|---|---|---|---|---|
| **Factors** | **S1** | **S2** | **S3** | **S4** |
| F1 | 3 | 6 | 8 | 2 |
| F2 | 4 | 5 | 9 | 3 |
| F3 | 7 | 2 | 6 | 3 |
| Sum of site ratings | 14 | 13 | 23 | 8 |

From the matrix, we can say site 3 has the highest rating (23), and deserves to be chosen.

**(2) Variable Weights method:** In this method variable weights are assigned to each factor and sites are evaluated along the factor scale. For instance, factor F1 may take 400 points, F2 300 points and factor F3 100 points. The scope of each site is jotted, out of maximum possible points assigned for that factor.

**Table 2**

**Decision matrix**

| Factors | Maximum Points | Potential Sites | | | |
|---|---|---|---|---|---|
| | | S1 | S2 | S3 | S4 |
| F1 | 400 | 300 | 350 | 350 | 200 |
| F2 | 300 | 150 | 200 | 150 | 100 |
| F3 | 100 | 50 | 75 | 80 | 40 |
| Sum of Ratings | | 500 | 625 | 580 | 340 |

From the table, it is clear that site 2 has highest rating of 625, and hence is chosen.

**(3) Weight-cum-Rating Method:** There is one more method of evaluating the potential of the site. Here, we assign variable weights to each factor. Thereafter, location is rated along a common scale against each factor. The product of location rating and factors rated gives locational point assignment. For instance, we can allot weight between 1 to 5 amongst the three factors (F1, F2, and F3 are assigned 2, 3, 5 respectively). Now as each factor, the site can get between 0-10 points. Each site rating is than computed.

**Table 3**

**Decision matrix**

| Factors | Weight Assigned to Factors | Potential Sites | | | |
|---|---|---|---|---|---|
| | | S1 | S2 | S3 | S4 |
| F1 | 2 | 4 | 6 | 8 | 3 |
| F2 | 3 | 4 | 4 | 9 | 2 |
| F3 | 5 | 5 | 3 | 7 | 2 |
| Site Rating | | 45 | 39 | 78 | 22 |

- **Illustrative Calculation: -** $45 = (2) \times 4 + (3) \times 4 + (5) \times 5$

As indicated by the table, S3 with the highest rating of 78 is chosen.

**(4) Factor Point Rating Method:** this is the last method; here we establish a subjective scale for all factors in common. The points are assigned to each factor along a subjective scale. Find out subjective rating for each factor. The subjective rating, for example, could be: poor, fair, adequate, good and excellent for evaluating each site for each factor. Adequate takes zero value, and to its left there are negative value and to its right positive values.

**Table 4**

**Factor point rating sample**

| Factors | Poor | Fair | Adequate | Good | Excellent |
|---|---|---|---|---|---|
| F1 | -14 | 10 | 0 | 5 | 12 |
| F2 | -2 | -1 | 0 | 2 | 3 |

The weight that compares a factor to all other factors is the range between minimum and maximum weights assigned to factor. Each site is than evaluated choosing the appropriate subjective rating for each factor and for each location and the equivalent points of the subjective factor rating are assigned to the factor, the following table makes it clear:

**Table 5**

**Decision Matrix**

| Factors | Potential Sites | | | |
|---|---|---|---|---|
| | S1 | S2 | S3 | S4 |
| F1 | 0 | -10 | 5 | 0 |
| F2 | 0 | -2 | 3 | 1 |
| F3 | 0 | 0 | 0 | 0 |
| Site Rating | 0 | -12 | 8 | -1 |

❖ **Illustrative Calculation**

-12 = (-10) + (-2) + (0)

Obviously, Site 3 with the highest rating of 8 will be chosen.

The cost consideration is left to the management in the site evaluation scheme. The data, of course, is provided to the management, which than use a composite measure method, the below motioned table gave the information about the composite measure method.

### (5) Composite Measure Method:

**Illustration: -** Comparative appraisal of various plant sites with reference to the qualitative and quantitative factors affecting the locational decision.

For the location of an engineering plant, three sites, A, B, C are used consideration. The cost of various factors and other relevant aspects in respect of each site are listed below. It is required to make the final selection of the site.

