CHAPTER – VI
FINDINGS AND SUGGESTIONS

6.1 INTRODUCTION

Telecommunication plays a key role in the economic development of the country and provides more important help in removing growth disparities in a developing economy like India by providing essential infrastructure to backward and remote areas. With a view, therefore, to build up a reliable and efficient telecom network in the country, the Department of Telecommunications, Government of India, has been striving to mobilize resources, induct new technologies and upgrade the skill of the personnel engaged in these services. Telecommunication services were introduced in India soon after the invention of telegraphy and telephone. The first telegraph line between Calcutta and Diamond Harbour was opened for traffic in 1851. Telecom service companies are offering various types of services to their customers such as local call facility, long distance call, international telephone services, transmission system, telex services, introduction of new services, telecom quality assurance, telecom factories, telecom mission, wireless planning and coordination wing, monitoring organization and research and development.

Mobile cellular communication system is giving a great deal of new advanced technology and it has been rapidly growing. Many new concepts and new systems have been developed. Digital cellular system has made rapid strides with the advent of digital technology. It has been classified as the GSM, TDMA, and CDMA. As the number of cellular subscribers
increases, the interference that will be experienced by the systems will also increase. The technological developments in the field of telecommunications have reached a new height in recent times. These developments are aimed to provide the customers with new services to meet various requirements based on their utilization for their benefit. Most recent unprecedented growth of mobile telephones indicates a turn around 120 million within the short period. Mobile telecom technology has evolved from simple first generation analog systems to second generation digital system with rich features and services for both business and residential environments. Any new communication system has to support multimedia telecom services without any restriction or limitations on the network or the user's terminal.

The basic concept of cellular phones originated in 1947 in the United States, when researchers at Bell Laboratories got the idea of cellular communications from the mobile car phone technology used by the police department of the country. However, it took over three decades for the first cellular communication system to evolve. Public trials of the first cellular system began in Chicago during the late 1970s and cellular telephone services were introduced in the US in the early 1980s, and gained popularity in a short span of time. By the late 1980s, cellular services have become popular in many developed countries across the world. Over the years, on account of dynamic technological advancements in the sector, there was an improvement in the number and quality of services provided. There were mainly two types of cellular services offered by operators – postpaid and prepaid.
The players in the cellular market in India have been focusing heavily on the prepaid card segment due to high potential and profitability in the long run. From the prepaid segment profit margins are low on account of low tariff and high advertising, promotional and customer service costs. There are many reasons for a cellular mobile telephone system for deploying it in many cities. The important ones are the operational limitations of conventional mobile telephone systems, limited service capability, poor service performance and inefficient frequency.

Technological services in the corporate world face severe competition in the market after liberalization, privatization and globalization of the Indian economy. A customer expects a good quality of services from service providers at reasonable prices and easy adoptability in mobile communication services. So it becomes essential to ascertain the role played by the cellular service providers. It is also necessary to study the behaviour, awareness and post-purchase behaviour pattern of customers as it differs from one to another. Therefore, this study focuses on the marketing practices of telecommunication services by cellular phone companies in Tamil Nadu with special reference to customers’ attitude towards prepaid and postpaid customers.

The first chapter provides the summary of the study, major findings, suggestions and areas for further research. In the first section the summary of the study is presented. The second section lists out the major
findings. The third section presents the suggestions and the last section highlights the areas for further research.

The study has been presented in six chapters. The introductory chapter deals with the research design of the study. It gives details about the origin and development of communication in various stages. It covers areas such as the statement of the problem, the main reason for developing a cellular mobile telephone system and deploying it in many cities, the operational limitations of conventional mobile telephone systems, limited service capability, poor service performance and inefficient frequency spectrum utilization of services. The review of literature, the scope of the study, the objectives of the study in its various dimensions, operational definitions, geographical area covered, period of the study, sampling design, methodology, hypotheses, framework of analysis, limitations of the study and scheme of the report have also been discussed.

