A STUDY ON MARKETING STRATEGIES OF BSNL IN TELECOMMUNICATION SERVICES - A COMPARATIVE STUDY WITH PRIVATE SECTOR TELECOMMUNICATION SERVICE PROVIDERS IN KERALA

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For the award of the Degree of

Doctor of Philosophy in Management

By

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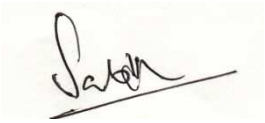
Certificate

This is to certify that the thesis entitled **"A STUDY ON MARKETING STRATEGIES OF BSNL IN TELECOMMUNICATION SERVICES - A COMPARATIVE STUDY WITH PRIVATE SECTOR TELECOMMUNICATION SERVICE PROVIDERS IN KERALA"** is an authentic record of bonafide research carried out by Mr. Sabu. V. G., Research Scholar, School of Management and Business Studies, Mahatma Gandhi University, Kottayam under my guidance and supervision for the award of the Degree of Doctor of Philosophy in Management. I further certify that this research work has not been previously formed the basis for the award of any other degree, diploma, associateship, fellowship, title or recognition to any candidate of this or any other university.

Prof. (Dr.) K. Sreeranganadhan
(Supervising Teacher)

DECLARATION

I, Sabu. V. G., do hereby declare that the thesis entitled **"A STUDY ON MARKETING STRATEGIES OF BSNL IN TELECOMMUNICATION SERVICES - A COMPARATIVE STUDY WITH PRIVATE SECTOR TELECOMMUNICATION SERVICE PROVIDERS IN KERALA"** submitted to Mahatma Gandhi University, for the award of Degree of Doctor of Philosophy in Management is a record of bonafide and independent work done by me under the supervision and guidance of Prof. (Dr.) K. Sreeranganadhan, Director, School of Management and Business Studies, Mahatma Gandhi University, Kottayam and it has not been previously formed the basis for the award of any other degree, diploma, associateship, fellowship, title or recognition to any candidate of this or any other university.



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ABBREVIATIONS

1G	-	First Generation
2G	-	Second Generation
3G	-	Third Generation
3GPP	-	Third Generation Partnership Project
3GPP2	-	Third Generation Partnership Project Two
4G	-	Fourth Generation
ACSI	-	American Customer Satisfaction Index
AMA	-	American Marketing Association
AMPS	-	Advance Mobile Phone System
AUSPI	-	Association of Unified telecom Service Providers of India
B_2B	-	Business to Business
BAV	-	Brand Asset Valuator
BSNL	-	Bharat Sanchar Nigam Limited
BT	-	British Telecommunications
BTS	-	Base Transceiver Station
CDMA	-	Code Division Multiple Access
CEPT	-	Confederation of European Post and Telegraph
COAI	-	Cellular Operators Association of India
CRM	-	Customer Relationship Management
DoT	-	Department of Telecommunications
DSL	-	Digital Subscriber Line
ECSI	-	European Customer Satisfaction Index
EDGE	-	Enhanced Data for GSM Evolution

ETSI	-	European Telecommunications Standardization Institute
FMS	-	Fixed to Mobile Substitution
GDP	-	Gross Domestic Product
GPRS	-	General Packet Radio Service
GSM	-	Global System for Mobile communication
ICT	-	Information and Communications Technology
IMT-2000	-	International Mobile Telecommunications -2000
IPR	-	Intellectual Property Rights
IT	-	Information Technology
ITU	-	International Telecommunication Union
Kbps	-	Kilo bits per second
LBS	-	Location Based Services
LTE	-	Long Term Evolution
Mbps	-	Mega bits per second
MnCSI	-	Minnesota Customer Satisfaction Index
MNP	-	Mobile Number Portability
MTNL	-	Mahanagar Telephone Nigam Limited
NMT	-	Nordic Mobile Telephony
PCO	-	Public Call Office
PLC	-	Product Life Cycle
POTS	-	Plain Old Telephone Service
SIM	-	Subscriber Identity Module
SMS	-	Short Message Service
SOEs	-	State Owned Enterprises
SPSS	-	Statistical Package for Social Sciences

STD	-	Subscriber Trunk Dialing
Std. Dev.	-	Standard Deviation
STV	-	Special Tariff Voucher
SWOT	-	Strength, Weakness, Opportunities and Threat
TACS	-	Total Access Communications System
TAX	-	Trunk Automatic Exchange
UMTS	-	Universal Mobile Telecommunications Systems

INTRODUCTION

INTRODUCTION

In the year 1858, when the first trans-Atlantic telegraph cable was built from England to the United States and Queen Victoria and President Buchanan exchanged messages, a writer for the Times of London raved[1]:

> *"Tomorrow the hearts of the civilized world will beat in a single pulse, and from that time forth forevermore the continental divisions of the earth will, in a measure, lose those conditions of time and distance which now mark their relations."*

The progress of mankind is associated with the exchange of information – the communication. The word communication comes from the Latin word *communis*, meaning "common"[2]. Communication has several elements of its own, which make up the process of communication. The advancement of technology contributed various technical means for effective communication. Technology in communication eliminates time lags and space boundaries. It facilitates an active interaction between people sitting across the world. The telecommunication services have splendid influence in the lives of the people. The services include basic landline voice services, broadband internet, mobile voice, video, video calling, video streaming, games on demand, location based services and many other value added services.

The modern telecommunication systems are indebted to the electrical speech machine, the telephone invented by Alexander Graham Bell[3] in 1876. The great invention of telephone paved the way for the development of Information and Communications Technology (ICT). The telecommunication services started flourished with the expansion of land-line (fixed line or wire line) telephone networks. The telecommunication services in India had been the monopoly of the

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1 http://www.elon.edu/e-web/predictions/150/1830.xhtml, retrieved on 04.07.2013.

2 Malra Treece. (1991). Successful Communication for Business and Professions, (5th ed.). Allyn and Bacon, USA, p. 2.

3 http://fi.edu/franklin/inventor/bell.html, retrieved on 04.07.2013.

government sector till early 1990s. There was huge demand for telephone connections but the supply was highly limited. At that time the telephone spread in India was 0.8 per hundred persons as against the world average of 10 per hundred persons[4].

The post liberalization period was favorable for the development of telecommunication services sector in India. The opening up of the telecom sector attracted domestic and foreign private investments. The entry of private sector telecom service providers led the way for enhanced competition in the market. The initial growth rate was very less in mobile segment due to varied reasons such as premium pricing of services, lower network coverage and relatively high cost of mobile instruments. The continuous innovations in technology and marketing along with liberalization make the Indian telecom sector conducive for rapid developments. This facilitated telecom services to the Indian consumers at affordable prices. The mobile telecom service providers shifted their pricing strategies from premium pricing to penetration pricing. The convenience of mobiles phones and the low pricing of services attracted more and more customers to the mobile telecommunication services. If mobile phone was a luxury in early periods of 2000s, it became a basic necessity later on. At present the trend shows that the market of mobile telecom services in India is rapidly approaching the stage of saturation.

1. Statement of the problem

The Indian telecommunication services sector has undergone revolutionary changes during the past two decades. The decline of landline services and amazing growth of mobile telecom services were the noted changes. Kerala among the States in India is forerunner in the advancement of telecommunication services. Tele density, the total of telephones per 100 inhabitants, is considered as one of the parameters for any country's development. The tele-density in India as on March

[4] National Telecom Policy, 1994, Government of India. Retrieved from http://dot.gov.in/telecom-polices/national-telecom-policy-1994.

2013 is 73.32% and that of Kerala is 96.09%[5]. This shows the clear indication of market saturation in Kerala.

The landline segment was the major telecom business in India till private sector telecom service providers started mobile telecommunication services in the year 1996. The focus of public sector telecom service provider – the BSNL (Bharat Sanchar Nigam Limited) was in landline telecom services till their entry in mobile telecom market of Kerala in the year 2002. The public sector telecom companies were forced to practice modern concepts of marketing management, which were totally alien to them in the monopoly era. The importance has been shifted from service provider to customer. The customers became more educated and more demanding. The customers are impatient for getting the services to their individual needs and expect them to be offered at lower prices. Subsequently the telecom market of Kerala became highly competitive with the entry of various domestic and foreign telecom service providers. The fast growing second generation mobile telephony substituted landlines. The landline industry started declining in Kerala from the year 2006 onwards. This in turn adversely affects BSNL, since it occupies the major stake of landline segment. Even in the decline stage, private sector providers could be able to sustain their landline line connections.

The BSNL started 3G mobile telecom services in Kerala by the year 2009. After a gap of one and a half years private telecom service providers Tata Docomo, Airtel, Vodafone and Idea started 3G mobile services in Kerala. The market developments show that, even though BSNL was the only one 3G telecom service provider in Kerala during the one and half year's period, it could not capitalize the first mover advantage. The private operators with innovative marketing strategies create strong competition to BSNL in 3G services.

Telecom service providers require innovative marketing strategies for existence and excel in the market, especially in the saturated market. Telecom service providers experimented many strategic marketing initiatives in Kerala. The strategies significantly vary from public sector to private sector and operator to

[5] Press releases on subscriber data, March 2013. Telecom Regulatory Authority of India. www.trai.gov.in

operator. To ascertain the marketing strategies of public sector and private sector telecom service providers in Kerala, and the BSNL being the only public sector telecom service provider, the topic of the study was identified and titled as "A study on marketing strategies of BSNL in telecommunication services - A comparative study with private sector telecommunication service providers in Kerala".

