Cost Effects on Multi-Storey Buildings in India

Dr. P. K. Garg
Head of the Department of Commerce, M. M. Modi College, Modinagar
Richa Agarwal
Research Scholar, Department of Commerce, C.C.S. University, Meerut

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Abstract

The development of multi-storey building construction projects is a complex task which needs not only adequate planning but also requires heavy financial resources. In the big cities, multi-storey building projects are developed as a township where builders have to provide all the necessary amenities to the customers from school to markets, parks, hospitals, community hall, temples, swimming pools, playgrounds etc. Due to these reasons the cost of these projects remains very high. As per the question of cost effects on multi-storey buildings, several factors affect the cost of construction from selection of geographic location to intervention of outside-agencies like government, competitors, suppliers of material and so many others. These factors affect the cost of multi-storey building construction in both sides to a large extent.

Key Words : *Cost Effects on Multi-Storey Buildings, Financial Resources, Construction.*
Classification-JEL : *D 24, D 61, L 74*

1. INTRODUCTION

Most of the Indian residents belong to the middle class so they demand the dwellings that are within their economic range. Due to high density of population, the land cost in the country is increasing day by day. On the other side, inflation is swelling the cost of construction to a large extent. Due to these two major reasons it remains a challenging task for builders to provide an economic dwelling to the middle class people. It encourages the construction of multi-storey buildings. But the development of multi-storey building construction projects is a complex task which needs not only adequate planning but also requires heavy financial resources. In the big cities, multi-storey building projects are developed as a township where builders have to provide all the necessary amenities to the customers from school to markets, parks, hospitals, community hall, temples, swimming pools, playgrounds etc. Due to these reasons the cost of these projects remains very high.

As per the question of cost effects on multi-storey buildings, several factors affect the cost of construction from selection of geographic location to intervention of outside-agencies like government, competitors, suppliers of material and so many others. These factors can be divided into two categories i.e. internal factors and external factors.

2. INTERNAL FACTORS

In the process of construction of multi-

storey buildings there are a large number of internal factors which leave their direct impact on the cost of construction of multi-storey buildings. These factors are selection of construction site, use of technology, duration of construction, utilization of labour, quality of construction etc. A detailed description of these factors is being given below:

a) Selection of Construction Site

The most important factor that affects the construction cost of multi-storey buildings is selection of construction site. Generally multi-storey building projects are developed for middle level income group; hence it is essential that the cost of construction of flats must be economic.

The cost of land depends upon its location of construction site. If the land is acquired in developed areas or inside cities, naturally its cost will be very high which will increase the cost of construction of a multi-storey building to a considerable level. On the contrary, if the land for the construction of multi-storey building is purchased in the outer parts of cities or in nearby areas, its rates will be less as compared to the first and naturally it will affect the construction cost of a multi-storey building favourably.

Also the land acquisition cost matters in the cost of construction of multi-storey building. When these projects are planned as township at the land of farmers or in tribal areas; heavy amount is to be paid as compensation to farmers or inhabitants of that area which increases the cost of the project significantly.

Development of proper infrastructure facilities in the area of construction reduces the cost of multi-storey building construction to a large extent. Proper roads and transport facilities reduce the cost of supply of raw material and construction equipment. Likewise, easy availability of raw material at selected location reduces the cost of material consumed in construction work. Moreover, the availability of sufficient labour force at site area affects the labour cost favourably.

b) Use of Technology

In the present era the technology is moving very fast and due to globalization it is sparking around the world within no time. Technology enables the management to do the desired work more efficiently and quickly. The construction of multi-storey buildings is labour based work. Here technology plays an important role in reducing the cost of a project. But it is a notable point that the cost of new technology remains high and it proves cost effective only in big projects. In labour intensive countries like India, the cost of labour sometimes remains cheaper in comparison to technological up-gradation. Moreover, in labour intensive areas when some industry insists on more and more technological up gradation, it reduces the job opportunities for inhabitant of that area of construction site and deprives the project team from the support of that local people. Sometimes local residents oppose the project on the same ground.

Undoubtedly the technology saves time and helps to maintain standards near to the limit of perfection. But in case of multi-storey building projects which are constructed for middle class people, the cost effectiveness with satisfactory quality is considered enough. Here perfection is neither expected nor required.

c) Duration of Construction

The completion time of multi-storey building directly affects the cost of projects. As these projects need heavy investments and funds that are generally raised from different lending agencies, the burden of interest increases with the time and increases the cost of project as well. In the long-run in case of multi-storey building construction, it remains very high.

d) Utilization of Labour

Labour is the most important component

in multi-storey building projects. The proper use of labour time is an important factor which influences the construction cost of building in directs manner. If the labour time is fully utilized and minimum idle time is left with them, naturally it will affect the cost of construction favourably. On the contrary, when labour remains idle for an unjustified time or they waste their time otherwise, the construction cost of a building increases considerably.

e) Quality of Construction Work

If the builders maintain the good quality of construction of multi-storey buildings, naturally the cost of construction will be high as compared to the lower quality of construction. On the other side, when the builders compromise with the quality of multi-storey buildings, its cost will naturally be lower. Depth of foundation, height of plinth, height of flats, width of partition walls, quality of building materials used, quality and quantity of sanitary and electric fittings, quality and type of floors, quality and quantity of tiles used in kitchen, bathrooms and toilets, materials used in doors and windows, wood work, elevation work, quality of white-wash and paints, use of local products and materials etc. decides the quality of multi-storey buildings. Thus the quality of construction work leaves its direct impact on the cost of construction.