To achieve the objectives of the study, both the primary and secondary data have been used. Two comprehensive interview schedules, viz. one is for prepaid customers and another one is for postpaid customers, have been used for collecting primary data on the behaviour of both categories of consumers. Convenience sampling has been adopted for collecting the data. Those who are using the mobile communication services provided by the various service providers such as BSNL, AIRCEL, AIRTEL, HUTC (now acquired by VODAFONE), RELIANCE and TATA INDICOM have been considered as sample respondents. A sample of 1,655 prepaid
consumers and 417 postpaid consumers have been selected from Tamil Nadu covering all the 30 districts. For analyzing the awareness, testing the attitude and interpreting the primary data, the researcher has adopted appropriate statistical tools like percentages, chi-square test, factor analysis, weighted average ranking, and Likert’s scaling technique wherever necessary. This study mainly analyses the behaviour of consumers towards prepaid and postpaid cellular services in Tamil Nadu.

The second chapter deals with the origin and growth of telecommunication and cellular communication in various manners. It studies about the birth of communication methods such as communication between animals such as pigeon, cave or rock paintings, petroglyphs, pictogram, ideograms, and various writing systems that are followed by human beings like logographic, syllabic, alphabetic, abjad, abugida, featural, and technological developments for future development in communication are also discussed. The telecommunication methods invented through signalling system and used in the modern world are: megaphone, telex, cordless phone, wireless phone, telegraphic, cellular system, digital signaling system, VOIP telephone system, telegram, telegraphist, telepathy, telephone booth, teleprinter. Latest developments are discussed in this chapter with adequate information with regard to communications and technologies used in the mobile communication such as TDMA, GSM and CDMA. Throughout the evolution of cellular telecommunications various systems were developed without the benefit of standardized specification. The first handheld cellular phone inventors on the patent were Martin Cooper, Richard Dronsuth, Albert
J. Mikulski, Charles N. Lynk, Jr., James J. Mikulski, John F. Mitchell, Roy A. Richardson, and John H. Sangster. It developed with various generations.

The 1G (first-generation) is wireless telephone technology cell phones. These are the analog cell phone standards that were introduced in the 1980s. The 2G (or 2-G) is short name for second-generation wireless telephone technology. It cannot normally transfer data, such as e-mail or software other than the digital voice call itself, and other basic ancillary data such as time and date. The 3G is short name for third-generation mobile telephone technology. The services associated with 3G provide the ability to transfer both voice data (a telephone call) and non-voice data (such as downloading information, exchanging email, and instant messaging).

The third chapter discusses the profile of cellular operators in Tamil Nadu. It gives details about the operators in GSM technology viz. Airtel, Hutch, Aircel and BSNL and operators in CDMA technology viz. Tata Teleservices and Reliance. It also provides details such as operation circles, revenue, value added services, and trend analyses. The trend analyses reveal that the F-values are statistically significant. The compound growth rate (CGR) for the GSM mobile service providers are – 123.42 for Airtel; 90.58 for Hutch; 106.42 for Aircel; and 121.99 for BSNL. And it is 96.38 for Tata Indicom and 127.75 Reliance CDMA mobile service providers.

The fourth chapter deals with the marketing practices of cellular companies. The marketing practices adopted by the cellular companies and
marketing mix viz. product, price, promotion, place, people, physical evidence, and process of the cellular companies are explained in detail in this chapter.

The behaviour of consumers towards prepaid and postpaid cellular services in Tamil Nadu is analysed in the fifth chapter. The awareness, attitude and post-purchase behaviour of consumers are analysed with the help of statistical tools like percentages, chi-square test, factor loadings, weighted average ranking method and Likert's scaling technique wherever necessary. The last chapter highlights the major findings of the study and suggestions to be carried out.

6.2 SUMMARY OF FINDINGS

The following are the important findings of the study.

1. The study relates to prepaid and postpaid consumers. Prepaid consumers account for 25 per cent in Aircel, 24.9 per cent in Airtel, 21.81 per cent in BSNL, 12.6 per cent in Reliance, 11.12 per cent in Hutch and 4.47 per cent in Tata Indicom. And it is 19.9 per cent, 18.23 per cent, 36.45 per cent, 15.34 per cent, 6.24 per cent and 3.84 per cent respectively.

2. The socio-economic characteristics of prepaid consumers reveal that the number of male consumers was high in all the prepaid services.