This study was an attempt to identify and illustrate different marketing strategies adopted by the public sector telecom service provider BSNL and major private sector telecom service providers in product differentiation, pricing, advertisement and sales promotion. The strategies to market third generation mobile telephony are also included in the study. The study evaluates delivery of service benefits, customization, customer support services, quality of service, brand value, promotional offers, competitiveness in pricing, and unethical practices of the public and private sector telecom service providers in Kerala. An attempt is also made to identify the important factors and its effects related to customer satisfaction and customer loyalty of mobile telecom consumers of Kerala.

2. Review of literature

An extensive search conducted to identify existing literature in the area of study. The researcher comprehensively reviewed the previous studies related to growth, development and innovations in telecommunication services, the practice of marketing management in telecommunication services, and various marketing strategies and its applications by telecommunication service providers. The reviews of literature facilitated theoretical back ground to the study, brought clarity and focus to the research problem and helped the researcher to identify the research gap.

George P. Wioschis & Gilbert A. Churchill Jr. (1979)[6] studied the consumer behaviour of adolescents. This study found that adolescents in higher social classes had significantly greater economic motivations for consumption. Thus, marketing communications stressing the economic or functional aspects of the product may be relatively more effective when directed at adolescents in middle social classes than at those in lower social classes. The effectiveness of marketing communications may

[6] George P. Wioschis & Gilbert A. Churchill Jr. (1979). An Analysis of the Adolescent Consumer. Journal of Marketing, Summer 1979, American Marketing Association, pp. 40-48.

differ according to the age of the adolescent consumer. The comparative advertising directed at young people may be relatively more effective among older adolescents than younger adolescents, since the older group was better able to cognitively differentiate and retain such advertising content. The findings also suggest that the importance of product attributes considered in decision making may vary with age. Consequently, marketers might benefit by isolating by age group the significant product attributes used in young people's consumer decision making processes and adjusting their marketing and promotional mixes accordingly.

Parasuraman A. et al. (1988)[7] studied service quality and identified its contributing factors. The factors are tangibility, reliability, responsiveness, assurance and empathy. They developed a multiple-item scale for measuring consumer perceptions of service quality. The authors stated that the initial instrument was refined, condensed, and validated through several stages of data collection and analysis. Data for testing and refining the instrument were obtained from customers spread across five different service categories: appliance repair and maintenance, retail banking, long-distance telephone, securities brokerage, and credit cards. The authors claimed that extensive statistical analysis of data from five different samples of respondents yielded a highly reliable and valid instrument (SERVQUAL) containing 22 items. They grouped the items in SERVQUAL into the five distinct dimensions: (i) Tangibles: Physical facilities, equipment, and appearance of personnel (ii) Reliability: Ability to perform the promised service dependably and accurately (iii) Responsiveness: Willingness to help customers and provide prompt service (iv) Assurance: Knowledge and courtesy of employees and their ability to inspire trust and confidence (v) Empathy: Caring and individualized attention the firm provides to its customers. The further refinement and reassessment of the SERVQUAL scale was suggested again by Parasuraman A. et al. (1991)[8]. The standard five-dimensional structure of SERVQUAL scale serves as a meaningful

[7] Parasuraman A., Valarie A. Zeithaml, and Leonard L. Berry. (1998). SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. Journal of Retailing, Volume 64, Number 1, Elsevier Science Publishing Company Inc., pp. 12-40.

[8] Parasuraman A., Valarie A. Zeithaml, and Leonard L. Berry. (1991). Refinement and Reassessment of The SERVQUAL Scale. Journal of Retailing, Volume 67, Number 4, Elsevier Science Publishing Company Inc., pp. 420-450.

framework for tracking a firm's service quality performance over time and comparing it against the performance of competitors. In the guidelines for usage of this scale, it was suggested that, since the SERVQUAL is the basic skeleton underlying service quality, it should be used in its entirety as much as possible. While minor modifications in the wording of items to adapt them to a specific setting are appropriate, deletion of items could affect the integrity of the scale and cast doubt on whether the reduced scale fully captures service quality.

David L. Loudon and Albert J. Della Bitta (1993)[9] in their book 'Consumer Behavior' describe the consumer characteristics, environmental influence on consumer behaviour, individual determinants of consumer behaviour and consumer decision process. Consumer decision processes are described in a four-stage model consisting of problem recognition, information search and evaluation, purchasing process and post purchase behaviour. The significance to marketers of problem-recognition stage of consumer decision making process is that the process can be effectively measured and can be used to develop and evaluate marketing strategies. The authors observed that the demographic characteristics such as age, income, sex, occupation, location, race, marital status and education of consumers are easily quantifiable and they enable the marketer to describe accurately and specifically to understand better consumer characteristics.

Paul Fifield and Colin Gilligan (1995)[10] in their book 'Strategic Marketing Management' observed that the marketing strategy is influenced by organisations market position. The market leaders typically but invariably have the largest market share and, by virtue of their position, are able to determine the nature, bases and intensity of competition. The market challengers have rather smaller share of the market and adopt an aggressive position by attacking the market leader or others in the industry in an attempt to strengthen their position and perhaps gain the leadership position. The market followers pursue less aggressive strategies, avoid direct confrontation and are generally willing to accept current market structure and

[9] David L. Loudon and Albert J. Della Bitta. (1993). Consumer Behavior, (4th ed.). McGraw-Hill Inc., New York, pp. 33-35, 485-488.

[10] Paul Fifield and Colin Gilligan. (1995). Strategic Marketing Management. Butterworth-Heinemann Ltd., Oxford, pp. 104-105.

status quo. The market nichers concentrate their efforts upon small and often specialised parts of the market and in this way avoid head-on fights and develop detailed but specific market knowledge.

Athreya M. B. (1996)[11] in the article, 'India's telecommunications policy: A paradigm shift' observed that India's telecommunications sector is undergoing significant change. This paper examines three phases of change. First, there was a policy vacuum almost up to1990. Second, there was a shift in telecommunications policy brought about by a paradigm shift in government economic policy. Third, difficulties were experienced in implementing the new policy. Finally, the paper considers the future for the Indian telecommunications sector.

Fornell C. et al. (1996)[12] in their research paper titled 'The American customer satisfaction index: Nature, purpose, and finding' argued that perceived quality, which had been explained as the served market's evaluation of recent consumption experienced, would have a direct and positive impact on overall customer satisfaction. In their development of the American Customer Satisfaction Index (ACSI), they concluded that overall customer satisfaction, especially for ACSI, has three antecedents, which are: perceived service quality, perceived value and customer expectation.

Valarie A. Zeithaml and Mary Jo Bitner (1996)[13] in their book 'Services Marketing' explains that intangibility, heterogeneity and inseparability of production/consumption lead services to possess high levels of experience and credence properties, which in turn make them more difficult to evaluate than tangible goods. In addition to the traditional four Ps, the services marketing mix includes people, physical evidence and process. The people are all human actors who play a part in service delivery and thus influence the buyer's perceptions; namely, the firm's personnel, the customer, and other customers in the service

[11] Athreya M. B. (1996). India's telecommunications policy: A paradigm shift. Telecommunications Policy, Vol. 20, No. 1, Elsevier Science Ltd., pp. 11-22.

[12] Fornell C., Johnson M. D., Anderson, E. W., Cha J., & Bryang B. E. (1996). The American customer satisfaction index: Nature, purpose, and finding. Journal of Marketing, 60, pp. 7-18.

[13] Valarie A. Zeithaml and Mary Jo Bitner. (1996). Services Marketing. McGraw-Hill Companies, Inc., New York, pp. 18-27, 105, 397.

environment. The physical evidence is the environment in which the services are delivered and where the firm and customer interact, and any tangible components that facilitate performance or communication of the service. The process is the actual procedures, mechanisms, and flow of activities by which the services are delivered. They stated that from customer's point of view, the most vivid impression of service occurs in the service encounter, or the "moment of truth," when the customer interacts with the service firm. From the organisation's point of view, each encounter thus presents an opportunity to prove its potential as a quality service provider and to increase customer loyalty. The strategies to be followed when too low demand are: (i) Use sales and advertising to increase business from current market segments (ii) Modify the service offering to appeal to new market segments (iii) Offer discounts or price reductions (iv) Modify hours of operation and (v) Bring the services to the customers.

James W. Peltier and John A. Schribrowsky (1997)[14] in their article 'The use of need-based segmentation for developing segment-specific direct marketing strategies' argued that increasing costs, competition, and consumer scepticism present serious challenges to the growth of direct marketing. The future success of direct marketing firms rests with their ability to exploit their inherent competitive advantages. One critical advantage is their ability to target very specific groups of customers with individualized marketing programs. This article supports a segmentation approach to targeting customer groups based on both the needs underlying a purchase and descriptive buyer data. By identifying the reasons "why" people buy, and their key "evaluative" criteria, direct marketers can generate sustainable competitive advantages in their served markets through individualized products/services, offers, messages, and other key marketing mix strategies.

Banwari Mittal and Julie Baker (1998)[15] in their paper 'The services marketing system and customer psychology' explain about services marketing system. It consists of seven Ps (Booms & Bitner, 1981). Four of these are the

[14] James W. Peltier and John A. Schribrowsky. (1997). The use of need-based segmentation for developing segment-specific direct marketing strategies. John Wiley & Sons, Inc., and Direct Marketing Educational Foundation, Inc.,Volume 11, Number 4, pp. 53-62.