**Table 6**

| Factors | Site 'A' | Site 'B' | Site 'C' |
|---|---|---|---|
| 1. Cost of land including development land | 50,000 | 49,000 | 45,000 |
| 2. Buildings | 4,50,000 | 4,20,000 | 4,80,000 |
| 3. Labour charges | 40,000 | 25,000 | 32,000 |
| 4. Power | 10,000 | 9,000 | 10,000 |
| 5. Water | 5,000 | 1,000 | 3,000 |
| 6. Cost of raw materials and other supplies | 1,00,000 | 80,000 | 85,000 |
| 7. Freight: | | | |
| (i) Incoming | 30,000 | 50,000 | 52,000 |
| (ii) Outgoing | 20,000 | 35,000 | 40,000 |
| 8. Local taxes | 5,000 | NIL | 3,000 |
| Total Operating Cost | 7,10,000 | 6,60,000 | 7,50,000 |

**Other Factors:**

| | | | |
|---|---|---|---|
| 9. Cost of living | Very high | Low | Moderate |
| 10. Housing facilities | Excellent | Poor | Good |
| 11. Community facilities | Excellent | Poor | Good |
| 12. Community attitude | Good | Encouraging | Indifferent |

The observation of quantitative factors (from 1-8) reveals that site B avails substantial cost advantage over site 'A' and site 'C'. But in view of the qualitative factors (from 9-12) site 'A' is preferable.

**Location Break-Even Analysis (BEA)**

Break-Evan Chart (BEC) is drawn for different locations to compare the sites. Fixed cost, variable cost and revenue/output are taken into account to do so. Mathematically, Break-Evan volume is

$$\frac{\text{Fixed Costs}}{\text{Contribution}} \quad \text{OR} \quad \frac{\text{Fixed Cost}}{\text{Revenue/Unit} - \text{Variable Cost/Unit}}$$

We can draw up a profit and loss account of different sites for comparison.

**Quantitative Models of Location**

**Median Model: -** Median Model is based upon the assumptions that movement of load is done on rectangular/rectilinear pattern. It is used for a single new facilities location.
**The Gravity Model: -** The Gravity Model is an attempt to establish a 'Centre of Gravity' with respect to existing ancillary facilities (like sources of supply S1, S2 and distribution point like D1, D2 etc.).
**Brown Gibsons Composite Model: -** Brown Gibsons Composite Model provides a composite location model of the subjective and objective factors.

**Government Steps to Ensure Regional Balanced Development**

Concentration of industries in some cities in the west has already created serious problems for the socio-economic life of the people. Congested cities with insanitary working conditions make the city absolutely unhealthy. It creates problems for housing, transport, and education. Enemy bombing was also the result of high concentration of industries in big cities. In India, the political leaders from rural areas under pressure from their voters in the country began to demand that industries be established in rural areas to provide opportunities of employment and higher incomes to people in those4 areas. Heavy concentrations of industries in some pockets have economic, social and military evils. Decentralization of industries is the only solution to do away with such evils and to establish regional balance.

**Government Measures for the Decentralization of Industries**

1. Development and regulation of industries Act 1951, was passed with a view to prohibit the establishment or expansion of industries in developed areas by formulating the industries licensing policy in India.
2. Encourage the establishment of industries estates in rural and semi-urban areas with infrastructure facilities like factory sheds, water, electricity, transport, communication, warehousing etc. at concessional rates.
3. Establishment of public sector unites in rural areas.
4. State government followed it up with a package scheme of incentives for listed industries if they are set up in under developed areas.
5. Refund of capital gains tax paid on profits out of sale of factory premises in big cities, provided the sale proceed of such land were invested in industries units in the underdeveloped areas.
6. Relief for duties and taxes: Electricity board offers rebate on its tariff to all new industries in the backward areas for five years. Public water sources exempt new industries in underdeveloped areas and state government sub-sidises them to the extent of 1.6% of the value of such units. New units in backward regions are exempted from payment of non-agricultural assessment for a period of thirteen years from the date of license or registration.
7. Preference in government purchases: 33% of the government purchases shall be from new units in the developing areas at the lowest tendered process quoted in open competition for a period of six years from the date of production.
8. Industrial units which have to pay 25% of the cost of housing scheme under industrial housing scheme will be subsidised to the extent of 10% of their share to be paid up to the housing board.
9. Advance supply of building material to speed up industrial construction.
10. Assistance in technical training in technical high schools for personnel in these units.
11. State industrial and Investment Corporation of Maharashtra (SICOM) assistance on plant location.
12. Government contribution to the extent of 75% of the cost feasibility study by government agencies.
13. Financial assistance: Interest free loan equal to the sale tax payable on purchase of raw material and sale of finished goods for 13 years.
14. Refund of sale tax on certain conditions and clearance from SICOM.
15. Guaranteeing of loans to these new units.