3. The percentage of graduate respondents is high in BSNL (36.29%), Aircel (38.07%), Airtel (45.15), Hutch (39.68%) and Tata Indicom (42%), whereas post-graduate respondents are more in Reliance (RIM) (41.62%).
4. The majority of BSNL, Aircel, Hutch, and RIM respondents belong to age group '21 to 30 years', and the respondents of Airtel and Tata Indicom fall in '31 to 40 years' category.

5. Most of the members have a family size of '3 to 5 members'. Unmarried respondents were more in Hutch (55.97%) compared to other service providers.

6. The study also reveals that the private employees are more in number in using almost all cellular service providers.

7. Majority of respondents' income fall in the category of 'Rs.40,001 to Rs.80,000' per annum except in the case of the respondents of the Tata Indicom service provider which falls in the income ranging 'Rs.80,001 to Rs.1,20,000'.

8. In the postpaid category, most of the users are males who are majority in number. While comparing the prepaid and postpaid categories, male respondents predominate in both the schemes.

9. Regarding the educational level of respondents, most of the BSNL consumers (45.39%) have education up to 'school level'; postgraduates are more in 'Aircel' (50.6%) and 'RIM' (40.63%), and Airtel, Hutch and Tata Indicom respondents, large in number, belong to the category 'professionals'.

10. The consumers of Aircel, and RIM fall in the age group of '21 to 30 years' category, whereas the consumers of BSNL, Airtel, Hutch, and Tata Indicom come under in '31 to 40 years' category.
11. In all the categories of cellular services, most of the consumers have a family size of '3 to 5 members' and majority of respondents are married.

12. Most of the users are 'private employee' in Aircel and Hutch, 'business people' in BSNL, RIM and Tata Indicom, and 'professionals' in Airtel.

13. A large proportion of respondents fall in the income group of 'Rs.40,001 to Rs.80,000' per annum.

14. The types of telecommunication systems used by the majority of prepaid respondents are 'cell only'. Following this, very many used the 'cell and landline'. The pattern of usage is found to be similar in respect of the postpaid consumers. Some consumers of 'Airtel' use the 'cell and net' system also.

15. The sources through which the prepaid consumers get awareness about the cellular services are 'friends and relatives' and 'advertisements'. Hence, the first two ranks go to these sources respectively. There is an association between the sources 'advertisement', 'company representatives' and 'existing customers' with the factors such as educational status, age, occupational and annual income except the factor 'sex'.

16. Regarding the sources of awareness in postpaid schemes also, the first two ranks go to the sources 'friends and relatives' and 'advertisement', respectively. Here also there is an association between the sources 'advertisements', 'company representatives', and 'friends and relatives' with all socio-economic factors. While
comparing the two schemes, the first rank goes to the source ‘friends and relatives’ and that there is an association between all the sources with the socio-economic factors such as educational status, age, occupation and annual income at one per cent level of significance.

17. High scores have been provided to the reason ‘easy mobility’ by prepaid mobile subscribers of BSNL (2386 score), Aircel (2584 score), Airtel (2232 score), RIM (1348 score), and Tata Indicom (358 score). Hence, first rank has been assigned to this factor. Whereas the first rank was allotted to ‘easy handling’ factor by the ‘Hutch’ respondents. The reason ‘easy mobility’ has secured first rank from the postpaid consumers of BSNL, Aircel, Airtel and RIM as well.

18. The study indicates that ‘wide coverage’ is the main reason for preferring the prepaid and postpaid cellular service from BSNL, Airtel, and Reliance, and ‘Free SMS’ attracted customers for Aircel. The preference of prepaid Hutch is due to ‘easy connection’ and for post paid due to ‘low cost roaming’, whereas ‘wide coverage’ in prepaid and ‘free SMS’ facility in postpaid attracted customers for Tata Indicom.

19. The most important factor which influences the choice of prepaid services is ‘fixed amount and fixed time’ for all the cellular companies except Reliance and Reliance cellular is important factor for the choice of ‘easy switch over without any loss’ in prepaid scheme.

20. In the case of postpaid services, the factor that influenced the choice of the selection of BSNL and Aircel was ‘no limit for income calls’. Airtel, Reliance and Tata Indicom consumers have chosen their
respective service providers for the factor 'offering more services', and Hutch consumers for 'availability of CUG'.