[15] Banwari Mittal and Julie Baker. (1998). The services marketing system and customer psychology. Psychology & Marketing Vol. 15(8), John Wiley & Sons, Inc., pp. 727–733.

conventional four Ps of the marketing mix, comprising product, price, place, and promotion. Product translates for services as service design, and place as location and distribution (e.g., distance to service sites, home delivery, 24-hour availability, etc.). Price and promotion have common meaning for goods and services. To these four Ps are added three other Ps, unique to services: people (service employees who produce and deliver the service), process (the service production procedures and protocol), and physical facilities (the surroundings in which the service production is housed). These three Ps comprise the service delivery system. The interface between the customer and the service delivery system is the service encounter. The authors proposed that it is useful to think of both the customer and the service encounter as part of the services marketing system, because the service encounter is where the service actually happens. Furthermore, the customer is not merely a passive recipient of the service product; rather, he or she actually helps produce the service. Without his or her participation, no matter how brief and perfunctory, the service could not happen.

Carl E. Batt and James E. Katz (1998)[16] conducted a study on Consumer spending behaviour and telecommunications services in among telecom customers of United Sates. They concluded that beyond basic local telephone, long distance, and cable TV, most current telecom services within the US market are perceived luxuries. To most consumers, they are neither particularly important nor exciting. Moreover, demand is limited by narrow acceptable price ranges, budget constraints, and assimilation habits. Regarding market segmentation, there is strong evidence for the 80/20 rule. While 80% of consumers sharply limit their final purchase considerations, the remainder defend much greater additional spending. These 'heavy telecom spenders' tend to be young and technologically oriented. Moreover, they generally perceive telecom services as necessities rather than as luxuries, view many services as fun and exciting, and expect to substitute telecom for other expenditures. On the other hand, heavy spenders rarely have more disposable income than do average consumers.

[16] Carl E. Batt and James E. Katz. (1998). Consumer spending behavior and telecommunications services: A multi-method inquiry. Telecommunications Policy, Vol. 22, No. 1, Elsevier Science Ltd., pp. 23-46.

Seungjae Shin et al. (1998)[17] studied pricing strategies suitable for telecommunications industry. They observed that to devise a customer oriented pricing strategy thorough analysis of customers' call behaviour pattern is required. They suggest Strategic Information Management System as a strong tool to get the customers' call behaviour pattern and to formulate appropriate pricing strategies.

Adrian Payne and Pennie Frow (1999)[18] in their paper 'Developing a Segmented Service Strategy: Improving Measurement in Relationship Marketing' addressed the need for the development of a segmented service strategy. A four step framework for developing a segmented service strategy is proposed. They are: Define the market structure, Segment the customer base and determine segment value, Identify segments' service needs and Implement segmented service strategy. Marketing activity directed at retaining customers can be expensive, and needs to be closely evaluated against measured results. The most successful retention programmes in the future will segment customers according to their existing and potential lifetime profitability and identity the type and frequency of marketing activity that should be directed at each segment. More refined segmentation strategies, based on service requirements and relative performance represent a great opportunity for increased long-term profitability.

Pinaki Das and Srinivasan P. V. (1999)[19] in their paper 'Demand for telephone usage in India' estimates price elasticities of demand for aggregate telephone usage in India using alternatively national level time series data and a panel data set consisting of annual observations on 19 Indian States. It also makes use of individual call data obtained from Public Call Offices (PCOs) to obtain own price elasticities of local and long distance calls separately. The price elasticity of long distance calls is much higher than that observed in developed countries. Price elasticity of demand for local calls, however, appears to be comparable to that in

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[17] Seungjae Shin, Gilju Park, Wonjun Lee, and Sunmi Lee. (1998). How to Make Telecom Pricing Strategy Using Data Warehouse Approach. Proc., 31st Annual Hawaii International Conference on System Sciences, IEEE., pp. 55-60.

[18] Adrian Payne and Pennie Frow. (1999). Developing a Segmented Service Strategy: Improving Measurement in Relationship Marketing. Journal of Marketing Management 15, pp. 797-818.

[19] Pinaki Das and Srinivasan P. V. (1999). Demand for telephone usage in India. Information Economics and Policy 11, Elsevier Science B. V., pp. 177-194.

most other countries. These elasticities imply that the current level of cross subsidy is sub-optimal and raising government resources through an increase in the price-cost mark-up on long distance traffic can be highly inefficient. This justifies the current restructuring of telecom tariffs in India.

Jha S. M. (2000)[20] argued that sky is the limit for marketing of services. Innovation is the key element in services marketing. There are a number of services likely to be productive if the policies and strategies are innovated. Communication services are one among them waiting for a major change. He suggested five levels of product as: core services, generic product, expected services, augmented services and potential services. The author added that telecommunication services play an incremental role in the multi dimensional development activities. A well functioning telecommunications network is an essential component of economic infrastructure. The application of modern marketing principles in telecommunication services would make ways for generation of profits and at same time would also make the service affordable to the users at large. The telecom organisations need to bridge over the gap between the services-promised and services offered. It is right to mention that the first and foremost task before the Department of Telecommunications in the Indian perspective is to improve the quality of employees.

Lars Grønholdt et al. (2000)[21] studied the relationship between customer satisfaction and loyalty based on European Customer Satisfaction Index (ECSI). The basic ECSI model is a structural equation model with latent variables. The model links customer satisfaction to its determinants and, in turn, to its consequence, namely customer loyalty. The determinants of customer satisfaction are perceived company image, customer expectations, perceived quality and perceived value (`value for money'). Perceived quality is conceptually divided into two elements: `hard ware', which consists of the quality of the product/service attributes, and `human ware', which represents the associated customer interactive elements in

[20] Jha S. M. (2000). Services Marketing. Himalaya Publishing House, Mumbai, India, pp. 27, 51-55, 590.

[21] Lars Grønholdt, Anne Martensen and Kai Kristensen. (2000). The relationship between customer satisfaction and loyalty: cross-industry differences. Total Quality Management, Vol. 11, Nos. 4/5 & 6, pp. 509-514.

service, i.e. the personal behaviour and atmosphere of the service environment. The authors claimed that the Danish applications of the ECSI model have been very good. The model fits well in Denmark and seems to be sufficiently flexible for different industries.

Lee J. and Feick L. (2001)[22] suggested that the opinions of consumers regarding pricing plan, coverage of the calling area ,the clarity of sound, precision of billing of services and easy access to provider are primarily be considered for measuring the customers satisfaction of cellular mobile customers.

Phil Stone (2001)[23] in book 'Make Marketing Work for You' explains the marketing techniques to boost the profits. According to him marketing concentrates are selling the right products at right price in the right place at the right time. The five essential components of essential strategy are: (i) Potential customers must be made aware of the company's existence (ii) They need to know what product the company is offering (iii) The customers must be advised how the products will satisfy their needs (iv) The customers must perceive the company's product as being the best to suit their needs (v) They must be persuaded actually to make a purchase. The author observed that marketing is a never ending process – the organisation must review the performance if they want to retain their competitive advantage. He remind the organisation to keep track on what the competitors are doing and concentrate on fulfilling the desires of consumers in the market.

Peter McBurney et al. (2002)[24] in their article 'Forecasting market demand for new telecommunications services: an introduction' suggested that while developing marketing strategies for telecommunication services, in addition to conventional 'Four Ps of marketing - Product, Price, Promotion and Place', marketers need to consider a fifth P, the Permission. The argument is supported by

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[22] Lee J. and Feick L. (2001). The impact of switching costs on the customer satisfaction-loyalty link: Mobile phone service in France. Journal of Services Marketing, 15(1), pp. 35-48.

[23] Phil Stone. (2001). Make Marketing Work for You. How To Books Limited. United Kingdom, pp. 11, 28-30, 89.

[24] Peter McBurney, Simon Parsons, and Jeremy Green. (2002). Forecasting market demand for new telecommunications services: an introduction. Telematics and Informatics 19, Elsevier Science Ltd., pp. 225-249.

the fact that most telecommunications services in most countries are regulated, to a greater or lesser extent, by telecommunications-specific laws and agencies.

Ramaswamy V. S. and Namakumari S. (2002)[25] explain that marketing strategy is the complete and unbeatable plan, designed specifically for attaining the marketing objectives of the firm/business unit. The marketing objectives indicate what the firm wants to o achieve; the marketing strategy provides the design for achieving them. The formulation of marketing strategy consists of three main tasks: selecting the target market, positioning the offer and assembling the marketing mix. The authors stated that competitive advantage is closely linked to strategy. It is through strategy that a firm creates a competitive advantage; and it is by putting its competitive advantage to use that a firm actually operates its strategy. Strategy creates and also uses competitive advantage.

Zig Ziglar (2002)[26] stated that people buy what they want when they want it more than they want the money it costs. He explains that each sale close should be an educational process by which sales person are able to raise the value of the product or service in the prospect's mind. Selling is essentially a transfer of feeling. The author cited Anthony J. Allessandra (1982) for describing the reasons for customer defection. In the average business 68% of the customers who quit trading with them left because of indifference and apparent lack of interest on the part of the seller's employees, 14% left because of unadjusted complaints, 9% left because they could buy at lower prices elsewhere, 5% left to buy from friend or relative, 3% moved to another area and 1% were lost through death.