3. EXTERNAL FACTORS

Also the external factors affect the cost of construction of multi-storey buildings in direct or indirect manner. These factors are the efficiency of architects and engineers, experience and efficiency of contractors, period of construction, season of construction, political stability, labour problems, fluctuations in material rates, increases in wage rates, provision of MBBL-2016, norms of local development authorities etc. A detailed description of these factors is being given below:

Efficiency of Architects and Engineers

The efficiency of architects and engineers influences the cost of multi-storey buildings to a large extent. If the architects and engineers associated with the project are well qualified, experienced and efficient, they will make the plans and design of a building in such a manner so that the optimum use of available land and resources can be made possible. This can avoid all types of wastage of materials and labour-time. They can make check on over consumption of materials in construction work using the standards prescribed for the purpose. Thus the efficiency of architects and engineers can reduce the cost of construction of multi-storey buildings to a large extent.

On the other side, if these persons are not well qualified and are inefficient, it may lead to wastage of materials and time resulting in the enhancement in construction cost of multi-storey buildings.

a) Experience and Efficiency of Contractors

The construction work of multi-storey buildings is considered as big project and the major parts of these projects are completed on contract basis. In short, the project of a multi-storey building construction is a sum of various types of construction contracts. It shows the importance of contractors in the construction work of multi-storey buildings.

The experience and efficiency of contractors of construction work counts a lot in increasing or decreasing the construction cost of multi-storey buildings. The experienced and capable contractors take the work from labour tactfully and remain successful in reducing the idle time of labour. Further, they are fully capable to have a check on wastage of raw materials which results in reducing the construction cost of multi-storey buildings. On the other side, inexperienced and inefficient contractors remain fail in reducing the idle time of labour and wastage of materials which results in increasing the construction cost of multi-storey buildings.

b) Period of Construction

During the period of inflation, the cost of material and labour are in increasing mode which affects the cost of multi-storey building construction project adversely. On the other side, during deflation period the costs of material and labour move downward which reduce the cost of construction significantly.

c) Season of Construction

If the construction work is carried on in summer season, naturally more work is done by the labour because of long duration of day time. Thus the cost of labour works out comparatively low which reduces the construction cost of multi-storey buildings. On the contrary, if building construction work is furnished in Monsoon season, the idle time of labour will increase due to rains. Likewise, the wastage of materials increases abnormally in rainy season. All these increase the cost of construction in monsoon period. In winter season the efficiency of labour decreases due to shivering cold and short duration of sun light. Hence, the real cost of labour remains highest in winter season which affects the total construction cost considerably.

d) Political Stability

Political stability in the country helps in stabilizing the cost of multi-storey building construction projects. In case of political stability in the country the government policies are helpful in keeping the prices of different types of materials and other accessories stable for a long time which results in the stability in construction cost of multi-storey buildings.

e) Fluctuations in Material Prices

Fluctuations in the prices of different kinds of raw materials leave its effects on the cost of construction of multi-storey buildings. If the prices of sand, cement, rodi, badarpur, iron roads and angels, wood, tiles, stones etc. move upward, naturally also the cost of construction of multi-storey buildings goes upward. On the other hand, if the prices of these materials move downward also the cost of construction will come down. Thus the fluctuations of prices of different kinds of raw materials play an important role in deciding the cost of construction work.

f) Increase in Wages

When the wage rates are revised by the builders under the pressure of labour, also the cost of construction increases simultaneously to a large extent. The reason behind this phenomenon is that the wages counts a major part of the total cost of construction work. The increase in wages is a common feature with the increase in the prices of necessity goods and services in the market because the labour demand for the increase their wages to meet out their living cost.

g) Provisions of Mbbl-2016

There are several regulatory provisions made by government of India to ensure the safety of construction against fire, earthquake, noise, structural failures and other possible hazards in construction work. Besides, with the help of regulatory control government ensure to regulate height, architectural design and construction aspects etc. of multi-storey buildings for orderly development of a particular area. The regulatory provisions are mandatory in nature.

In this direction Town and Country Planning Organization (TCPO) has replaced the Model Building Bye Laws – 2004 by Model Building Bye-Laws- 2016 for Construction work. The salient features of MBBL- 2016 for multi-storey building construction are given as under -

- There should be strict compliance of defined regulatory provisions for structural designing of multi-storey buildings.
- There should be provision for differently abled people, walk way, parking, stairs, lifts, toilets, drinking water, drainage etc.
- Construction should be environmental

friendly having provisions for rainwater harvesting, wastewater reuse and recycle and installation of Solar Roof Top etc. in multi-storey building.

- Construction Company should adopt modern construction technology for ensuring structural safety and compliance of other provisions for multi-storey building construction like parking, peripheral open spaces, fire safety etc.
- There should be adequate toilet facilities for women and provisions for segregated toilet facilities for visitors in multi-storey building construction as per the compliance of provisions of Swachch Bharat Mission (SBM).

Although all the provisions of MBBL-2016 ensure the safety and healthy living of residents of multi-storey building but compliance of all these provisions increases the cost of construction to a large extent.

During personal survey it was observed that both private and public sector builders fulfilled the most of the provisions of MBBL-2016 due to the regulatory obligations but half-heartedly.

NORMS OF LOCAL DEVELOPMENT AUTHORITIES

Also the norms of Local Development Authorities regarding the construction affect the cost of construction of multi-storey buildings directly. Number of storeys, height of flats, safety measures from earthquakes and other natural calamities, open area in the flats, development of parks, community halls, parking spaces, width of roads and lanes, plantation on the road sides etc. is decided by the Local Development Authorities which increases the cost of construction of multi-storey buildings.

5. CONCLUSION

Thus, there are so many internal and external factors which affect the cost of construction of a multi-storey building. Among these factors most of the unfavourable factors are controllable and can be checked with the help of effective management and control mechanism. So the proper provisions for rectifying these issues may ensure the smooth functioning of multi-storey building project works.

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