21. Majority of prepaid respondents (i.e. more than 65%) have stated that it is easy for them to get Value Added Services (VAS) from the cellular service providers. The score percentage is 92.08 in BSNL, 94.5 in Aircel, 92.14 in Airtel, 86.19 in Hutch, 67.18 in Reliance, and 85.66 per cent in Tata Indicom, whereas more than 85 per cent of respondents have a favourable attitude towards VAS.

22. Most of the consumers of prepaid Aircel, say 60.8 per cent, opined that the call cost is low, whereas the consumers of other cellular service stated it as 'reasonable', i.e. BSNL (39.8%), Airtel (53.2%), Hutch (59.7%), Reliance (61.2%), and Tata (58%). But in the case of postpaid schemes, majority of consumers stated that the call cost is 'reasonable' Hutch consumers did not subscribe to this view. The consumers of Hutch (88%) stated that the call cost is 'high'.

23. Majority of respondents were satisfied with the prepaid cellular companies' services and Aircel respondents provided 96.95 per cent score, Reliance 92.98 per cent score, Airtel 90.21 per cent score, Tata indicom 81.08 per cent score, BSNL 78.30 per cent score, and Hutch 72.46 per cent score. In postpaid category, cent per cent score has been provided by the Airtel respondents, 93.86 per cent by BSNL respondents, 92.77 per cent by Aircel respondents, 80.77 per cent by Hutch respondents, 64.06 per cent by Reliance respondents, and 59 per cent by Tata Indicom respondents.
24. The major inconvenience faced by the prepaid customers of all cellular companies is 'schemes are not constant'. The foremost inconvenience faced by the postpaid customer is 'network congestions'.

25. The study indicates that all the respondents in the study area have switched over from one scheme to another within the same service provider.

26. The study points out that majority of prepaid consumers have their additional connections with the same service providers, viz., 59 per cent in BSNL, 54.7 per cent in Aircel, 62 per cent in Hutch, 65 per cent in Reliance, and 61 per cent in Tata Indicom, whereas 51 per cent of Airtel consumers have their additional connection with various service providers. The opinion of the postpaid consumers is entirely reversed, i.e. the Airtel consumers have their additional connection with the same service provider and the remaining cellular service providers' consumers with various service providers for their additional connections.

27. The respondents of Aircel, Airtel, Hutch, RIM, and Tata Indicom have purchased their recharge coupons from 'retail shops'. But most of the BSNL consumers purchased their recharge coupons from the 'dealers'.

28. The principal component method of factor analysis has been used to analyze the factors underlying consumer behaviour towards availing value added services in respect of prepaid respondents. Twenty seven value added services were taken for analysis. Kaiser's Varimax criterion has been used to rotate the factor matrix. The Kaiser-Meyer-
Olkin (KMO) and Bartlett's coefficient is 0.783. The analysis has given seven factor solutions and the results reveal that all the factors taken together have accounted for 63.52 per cent of the total variations. But in the case postpaid category, 28 value added services have been taken for analysis. The KMO and Bartlett's coefficient is 0.591 and extracted eight factors. It explained with 76.76 per cent of the total variations. In both the schemes, 'call management service factor' has been extracted as the first factor. The Eigen value for prepaid is 6.04 and postpaid is 7.59.

29. Regarding the factors underlying consumer behaviour towards satisfaction of value added services by prepaid and postpaid respondents, the factor analysis has extracted seven factors. The KMO and Bartlett's coefficient is 0.794 for prepaid and 0.669 for postpaid categories. The Eigen value for prepaid is 6.22 and for postpaid it is 7.46 for the first factor. In prepaid, 'personal services factor' has been selected as the first factor, whereas it is 'call management services factor' in the postpaid scheme.

30. The factor analysis is also adopted to find out the factors which influence the customers to choose the prepaid mobile communication. For this purpose 20 variables have been given. It has extracted six factor solutions. The KMO and Bartlett's coefficient is 0.786 and the Eigen value for the first factor is 5.15. It has chosen the 'promotional services factor' as it first factor. In the postpaid segment, 23 variables have been given and it has extracted seven factors. The KMO
coefficient is 0.539 and it extracted the 'billing management service' as its first factor with Eigen value of 5.16.

31. The denomination of recharge coupons mostly used by the respondents is Rs.331 regular, followed by Rs.550 recharge coupons.