Antreas D. Athanassopoulos and Anastasios Iliakopoulos (2003)[27] in their paper 'Modelling customer satisfaction in Telecommunications: assessing the effects of Multiple transaction points on the perceived Overall performance of the provider'

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[25] Ramaswamy V. S. and Namakumari S. (2002). Marketing Management - Planning, Implementation and Control. Macmillan India Ltd., New Delhi, pp. 137-150.

[26] Zig Ziglar. (2002). Zig Ziglar's Secrets of Closing the Sale. Magna Publishing Co. Ltd., Mumbai, India, pp. 31, 47, 83, 111.

[27] Antreas D. Athanassopoulos and Anastasios Iliakopoulos. (2003). Modelling customer satisfaction in Telecommunications: assessing the effects of Multiple transaction points on the perceived Overall performance of the provider. Production and Operations Management, Vol. 12, No. 2, Summer 2003, pp. 224 -245.

explain customer satisfaction of residential customers of a major European telecommunications company. Customer satisfaction is seen as the overall performance of the telecommunications company stemming from adequate service provision, value for money, loyalty, and relationship management. Corporate image has a positive effect on the overall perceived performance of the telecommunications organization. The corporate image of an organization, irrespective of the market conditions, cannot be built and sustained without the assistance of the incidence-driven performance.

Roland T. Rust et al. (2004)[28] described that customer equity is made up of three components and key drivers (i) Value equity: Customers' objective assessment of the utility of a brand based on perceptions what is given up and what is received. Three drivers of value equity are quality, price and convenience. (ii) Brand equity: Customers' subjective and intangible assessment of the brand, above and beyond its objectively perceived value. Three key drivers of brand equity are customer brand awareness, customer brand attitudes, and customer perception of brand ethics. (iii) Relationship equity: Customers' tendency to stick with the brand, above and beyond objective and subjective assessment of the brand. Four key drivers of relationship equity are loyalty programs, special recognition and treatment programs, community – building programs and knowledge building programs.

Tomi T. Ahonen et al. (2004)[29] explained in their book '3G Marketing – Communities and Strategic Partnerships' that, in 1990s mobile operators underutilised marketing and only focused on rapid expansion of capacity and connecting new subscribers. Modern marketing is needed for the success of today's mature and competitive mobile services industry. The success in 3G is dependent on successfully buildings strategic partnership by covering issues from market intelligence to sales channel support. The authors observed that with more enlightened customers becoming increasingly selective with more operators, and as more players enter the mobile telecom markets, the marketing tools and process

[28] Roland T. Rust, Valarie A. Zeithaml, and Katherine Lemon. (2004). Customer - Centered Brand Management. Harvard Business Review, September 2004, pp. 110-118.

[29] Tomi T. Ahonen, Timo Kasper and Sara Melkko. (2004). 3G Marketing - Communities and Strategic Partnerships. John Wiley & Sons, Ltd., England, pp. 1-2, 31-33, 298-299.

need to be increasingly refined and upgraded. Operators must learn to stop trying to offer everything to everybody under identical conditions and terms. The real world of profitability and customer orientation requires focussed marketing efforts especially segmentation. It is vital that the front line staff is well trained, has right attitude of customer service, and is motivated to satisfy the customer. The new mobile industry will be fighting against the entrenched 'conventional wisdom' in telecoms, the internet and content industries. Many innovators will face obstruction from those who say it cannot be done. Because the speed of growth of mobile telecom services will be so great, the winning in this environment requires courage to take a bold stand and follow - through. According to the authors the next generation wireless is not about technology, it is all about marketing.

Aaker A. David (2005)[30] explains about strategic options in his book 'Strategic Market Management'. The strategic options will specify three things: (i) Value propositions – what the offering provides to the buyer and user of the product or service. The value proposition is not limited to functional benefits but can include social, emotional and self- expressive benefits. (ii) Assets and Competences - the bases for sustainable competitive advantage. (iii) Functional strategies and programs - to support the value proposition and development and enhancement of the assets and competencies. These strategies and programs can involve such functional areas such as manufacturing, distribution, information technology, quality, customer relationships brand building, and communications. Aaker further stated that segmentation is often the key to developing sustainable competitive advantage. In strategic context, segmentation means the identification of customer groups that respond differently from other groups to competitive offerings. The development of a successful segmentation strategy requires the conceptualisation, development and evaluation of a targeted competitive offering.

Chin Chin Wong and Pang Leang Hiew (2005)[31] studied the correlations between factors affecting the diffusion of mobile entertainment in Malaysia. The

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[30] Aaker A. David. (2005). Strategic Market Management, (7th ed.). Wiley India (P.) Ltd., New Delhi, pp. 33, 44-45.

[31] Chin Chin Wong and Pang Leang Hiew. (2005). The Correlations between Factors Affecting the Diffusion of Mobile Entertainment in Malaysia. ICEC'05, Xi'an, China, pp. 615-621.

study deals with a timely issue and provides an overview of the current state of deployment of mobile entertainment services in Malaysia from consumers' perspectives. Based on available statistics, in order for local telcos to be successful, a substantial end user market needs to be created. For this to occur, current (and potential) users of mobile devices not only need to be persuaded that the new applications and services on offer are useful and relevant to their lives; suitable pricing scheme must be adjusted in order to encourage mass market adoption of mobile entertainment services in Malaysia. The success of mobile services deployment in the future depends ultimately on the successful development and the satisfaction of an end user market rather than technical development. The youth are the most fertile groups for absorbing and incorporating the changes in mobile communications development.

Dan Steinbock (2005)[32] in his book 'The Mobile Revolution – The Making of Mobile Service Worldwide' explains about the explosion of mobile communication services worldwide. It explains about the growth of multimedia messaging services, location based services, mobile phone television and mobile value added services in third generation and fourth generation platform, particularly in the markets of Europe, United States and Asia Pacific. The author detailed about the evolution of wireless telephony from maritime markets in 1890s to Multimedia cellular markets in 2000s. The author stated that in South Asia, India will be a significant engine of global subscriber growth. He suggested operational effectiveness and strategy are two basic ways for individual companies to set themselves apart from the rest. With strategic positioning a company may use mobility, among other things to provide different array of services or different customer relationship arrangements.

John W. Mullins et al. (2005)[33] stated that market orientation has significant positive effect on various dimensions of performance, including return on assets,

[32] Dan Steinbock. (2005). The Mobile Revolution – The Making of Mobile Service Worldwide. Kogan Page, London, pp.16-25, 36-38.

[33] John W. Mullins, Orville C. Walker Jr., Harper W. Boyd Jr. and Jean-Claude Larreche. (2005). Marketing Management - A Strategic Decision-Making Approach, (5th ed.), McGraw-Hill Irwin, New York, pp. 21-30.

sales growth and new product success. The guide lines for market oriented management are: create customer focus throughout the business, listen to the customer, define and nurture distinctive competence, define marketing as market intelligence, target customers precisely, manage for profitability, nor for sales volume, make customer value the building star, let the customer define the quality, measure and manage customer expectations, build customer relationship and loyalty, define business as a service business, commit to continuous improvement and innovation, manage culture along with strategy and structure, grow with partners and alliances, and destroy marketing bureaucracy. The primary focus of marketing strategy is to effectively allocate and coordinate resources and activities to accomplish the firm's objectives within a specific product market. Therefore the critical issue concerning the scope of marketing strategy is specifying the target markets for a particular product or product line. Next, firms seek competitive advantage and synergy through a well - integrated program of marketing mix elements (the 4Ps of product, price, place, promotion) tailored to the needs and wants of potential customers in that target market. The product life cycle (PLC) is a concept holds that a product's sales change over time in a predictable way and that products go through a series of five distinct stages: introduction, growth, shakeout, maturity and decline. The PLC concept is extremely valuable in helping management look into the future and better anticipates and changes will need to be made in strategic marketing programs.

Jun Xue and Bin Liang (2005)[34] studied the customer loyalty of Chinese telecommunication industry. The study observed that the major driving factors of customer loyalty of Chinese telecommunication industry are service quality, trust, switching cost and staff loyalty. Judging from empirical results, the authors argued that high quality of service is conducive to the formation and development of customer loyalty. Trust is a prerequisite of repurchasing, became the key element of customer loyalty. Even though switching cost bears no obvious influence on long-term purchase, recommendation and expected repurchase, but according to many indications, the influence on loyalty brought by the switching cost should not be

[34] Jun Xue Bin Liang. (2005). An Empirical Study of Customer Loyalty of the Telecommunication Industry in China. ICEC'05, Xi'an, China, pp. 335-342.

neglected. Staff loyalty is an external reason to influence customers' loyalty. It is generally considered that cultivating staff loyalty is a good method to strengthen competitiveness of an enterprise.

Vinnie Jauhari (2005)[35] in her research article "Information Technology, Corporate firms and Sustainable development: Lesson from cases of success from India," explains the E-Chopal initiatives of M/s ITC in north Indian States. The conventional channel of selling soya takes procurement cost of Rs 700/ton. The ITC could reduce the procurement cost to Rs 200/ton through E-Chopals. ITC started the process of disintermediation. On an average the setting up of an E-Chopal cost around Rs 40000/. Hence by providing the information access to the farmers through ICT (Information and Communication Technology), the value is added directly. Value addition of products and services produced in rural markets are possible through proper information and communication flow.