**Industrial Estates**

An industrial estate refers to the area or place, small or big, where a number of small manufacturers undertake their production activities because of certain facilities provided there. In a developing country like India, where there is a serious problem of unemployment due to lack of industrialization, industrial estate with infrastructural facilities like land, building or shed, water, power, transport, warehousing, communication, banking etc. will attract a large number of entrepreneurs to start industries. Industrial estates may be private, government or on a co-operative basis started in rural or semi-urban areas.

**The main objectives of industrial estate are:**

1. To help in the development of small industries.
2. To help regional and balanced development.
3. To help increase the production in the country.
4. To help reduce the problem of unemployment.
5. To attract new entrepreneurs to use modern methods and techniques in manufacturing.
6. To curb the entrepreneurs pollution in industries cities.
7. To make use of the local resources to the maximum.

The inconvenient location and high cost of construction had created some difficulties in the initial stages. But the incentives and concessions provided by the government to business units changed the face of many rural and semi-urban areas in India by providing more income and employment to the people.

**Advantages of industries estate:**

The advantages enjoyed by entrepreneurs from industries are as under:

1. It provides basic common facilities at a reasonable price.
2. It provides well planed factory accommodation with water, electricity, roads etc.
3. It provides common facility services such as tool room, heat treatment, equipment, electroplating units, testing laboratory etc.
4. All amenities are taken in to consideration at the planning stage. The promoter of the industries estate is specialized in this area.

**Factors responsible for location of industries**:

The following factors are responsible for the localization of industries: -

- Raw material, power, labour supply, technical knowledge, market, transport, water supply, machinery, capital etc.
- Principal raw material needed for the manufacture of iron and steel are iron ore and coal.
- In India, industries are unevenly distributed because of the industries are localized mainly according to the availability of raw materials and power. These resources are concentrated in certain regions of the country, so industries dependent on these resources are localized in these regions only. E.g. Iron ore is available in Orissa, Bihar, and Madhya Pradesh. Coal is also available in the nearby areas. So centres of iron and steel industry are located in these states.

**Conclusion**

During the study it has been observed that, the location is governed by personal preference. Though very common in practice, the approach is not professional, In case of certain industries, there are dominant factors which influence the location decision.

**References:**

1. E.T. Grether, 1970. Industrial organization past history and future problems, American economic revive, 60 (2), pp.83-89
2. S.A. Chunawalla & D.R. Patel, ed 2008. Production and Operation Management, pp. 68-70. Himalaya publishing house, Mumbai – 400004.
3. Richard E. Caves, 2007. Joe. S. Bain, in pioneers of industrial organization, H. W. de Jong, W.G. Shepherd,ed., pp. 224-231
4. Rechard Schmalensee , 1988. Industrial Economics; An Overview, Economic Journal, 98(392), pp. 643-681
5. Dennis W. Carlton and Jaffery M.Perloff, 2004. Modern Industrial Organization, 4th ed, pp. 2-3
6. Oliver E. Williamson,2002. The Theory of Firm as Government Structure; From Choice to Contract, journal of Economic perspectives. 16(3), pp. 171-195
7. R. H. Coase. 1937. The Nature of the Firm, Economica, N.S, 4 (16), pp. 386-405

# Publish Research Article

**Dear Sir/Madam,**

**We invite unpublished Research Paper, Summary of Research Project, Theses, Books and Book Review for publication**.

**Address:-Ashak Hussain Malik –House No. 221, Gangoo Pulwama - 192301, Jammu & Kashmir, India.**
**Cell: 09086405302, 09906662570, Ph No: 01933212815**
**Email: nairjc5@gmail.com Website: www.nairjc.com**