32. Regarding the receipt of bills, 92.7 per cent of Aircel, 91.45 per cent of BSNL, 82.8 per cent of Reliance, 75 per cent of Tata Indicom and 65.70 per cent of Airtel respondents revealed that they are receiving regularly. Only 7 per cent of Aircel consumers have accepted as 'very irregular'.

33. Most of the respondents preferred to pay their bills at the 'nearby office'. Hence, this place has been ranked as first. The factor 'anywhere in Tamil Nadu' was selected by the respondents except the subscribers of Hutch.

34. The study clearly indicates that the respondents belonging to postpaid category receive detailed bills along with call list and charges. The checking of bills was done by more number of customers of BSNL, Hutch, and Reliance, and it is not done by the respondents of Aircel, Airtel, and Tata Indicom. Most of the Aircel and Tata Indicom customers have noticed errors in the bills, and filing of cases for error in bills were made by a few respondents in Aircel, Hutch, RIM and Tata Indicom. Many of the consumers of Aircel, Airtel, Hutch and Tata Indicom were aware of the charges for locking system.

35. The consumers of Aircel (86.75%), Tata Indicom (68.75%), BSNL (66.44%), Airtel (65.79%), and RIM (50%) have always paid their bills
on the due date and only 42.31 per cent of Hutch consumers have paid on due date. The delay in payment is due 'non-receipt of bills at proper time' by BSNL, Airtel and Tata Indicom consumers.

36. The opinion 'fault rectified' was stated by cent per cent of Reliance, 80 per cent Aircel, 71.11 per cent of BSNL, and 55.56 per cent of Tata Indicom. About 60.87 per cent of respondents opined that the compensation for the loss was provided.

37. The study reveals that majority of respondents in Reliance (76.56%), Aircel (56.63%) have faced the disconnection of outgoing services. In other service providers, it is 48.03 per cent in BSNL, 47.37 per cent in Airtel, 43.75 in Tata Indicom, whereas it is low in Hutch (11.54%).

38. 'Non-payment of bills' is the main reason for disconnection in respect of BSNL, Aircel, Reliance and Tata Indicom consumers and 'usage amount exceeds deposit limit' is the reason for Airtel and Hutch consumers.

6.3 SUGGESTIONS

Based on the findings of the study, the following suggestions are made for attracting the consumers towards cellular communication and improvement in the customer size base for the cellular companies.

1. The cellular companies should take necessary steps to give special schemes for women, similar to those available for students, youth, etc. in order to increase the women consumers' base.

2. Like BSNL, other cellular service providers should initiate schemes for government employees.
3. The mobile operators should take necessary measures to increase the transmitting towers based on the number of connections. The network congestion is a major problem with the customers and companies. Hence the companies are requested to take necessary action to find a suitable remedy to such kinds of problems.

4. The government and TRAI should intervene and regulate the cost of mobile telephony.

5. The cellular service providers should devise strategies for increasing and improving the number of connections and services, respectively.

6. Abrupt disconnection of outgoing services should be avoided due to non-submission of documentary evidences, non-payment of bills for regular customers.

7. The cellular service providers are offering so many value added services to their customers but all the consumers are not able to use them due to abnormal charges. If the services are provided free of cost all the consumers will be able to make use such services.

8. The service providers should concentrate more on the factors such as 'dial in service', 'call waiting', 'call forwarding', 'roaming', and 'bill information' for the efficient utilization of value added services by both prepaid and postpaid consumers.

9. More numbers of bill collection centres have to be established in all districts for easy payments.

10. The cellular companies must take efforts to send the error free bills to ensure proper collection of the amounts due from customers.
11. The cellular companies should see to it that the accessibility to the customer care centres should be easy and they must be located in important and strategic places.

12. The mobile operators should avoid the high roaming charges.

6.4 AREA FOR FURTHER RESEARCH

The following areas are identified for further research in this field.

1. "A Comparative Study on the Utilization of Mobile Services by Rural and Urban Consumers" should be made for comparing the utilization of mobile services.

2. "Value Added Services – An Analytical Study with special reference to Rural Consumers" may be studied for analysing the affordability of rural consumers.

3. "A Study on the Promotional Activities of Cellular Companies" can be undertaken for examining the promotional activities initiated by the cellular companies.


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