Jaishri Jethwaney and Shruti Jain (2006)[36] in their book 'Advertising Management' elaborate advertising, sales promotion and public relations and their effects on brand building. An individual customers mind is bombarded day in day out by various messages. Due to media proliferation, there is more exposure to commercial messages. The individual can feel media fatigue due to the information overload. The mind is a wonderful mechanism and it knows how to perceive selectively. Known as the process of selective perception, the individual is capable of seeing, hearing, and reading the massages that match his individual value system. This makes the job of advertisers all the more difficult as it is not enough to just position a product vis-a-vis other products. They must also find a place in the mind of the individual consumer to enable him to retain the message about the concerned product. The position of the brand is the perception it brings about in the mind of a target customer. He suggested that creative thinking rather than analytical thinking is required for developing effective advertisements.

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[35] Vinnie Jauhari. (2005). Information Technology, Corporate firms and Sustainable development: Lesson from cases of success from India. Journal of Services Research, Volume 5, Number 2, pp. 76-85.

[36] Jaishri Jethwaney and Shruti Jain. (2006). Advertising Management. Oxford University Press, New Delhi, India, pp. 7-17.

Joe Peppard and Anna Rylander (2006)[37] in their paper 'From Value Chain to Value Network: Insights for Mobile Operators' introduce the value network concept and illuminates on its value creating logic. To illustrate its application, the provision of mobile services and content is explored to identify potential strategic implications for mobile operators. Mobile content and services is the future: a world where customers will, through a hand held device, transact banking services, make purchases, access news and stories, play games, view videos and TV, gamble, etc. However, it is unlikely that today's mobile operator will be able to develop the types and range of content and services that consumers will increasingly demand. They may not even wish to. A host of different players in the mobile ecosystem are already jockeying for position, including infrastructure, content providers, content aggregators, software developers and device manufacturers. This ecosystem is a set of firms that co-create value. Those who understand the sources of value in the network and are able to exploit them will be the winners.

Mark Daniel (2006)[38] explains business strategy as the art and science of informed action to achieve a specific vision, an overarching objective, or a higher purpose for a business enterprise. He describes Rights of strategy as Right Process, Right attitude, Right people, Right content, Right thought, Right creativity and Right results. The author sated that the ability to drive customer relationships to a higher level is an essential element in strategic assessment and valuation. All variables of product, brand and service have to be taken care in strategic evaluation. Competitive differentiation in the areas that matter to customers and the business system are a critical end point of successful strategy. Options which truly create "clear water" between a business and its rivals will create both immediate and future value for the firm.

Mathur U. C. (2006)[39] stated that marketing success comes from Innovation, Quality and Service. According to him the product acceptance takes mainly four

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[37] Joe Peppard and Anna Rylander. (2006). From Value Chain to Value Network: Insights for Mobile Operators. European Management Journal Vol. 24, Nos. 2–3, Elsevier Ltd., pp. 128–141.

[38] Mark Daniel. (2006). The Elements of Strategy: A pocket guide to the essence of successful business strategy. Palgrave Macmillan, New York, pp. 1-2, 53-54.

[39] Mathur U. C. (2006). Strategic Marketing Management - Text and Cases. Macmillan India Ltd., New Delhi, pp. 110-111.

steps: Product knowledge or awareness comes from advertising, Interest in the product, which makes prospective customers obtain more information about the product, judging the value of the product, and the trial stage, when the customer tries out the product before adopting it. Even for the top quality product, communications with the customers like Creative advertisements, Sales promotion and Publicity are vital.

Pat Weymes (2006)[40] in his book 'Win - Win Sales management - A powerful new approach for increasing sales from your team' explains that there are four areas in which a sales manager requires accurate information: The level of service expected by the customer, the current level of service given by the sales person, the service levels provided by the company sales team and the level of service provided by the competitors. He further adds it must be easier to hold on to an old customer than to get a new one and research indicates it is also up to five times less expensive. It is difficult to calculate the actual cost of customer loss through poor service but it probably involves: cost of legal action or advice, loss of revenue through customer refusal to pay, loss of management and staff time investigating details, loss of sale or a customer, loss of sales through people who heard about the company failure and cost of replacing the business that has been lost. Outstanding service never happens by accident. It is always the result of outstanding teamwork by motivated people supported by enthusiastic management selling goods and services to customers.

Priyanka Kokil and Manoj Kumar Sharma (2006)[41] in their paper titled, 'Strategic Flexibility: Study of Selected Telecom Companies in India', compare Bharti Tele-Ventures Limited (BTVL), the Airtel and Bharat Sanchar Nigam Limited (BSNL)'. They observed that the challenges imposed on the Indian telecom market are increasing day by day because of the new technologies and knowledge. India offers vast scope for growth. There is great need of Indian Telecom companies to be flexible. The authors concluded that the marketing flexibility of BSNL is low

[40] Pat Weymes. (2006). Win - Win Sales management - A powerful new approach for increasing sales from your team. Pentagon Press, New Delhi, pp. 4-14, 199-203.

[41] Priyanka Kokil and Manoj Kumar Sharma. (2006). Strategic Flexibility: Study of Selected Telecom Companies in India. Global Journal of Flexible Systems Management, Vol. 7. Nos. 3 & 4, pp. 59-66.

and that of Airtel is high. The BSNL Tariffs plans are not that much flexible. The Airtel tariff plans are very flexible according to the customer requirements. They provide easy recharge coupons and top-up recharge schemes which were not yet implemented by BSNL. The Airtel launched new schemes like ring tones, games etc. The customer satisfaction through new services, new schemes, good quality, and cost is most important parameters by which any company can withstand in the competitive market. As it is observed that in the case of BSNL where the tariff plans are of low cost, but due to the poor quality of services and customer care the ARPU and market share are low. In the case of Airtel, the fundamentals of cost and quality are met and the various flexibilities have become the bases for enhanced competitiveness.

The report on quality of service and customer satisfaction survey (2006)[42] of Telecom Regulatory Authority of India assessed the quality of service and customer satisfaction of basic land line telephone services and cellular mobile telephone services in India. The parameters taken for this assessment in cellular mobile telephone services are satisfaction in provision of service, billing, help services, network performance, maintainability, satisfaction with supplementary services, and overall customer satisfaction. The parameters taken for basic landline telephone services are provision of telephone after registration of demand, fault incidences, fault repair by next working day, mean time for repair, metering and billing credibility, customer care promptness in dealing with request for telephone shift, request for closure, request for additional facility activation, answering of customer calls, and time taken for refund of deposit after the closure.

Tanguturi and Harmantzis (2006)[43] in their paper titled "Migration to 3G wireless broadband internet and real options: The case of an operator in India" detailed about the different generations of mobile communications. The paper focuses on third generation wireless technologies and on alternative technologies for

[42] The Report on Quality of Service and Customer Satisfaction Survey. (2006). An Objective Assessment of the Quality of Service of basic services and cellular mobile service, conducted by TUV South Asia Pvt. Ltd., Mumbai for Telecom Regulatory Authority of India, pp. 34-35.

[43] Venkata Praveen Tanguturi and Fotios C. Harmantzis. (2006). Migration to 3G wireless broadband internet and real options: The case of an operator in India. Telecommunications Policy, 30, Elsevier Ltd., pp. 400-419.

wireless local area networks. The authors present the evolutionary migration path from second to third generation systems. Technological, economic and behavioural factors related to decision-making towards the migration are proposed. This paper has presented the case of BSNL, the national incumbent telecommunications provider in India. The case study reports briefly on BSNL's service offerings to its customers, its strengths and its market position.

Vishal Sethi (2006)[44] in his edited work 'Communication Services in India 1947 to 2007' observed that development of communication infrastructure being crucial to the growth of vital sectors like agriculture, industry etc. The demand for communication facilities has continuously been rising outstripping the growth and creating conditions of shortage and congestion. Due to high cost and poor quality of services, it was recognised that capacities must expand much more rapidly and competition be introduced to improve the quality of service and encourage induction of new technology. Communications has become especially important in recent years because of the enormous growth of information technology and its potential impact on rest of the economy.

Zillur Rahman (2006)[45] studied the service quality in Indian cellular telecommunication industry. This study deals with the measurement of service quality at cellular retails outlets in the Indian environment with a focus on perception and expectation of service quality from the customers' perspective. The research was conducted via a structured questionnaire base on SERVQUAL model. The service providers Airtel, BSNL, Hutch and Idea are considered for the study. The study was conducted in fifty districts of the national capital region of Delhi. The Indian cellular telecommunication industry received strong rating on the tangibles dimensions, particularly the employees' neat and professional appearance, and low rating on empathy dimension, particularly service providers' interest difference. The tangible dimension has been shown to be an aspect of service quality that is extremely important to customers. The comparison among cellular telecommunication

[44] Vishal Sethi. (2006). Communication Services in India 1947 to 2007. New Century Publications, New Delhi, pp. 1-14.

[45] Zillur Rahman . (2006). Superior service quality in Indian Cellular Telecommunication Industry. Services Marketing Quarterly, 27:4, pp. 115-139.

companies offers several competitive insights. The Airtel is the highest out-performing company. The Airtel hold an advantage over others in the area of perceived tangible, reliability, responsiveness and empathy. Hutch holds an advantage over others in the area of assurance.

