SYNOPSIS

The problems identified in relation to the retail and service complex partly due to the evolution of the establishment and partly due to the changes in the urban system are:

- The failure of some complexes to perform effectively their retail and distributive roles.
- The difficulty of some complex managers to decide the suitable type, number and size of retail functions to be included in the complex.
- The failure of some establishments to sustain sales and thus resulting in closure in very short period of operation in the complex and high turn over rate of floor area for rent.
- Too many establishments of the same function result in excessive intra-function competition.
- The spatial expansion of large establishment may result in the eviction of the small retail elements.
- The shop owner says, "The management threatens to raise rent by 100%.
The manager says, "Even if some are willing to pay and even suggest to increase the rent, we say no; for some reasons, we just want them to leave."
- The shoppers problem. "I can't get what I required in one shopping trip."
- Designers and developers problem. "How large should the complex be if it were to attract 20,000 shoppers a day?"
"If I were to specify 50 types of shops to be included in the complex, how large should the complex be?"
"If the complex is x square feet, how do I know what are the type, number and size of establishments to be included in the complex?"
"How and where shall these establishments be located within the complex?"

As the complex cannot exist by itself, it depends on shoppers in different areas, this is the exogenous aspect; the endogenous aspects are the conditions within the complex.
Regional and International aspects.

- The tourists have substantial implications on the retailing facilities in the central area.
- The complex diffuses life style, fashions and product innovations.

National aspects.

- Rural Areas: Commercial facilities are also provided in industrial estates.
- Town Areas: Commercial facilities are also provided in industrial and public housing estates.
- Central Area: Commercial floor areas are provided by urban renewal and private projects.
- Impacts of changes in the central area on retail and service elements.

  - Site selection: Where should urban surgery and transplant be done? Site selection should take into consideration urban structure and consumer inertia.
  - Land acquisition: The learning process of urban development is reflected in the area gazetted for acquisition and implementation.
  - Relocation: The relocation of resident and retail establishment is un-coordinated.
    - The complex adapt itself to the urban structure. Small elements affected by urban renewal are offered alternative accommodations in adapting complexes which adapts the retail functions to office and wholesale functions.
    - Relocation is a time consuming process.
  - Space provision: The total implemented area for the 6 year period between 1962 - 1967 were 0.3640 million square feet.
    - The total estimated area to be implemented during the 8 year period between 1968 - 1975 will be about 30 million square feet. There is an over provision of space.
    - The size of the distributory complex is much larger than the traditional shop houses. The period 1968 to 1973 saw the increase in the number of large establishments. In terms of sales, the share of the total sales of the small retail elements is expected to decrease in proportion.
• Interrelationships of schemes: The implemented scheme may
  + enhance the nearby existing facilities, or
  + increase the load of existing facilities,
  + generate demand for new facilities,
  + affect the sales of other complexes positively or negatively,
  + out of central area complexes affect the sales of the central area complexes if higher order goods are sold,

• Parking facilities and accessibility:
  + MRT reduces the requirement for parking spaces for shopping,
  + MRT affect the location of complexes, i.e., at the proximity of stations.

ENDOGENOUS FORCES

- Physical aspects:
  • Diversity of a complex should not be too low neither should it be too high.
  • A large establishment is an important factor in attracting shoppers.
  • Establishment in the complexes follow a rank size relationship.
  • Establishment association is the establishment's desire to stay near to other establishments.
  • New development added the new dimension of vertical association.
  • Some retail and service Functions follow the negative binomial law showing the exposure nature of retail and service Functions.
  • The concentration of shoppers and the amount of floor area sold to retail trades decrease with the increase in floor levels.

- Management aspects:
  • Proportion of floor area for sale affects the management of the complex.
  • The filtering of noisy Functions on the adoption of a space allocation policy helps to promote the complex's performance and prevents speculations.
  • The opening of the complex in an organised manner increase
its ability to attract shoppers, as consumers are not a memoryless system.

- If the management's decision making power becomes too great, it affects the small businesses and thus the tenant and management relationships.

- Consumer Behavioural Aspects.

  - Expenditure patterns of consumers affect the type diversity of complexes, i.e., complex diversity is a function of consumer demand diversity.
  - The arrival pattern of consumers at a complex also affects the sales of the establishments in a complex.

- Economic Aspects.

  - Cash flow and capital productivity reflects itself in the proportion of floor area for sale and the ways it is sold.
  - Large store requires large floor area but pays a lower price per square foot to rent or purchase the space in a complex.

- Policy and legal aspects.

  - Should more out of central area complexes be approved?
  - Should small businesses be protected by law?

Solution to Space Allocation Problem.

The space allocation is a process for deciding the type, size, number and compatibility of activities on space. The method of allocation includes the following steps:

- Decide the activity type from type occurrence probability distribution function,

- Decide mass or total floor area devoted to each type by multiplying the simulated frequency to the mean area of each activity type.
- Satisfy the constraints on minimum complex size, maximum floor area of each level, minimum size of that activity.

- Decide the spatial organisation of activities from the compatibility function.

- Evaluate the allocation by consumer expenditure pattern and shopper arrival probability distribution functions.

- Decide by iterations until constraints on shopper arrival and expenditure patterns are satisfied.

- Final allocation.