Carmen Antón et al. (2007)[46] studied the mediating effect of satisfaction on consumers' switching intention. This article provides evidence that some service provider behaviours precipitate relationship dissolution, whereas other behaviours create a predisposition to switch. This different effect is observed through the mediating effect of customer satisfaction. While poor service quality and low firm commitment undermine consumer satisfaction and have only an indirect effect on switching intentions, price unfairness and anger incidents have a strong effect on switching, both directly and indirectly through satisfaction. The study suggests that poor quality and the perception of a weak commitment or lack of interest on the part of the firm towards consumers are variables that predispose to relationship dissolution, insofar as they progressively undermine consumers' trust in the firm. The empirical test has demonstrated that the direct effect of these variables on switching intention is not even significant, although they do positively affect dissatisfaction. Along with these variables, it has been shown that other factors act as immediate triggers of the switching intention, namely a price policy perceived as being unfair and consumers' experience of a conflictive event or an episode that generates their suspicion. Their effect on switching intention is strong and significant. Thus, these are variables that precipitate the switching intention and predominate over any other motive of "disenchantment" the consumer may have. The results advance the idea that the intention to terminate the relationship is immediate when the firm takes certain measures resulting in unfair pricing or a conflict with the customers, but other actions or failings in their performance, for example poor service quality or low commitment to the customer, do not lead to an immediate switch. Instead, these factors create dissatisfaction or unhappiness that is the true cause of the termination in the end. With regards to the management

[46] Carmen Antón, Carmen Camarero, and Mirtha Carrero. (2007). The Mediating Effect of Satisfaction on Consumers' Switching Intention. Psychology & Marketing, Vol. 24(6), Wiley InterScience, Wiley Periodicals, Inc., pp. 511-538.

implications, the diagnosis of the motives behind consumers' decisions to terminate the relationship may serve as guidelines for companies wishing to avoid customer defection.

Chatura Ranaweera (2007)[47] in his research paper titled 'Are satisfied long-term customers more profitable? Evidence from the telecommunication sector' challenged the traditional dominant view, that customer satisfaction, in the long term, leads to customer loyalty and that loyal customers are profitable customers. Companies strive to establish long-term customer relationships based on the premise that long-term customers with positive attitudinal dispositions (and therefore, loyal) are in general more profitable than others. Results indicate that such generalisations may be tenuous. While some effects of satisfaction and duration on behavioural intentions were found to support predominant beliefs in research, results were mixed. The combined effects of satisfaction and duration on behavioural intentions indicated that long-term customers might not necessarily be more profitable than new customers. The data for this study were obtained through a large-scale survey of 3,000 fixed line telephone customers in south-eastern England. These findings add an important cautionary note to firms who formulate their marketing strategies with the fundamental aim of establishing and maintaining long-term customer relationships, or indeed, believe that long-term customers with a positive attitudinal disposition are essentially profitable customers.

David L. Kurtz and Louis E. Boone (2007)[48] explain the strategic implications of marketing in the 21st century in their book 'Principles of Marketing'. They described that unprecedented opportunities have emerged out of electronic commerce and computer technologies in business. These advances and innovations have allowed organisations to reach new markets, reduce selling and marketing costs, and enhance their relationship with customers and suppliers. As a new universe for consumers and organisations is created, marketers must learn to be creative and think critically about their environment. They must constantly look for

[47] Chatura Ranaweera. (2007). Are satisfied long-term customers more profitable? Evidence from the telecommunication sector. Journal of Targeting, Measurement and Analysis for Marketing, Vol. 15, 2, Palgrave Macmillan Ltd., pp. 113-120.

[48] David L. Kurtz and Louis E. Boone. (2007). Principles of Marketing, (12th ed.). South-Western, Thomson Learning Inc., New Delhi, p. 32.

ways to create loyal customers and build long-term relationships with those customers, often on a one-to-one basis. The marketers must be able to do this faster and better than the competition. And they must conduct their business according to highest ethical standards.

Hugh Burkitt and John Zealley (2007)[49] observed that marketing function, especially in a large global company, faces enormous challenges. Competition is more intense in virtually every industry. The current marketing landscape is most complex it's ever been. Media fragmentation and consumers' segmentation demand more sophisticated and differentiated strategies. The characteristics of great marketing are cleaver use of research and insight, innovative product development, internal marketing, informative and attractive marketing communications and a new approach to distribution. They assured that, it is possible to translate a niche positioning with the right strategy into a mainstream proposition.

Jean-Jacques Lambin et al. (2007)[50] expressed that the philosophy at the root of marketing - what may be called the market orientation concept - rests on the theory of individual choice through the principle of consumer sovereignty. They identify two faces of marketing process as (i) The Strategic marketing process, the analysis oriented approach and (ii) The Operational marketing, the action oriented approach. The authors proposed the definition of marketing process as: In a market economy, the role of market-driven management is to design and promote, at a profit for the firm, added value solutions to people and/or organisation's problems. They further explain that the term *design* refers to strategic marketing and the term *promote* to operational marketing: by added value solutions one means products or services satisfying customers' needs better than competitors' offerings. The authors also mentions about the role of marketing communication mix. Marketing communication refers to all the signals or messages made by the firm to its customers, distributers, suppliers, shareholders, pubic authorities and its own personnel. The four major tools called the communication mix are advertising,

[49] Hugh Burkitt and John Zealley. (2007). Marketing Excellence – Winning companies reveal the secrets of their success. Wiley India Pvt. Ltd., New Delhi, pp. 1-7, 52.

[50] Jean-Jacques Lambin, Ruben Chumpitaz and Isabelle Schuiling. (2007). Market -Driven Management: Strategic and Operational Marketing, (2nd ed.). Palgrave Macmillan, New York, 6, 236-248, 362-363.

personal selling, promotion and public relations. Although these means of communication are different, they are highly complementary. The authors suggest differentiation is one of the generic strategies in the existing market. Differentiation can take many forms: Brand image, technology, features, customer service, dealer network and so on. Differentiation protects the firm from the five competitive forces - rivalry among existing firms, threat of new entrants, bargaining power of suppliers, bargaining power of buyers and threat of substitute products - proposed by Michel Porter. Other generic strategies in the existing market are overall cost leadership and focusing on the needs of a particular segment. They describe alternative growth strategies such as: (i) Penetration Strategy: increase sales of existing products in the existing market (ii) Market Development Strategy: increase sales of existing products in the new market (iii) Product Development Strategy: increase sales of existing markets with new or modified products. (iv) Integrative growth: to grow within the industrial chain, e.g. Forward integration, Backward integration and Horizontal integration (v) Diversifications: to grow outside the industrial chain. A market leader can envisage different strategies such as Primary demand development, Defensive strategies, Aggressive strategies and De-marketing strategies. The marketing strategies may be Market Challenger like lateral attacks aim to confront the leader over one or another strategic dimension for which it is weak or ill prepared. The marketing strategies may also be like market follower strategies pursue a policy of peaceful coexistence by adopting same attitude as market leader.

Rao U. S. and Sai Sangeet (2007)[51] in their study titled "Strategies for succeeding at the Bottom of Pyramid (BOP) market in Telecom Services Sector" describe the opportunities of marketing of telecom services among the poor, the bottom of the economic pyramid. The authors cited C. K. Prahalad and Allen L. Hammond (2002), denotes that around 4 billion people in the world at the bottom of the economic pyramid with a purchasing power of USD 1500 per year or less. The bottom of pyramid market is a huge opportunity waiting to be tapped. The BOP

[51] Rao U. S. and Sai Sangeet. (2007). Strategies for succeeding at the Bottom of Pyramid (BOP) market in Telecom Services Sector. Conference on Global Competition & Competitiveness of Indian Corporate, IIM Kozhikode, pp. 1-12.

consumers may also take up the role of intermediaries. The challenge is to identify and accept the uniqueness of these markets and develop strategies to suit their needs. These consumers should be pushed higher up the value chain by a process of co-creation which would benefit both the company as well as the BOP community. By working closely with their customers, service providers can co-create value and deliver innovation that will form the basis for a competitive advantage and mutual success.

Sadia Jahanzeb and Sidrah Jabeen (2007)[52] studied churn management in the telecom industry of Pakistan. The two telecom service providers selected for the study are Telenor and Ufone. The objectives of the research are to provide an insight into rapidly emerging issue of churn in telecom sector of Pakistan, describe the relevant aspects of churn management strategies and gauge their effectiveness in customer retention. The study reveals that subscribers dissatisfaction with any dimension of price, voice quality and network coverage are the main reasons for customer churn at both Ufone and Telenor.

Samantan S. K. et al. (2007)[53] empirically proved that access price or fixed monthly fee for mobile services is the major factor that governs the percentage of people subscribing (penetration) to the services. There exists a strong negative correlation between access price and penetration of subscription for mobile telecommunication services in developing and developed countries. The call charge has less of an impact on the penetration.

Sridhar Varadharajan (2007)[54] studied the factors affecting growth of mobile telecom services in India. He observed that quick deployment, competition, advancement in technologies, and reduced prices have propelled the growth of mobile services in India. The traditional factors such as income, population and

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[52] Sadia Jahanzeb and Sidrah Jabeen. (2007). Churn management in the telecom industry of Pakistan: A comparative study of Ufone and Telenor. Database Marketing & Customer Strategy Management Vol.14, 2, Palgrave Macmillan Ltd., pp. 120-129.

[53] Samantan S. K., Woods J. and Ghanbari M. (2007). Impact of price on mobile subscription and Revenue. Journal of Revenue and Pricing Management, Vol. 7, 4, Palgrave Macmillan, pp. 370-383.

[54] Sridhar Varadharajan. (2007). Analysis of Inter-Regional Mobile Services Growth in India. Proceeding of 6th Conf. Telecomm Techno-Economics, Vol. 1, IEEE., pp. 1-6.

fixed line penetration do not have any significant impact on the growth of mobile subscription.

Xavier M. J. (2007)[55] in his book, 'Strategic Marketing: A guide for developing sustainable competitive advantage' explains that a business strategy can be evolved through: (i) Long term planning for the firm. (ii) Capability – opportunity fit, i.e. finding a fit between the firm's capabilities and opportunities in the environment. (iii) Planning to gain competitive advantage and (iv) Copability (copying + ability) in a turbulent environment. The author suggested that the marketing mix element s (product, price, place and promotion) offered by the competitors can be used to analyse the relative strengths and weakness of their offerings. He observed that advances in telecommunication and IT (Information Technology) have reduced the barriers of time and place for business. He describes that the competition can be studied using various models such as: (i) The game and sports model - A level playing ground is offered to all competitors (ii) The life model - Traditional marketing theory discusses industry competition in terms of product life cycle. (iii) The biological model - It assumes that the resources are limited and whichever 'corporate animal' is efficient in resource conversion will survive in long run. (iv) The economic model - According to basic economics, markets begin as monopolies, then move toward oligopoly and eventually toward pure competition (v) The war model - The war model has had greatest impact on business strategies. The most common forms of war strategies are: (a) Defensive war fare - the strong competitive moves are blocked (b) Offensive war fare - find a weakness in the leader and attack that point (c) Flanking war fare - move to an uncontested area (d) Guerrilla warfare - find a segment of the market small enough to defend.

Abdolreza Eshghi et al. (2008)[56] attempted to identify the underlying service - related factors and to understand their impact on customer satisfaction, repurchase intention and recommendation of service to others in the Indian mobile

[55] Xavier M. J. (2007). Strategic Marketing: A guide for developing sustainable competitive advantage. Response Books, New Delhi, pp. 12, 207-214, 254-255.

[56] Abdolreza Eshghi, Sanjit Kumar Roy and Shirshendu Ganguli. (2008). Service Quality and Customer Satisfaction: An Empirical Investigation in Indian Mobile Telecommunications Services. The Marketing Management Journal, Volume 18, Issue 2, pp. 119-144.

telecommunications market. They identified six factors: relational quality, competitiveness, reliability, reputation, support features and transmission quality represent the underlying dimensions by which Indian mobile phone customers assess the quality of their service. They examined the impact of above factors on customer satisfaction, repurchase intention and recommendation of services to others. It is found that relational quality, competitiveness, reliability, reputation and transmission quality factors emerged as significant predictors of customer satisfaction. Repurchase intention is influenced by relational quality, competitiveness, reliability and transmission quality. Finally, relational quality, competitiveness, reliability, reputation and transmission quality emerged as significant predictors of recommendation of services to others.

Chirag V. Erda (2008)[57] in his paper titled 'A comparative study on buying behaviour of Rural and Urban consumer on mobile phone in Jamnagar District', indicates that the rural customers are less quality, functions and brand conscious compared to urban customers. For the study, he collected data from 400 mobile users, 200 each from rural and urban areas from Jamnager District. The study indicates that rural consumer mostly use friends, TV, and mobile phone retailers as source of information. The author argue that in order to utilise the immense potential of rural market in India, companies need to develop specific marketing strategies and action plans taking into account the complex set of factors that influence consumer behaviour. Rural marketing cannot succeed if the marketing strategy and action plans are only extrapolation or minor modifications of the urban marketing strategy and plans.

Dong-Hee Shin and Won-Yong Kim (2008)[58] investigate switching barriers under the mobile number portability (MNP) in the U.S. mobile market. The findings indicate that customer satisfactions, switching barriers, and demographics significantly affect subscribers' intent to switch. Among them, switching barriers

[57] Chirag V. Erda. (2008). A comparative study on buying behaviour of Rural and Urban consumer on mobile phone in Jamnagar District. Marketing to Rural consumers – Understanding and tapping the rural market potential. Conference Proceedings, IIM Kozhikode, pp. 1-14.

[58] Dong-Hee Shin and Won-Yong Kim. (2008). Forecasting customer switching intention in mobile service: An exploratory study of predictive factors in mobile number portability. Technological Forecasting & Social Change 75, Elsevier Inc., pp. 854–874.

had the most significant influence, which raises a question of the effectiveness of MNP. The MNP in the U.S. mobile market is intended to play an important role in lowering switching costs which can increase the level competition among providers.

Fre´de´ric Jallat and Fabio Ancarani (2008)[59] explain the application of yield management and dynamic pricing in telecommunications sector. The subject of yield management and dynamic pricing is related to that of price discrimination, which is to take the profit opportunity of pricing according to different customer perceived value. Yield management can be helpful to manage capacity-related issues and to maximize profits. In order to make the most of their existing network, telecom operators have to take into account the flexibility of people who are ready to postpone their calls in order to get a better deal. In a more competitive multi-media environment, pricing and discount strategies are ways to promote their business. In order to exploit the full potential of yield management and dynamic pricing strategies, telecommunication firms are requested to leverage the existing knowledge of their customer base and to improve it through adequate customer relationship management (CRM) activities. As a consequence, demand calibration is very important before a telecommunication company thinks of optimizing revenue – as it is the case for traditional yield management. Demand calibration is usually defined as a function of price elasticity, time elasticity (length of time consumers could wait before placing their phone call) and time volatility (consumers' tendency to accept changes in rates over time). Since the telecommunications are undergoing a process of increasing competition and dynamic convergence, yield management and dynamic pricing strategies could be usefully applied to preserve and increase profitability.

Kevin Lane Keller (2008)[60] describes about brand building, brand measuring and managing brand equity in his book 'Strategic Brand Management'. He cited American Marketing Association (AMA) to define brand. A brand is a 'name, term, sign, symbol, or design, or a combination of them, intended to identify the goods

[59] Fre´de´ric Jallat and Fabio Ancarani. (2008). Yield management, dynamic pricing and CRM in telecommunications. Journal of Services Marketing, 22/6, Emerald Group Publishing Limited, pp. 465–478.

[60] Kevin Lane Keller. (2008). Strategic Brand Management - Building, Measuring and Managing Brand Equity. Pearson Education Inc., New Delhi, pp. 24, 60, 415-416.

and services of one seller or group of sellers and to differentiate them from those of competition". The strategic brand management process involves: (i) Identifying and establishing brand positioning. (ii) Planning and implementing brand marketing programs. (iii) Measuring and interpreting brand performance and (iv) Growing and sustaining brand equity. The author explains about Young and Rubicam's development of its Brand Asset Valuator (BAV), which measures brands on five fundamental measures of equity value and in terms of a broad array of perceptual dimensions. The five key components in BAV are: (i) Differentiation - measures the degree to which a brand is seen as different from others. (ii) Energy - measures the brand's ability to meet future consumer needs and attract new customers. (iii) Relevance - measures the breadth of a brands' appeal, but not necessarily its profitability. (iv) Esteem - measures how well the brand is regarded and respected – in short, how well it's liked. (v) Knowledge - measures how familiar and intimate consumers are with brand.

Lucio Fuentelsaz et al. (2008)[61] in their study titled "The evolution of mobile communications in Europe: The transition from the second to the third generation" examined the history, evolution and configuration of the mobile telecommunications industry in the European Union. The research focuses its interest on the different roles played by the regulator in Europe and in other regions of the world (mainly the US). The diffusion of GSM (Global System for Mobile communication) was extraordinarily fast in Europe, mainly due to the adoption of a unified standard from inception. This rapid diffusion has resulted in an important competitive advantage for European operators. Interestingly, while the regulator acted similarly in the case of UMTS (Universal Mobile Telecommunications Systems), the development of the latter has faced many problems and, presently, its diffusion is still low (about 5% in the EU). The paper also offers basic information on market structure that may be useful for extracting some preliminary conclusions about the degree of rivalry within the industry and the differences that can be observed between European countries. The earliest applications of mobile communications date back to the

[61] Lucio Fuentelsaz, Juan Pablo Maı´cas, and Yolanda Polo. (2008). The evolution of mobile communications in Europe: The transition from the second to the third generation. Telecommunications Policy, 32, Elsevier Ltd., pp. 436– 449.

1920s, but the credit for the first mobile phone is attributed to Martin Cooper who, when working for Motorola in 1973, made the first public call placed on a portable cellular phone in the US. The most of the pioneer initiatives of mobile communication took place in the United States at the beginning of the 1980s, which gave this country an initial advantage. The Confederation of European Post and Telegraph (CEPT) in 1982 decided to set a new digital standard and created a working group to develop a mobile network without boundaries inside the continent. The group was called Group Special Mobile (GSM). As a result of transfer of responsibilities, the function of elaborating the GSM specifications was passed from the CEPT permanent group to ETSI (European Telecommunications Standardization Institute). The CEPT Group Special Mobile became the ETSI Technical Committee GSM. The technology was named as GSM (Global System for Mobile communication), the first deployment with limited services took place in 1991. At the end of the year 1993, GSM technology had over one million users and coverage in the main cities.

Nag A. (2008)[62] describes that marketing strategy is the part of business or corporate strategy. Corporate strategy gives broad directions to the way a company should look for business opportunists and investment. Marketing strategy looks at ways and means of competing effectively in the market place. Corporate strategy relates to the entire organisation and all functional or operational areas - manufacturing, marketing, finance, and HR. Marketing strategy should be consistent with overall company objectives and goals in terms of growth market share, product-market diversifications and profitability. The internal competences equip companies to face, among others, the external environment for formulating and implementing marketing strategies. The environmental factors a business strategist should reckon with are: political factors, economic factors, sociological factors, Government policies, technology, competition, intermediaries and suppliers. A standard marketing plan consists of: key targets, situation review, SWOT (Strength, Weakness, Opportunities and Threat) analysis, strategy to achieve targets, marketing mix for achieving the strategy and action plan. The five important factors which

[62] Nag A. (2008). Strategic Marketing, (2nd ed.). Macmillan Publishers India Ltd., New Delhi, pp. 7-11, 140-141, 200-201.

influence consumer buying process are: Product or Brand, Buying situation, Customer motivation, Role agents in decision making, Social and personal factors. Segmentation is the key to positioning and is also the first step in developing strategy. Proper segmentation defines the domain or boundaries of competition. The author stated that differentiation is a base technique or strategy in marketing. Every company has to project the marketing package as different from its challengers or competitors. And, differentiation can be done on many ways - technology, raw material, product, quality, packaging and services etc. Assembling and managing the marketing mix is the basic marketing task; and, blending the marketing mix into a winning combination is a matter of strategy. Marketing success and failure depend to a large extend, on the choice and a balance of the marketing mix. In services marketing specific strategies are required to deal with intangibility, heterogeneity, inseparability and perishability. In a comprehensive marketing strategy for services the role of 'people factor' must also be highlighted. He quoted Peter F. Drucker that: 'Business has only two basic functions - Marketing and Innovation'.

Orville C. Walker Jr. and John W. Mullins (2008)[63] defines strategy as to specify (i) *What* (objective to be accomplished), (ii) *Where* (on which industries and product market to focus), and (iii) *How* (which resources and activities to allocate to each product-market to meet environment opportunities and threats and gain a competitive advantage). The primary focus of marketing strategy is to effectively allocate and coordinate marketing resources and activities to accomplish the firm's objectives within a specific product market. The firms seek competitive advantage and synergy through a well-integrated program of marketing mix elements (primarily the 4 Ps of product, price, place and promotion) tailored to the needs and wants of potential customers in that target market. Differentiation is the powerful theme in developing business strategies as well as marketing. As Michel porter points out, "A company can outperform its rivals only if it can establish a difference that it can preserve. It must deliver greater value to customers or create comparable value at lower cost or both". Most of the time differentiation is why people buy. The differences may be physical or perceptual. They recommend suitable marketing

[63] Orville C. Walker Jr. and John W. Mullins. (2008). Marketing Strategy: A Decision - Focussed Approach, (7th ed.). McGraw-Hill International Irwin, New York, pp. 6-7, 154-155.

strategies for different stages of product life cycle. Mass-market penetration, niche penetration and skimming are the strategies suitable for pioneers at introductory stage. Market leaders may adopt marketing strategies such as position defence, flanker, confrontation, market expansion, or strategic withdrawal at growth market stage. Share growth strategies for followers are frontal attack, leapfrog, flanking and encirclement, or guerrilla attack. Differentiation in quality of service and other product attributes is one of the strategic choices in matured markets. Harvesting, maintenance, profitable survivor and niche are the suitable strategies in declining markets.

Paul R. Timm (2008)[64] in his book 'Customers Service: Career Success through Customers Loyalty' explains about the process for developing the skills, attitudes, and thinking patterns needed to win customer satisfaction and loyalty. The process includes developing: (i) A heightened awareness of challenges and opportunities in customer service (ii) The willingness and ability to gather performance-enhancing feedback (iii) Specific behaviours that engage customers (iv) Telephone techniques for excellent service (v) The ability to create friendly web sites, personable email, and clear written messages that delight customers (vi)The tools for dealing with and recovering unhappy customers (vii)An understanding of the powerful impact of giving customers more than they anticipate (viii) Specific techniques for exceeding expectations in value, information, convenience, and timing thus creating greater customer loyalty (ix) the ability to lead, expand, and empower the service process (x) Specific behaviours for personal and professional success (xi) Skills for managing others in the pursuit of service excellence and (xii) An understanding of the future directions in customers service. The author states that the ideal goal in most business is to create partnership with customers. He argued that an emotional connection with customers is crucial to building loyal relationships.

[64] Paul R. Timm. (2008). Customers Service - Career Success through Customers Loyalty, (4th ed.). Pearson Education, Inc., New Delhi, p. 13.

Rick Ferguson and Bill Brohaugh (2008)[65] in their paper 'Telecom's search for the ultimate customer loyalty platform' examines the telecommunications industry in USA and attempt to discover how some of the major players are engaging their customers while trying to constantly diversify their service offerings. They find that companies with sound customer strategies can use this as a differentiator in an increasingly muddled market. In an increasingly competitive market, customer loyalty efforts can play a major part in the attraction of new customers and the retention of current ones. Companies must transition to offer a suite of services as "bundling" strategies proliferate and further ignite pricing wars.

Sanjay Kumar Singh (2008)[66] in his paper 'The diffusion of mobile phones in India' viewed that the increase in mobile phones has been phenomenal in comparison with landlines since the introduction of mobiles in the country. The main aim of the paper is to estimate future trends and analyse the pattern and rate of adoption of mobile phones in India. It is found that mobile-density (number of mobile phones per 100 inhabitants) in India will increase from 8.1 in 2005-2006 to 36.5 in 2010-2011 and 71 in 2015-2016. Consequently, the mobile subscriber base is projected to increase from 90 million in 2005-2006 to 433 million in 2010-2011 and nearly 900 million in 2015-2016. The projected rapid growth in the mobile subscriber base will have important implications for future plans of mobile operators, infrastructure providers, handset suppliers and vendors. Mobile operators should be ready with contingency plans to deploy and operate infrastructure including customer care, billing, applications, etc., faster than that they might have initially planned. Analysis of the level and growth in tele-density (total number of telephones per 100 inhabitants) in developed countries reveals that the saturation level of tele-density in developing countries could be anywhere between 120 and 150 telephones per 100 inhabitants. Therefore, developing countries that are late adopters of telephones are likely to experience a saturation level of mobile-density between 100 and 120 mobile phones per 100 inhabitants. Since India is a late

[65] Rick Ferguson and Bill Brohaugh. (2008). Telecom's search for the ultimate customer loyalty platform. Journal of Consumer Marketing 25/5, Emerald Group Publishing Limited, pp. 314 -318.

[66] Sanjay Kumar Singh. (2008). The diffusion of mobile phones in India. Telecommunications Policy 32, Elsevier Ltd., pp. 642–651.

adopter of telephones, its saturation level of mobile-density is likely to be between 100 and 120 mobile phones per 100 inhabitants.

Shanthi Venkatesh (2008)[67] in her paper 'Analysis of gaps in telecommunication services - a study with respect to service gaps in fixed-line segment' examines the expectations and satisfaction levels of the service users, using fixed-line telephone services, and identifies the service gaps. She recommends that the initial and immediate action the BSNL needs to take is to replace the old instruments with the state-of-art instruments with compatibility to all the value additions offered by the service provider. Vigorous sales promotion activities need to be undertaken by BSNL, by building on its strength of being the largest telephone service provider of the peninsula, in order to reduce the switch-over rate. The private service providers need to explore newer avenues of the market and capitalize on its present upswing. The market potential of more than 60% is unexplored which the private players need to target. The private players should also involve in sales promotion activities, in order to educate the users on their relative strengths, and capitalize on the switch-over attitude of the user in order to increase their market share.

Abhishek Khanna and Nitin Navish Gupta (2009)[68] in the article 'Uptake of 3G Services in India' observed that 3G technology has significant potential in India- rural and urban. The beginning of 2009 was marked by a momentous development in the Indian telecom market - the advent of third-generation (3G) networks. The availability of 3G, coupled with reasonable price plans, affordable handsets and compelling services, can revolutionise the Indian telecom market. The technology savvy urban subscribers will increasingly adopt 3G services. Due to inadequate fixed line infrastructure, rural India offers immense potential for mobile broadband services in areas such as agriculture, healthcare, education and governance. According to Evalueserve estimates, the total mobile subscriber base in India will reach nearly one billion by end of 2013. Evalueserve also estimates that about 275

[67] Shanthi Venkatesh. (2008). Analysis of gaps in telecommunication services - a study with respect to service gaps in fixed-line segment. Innovative Marketing, Volume 4, Issue 1, pp. 64-76.

[68] Abhishek Khanna and Nitin Navish Gupta. (2009). Uptake of 3G Services in India. Evalueserve White Papers, Evalueserve, Ltd., pp. 1-8.

million Indian subscribers will use 3G-enabled services, and the total number of 3G-enabled handsets will reach close to 395 million by the end of the year 2013.

Christine Bailey et al. (2009)[69] in their study titled 'Segmentation and customer insight in contemporary services marketing practice: Why grouping customers is no longer enough' proposed that where a company is interacting with an individual customer, aspects of the proposition that can be tailored to the individual level will be most effectively informed by one-to-one customer analytics rather than just by using segment membership. Segmentation is most likely to be applicable to communications with new customers, while customer analytics and propensity models (which predict the likelihood of an individual customer acting in a certain way, such as responding positively to an offer) are most effectively used with existing customers where transactional history data are available. Highly sophisticated companies will not only manage their interactions with and tailor offerings to selected customer groups on an individual basis, but will also measure the likelihood of customers taking up new offerings using customer analytic data and propensity modelling, which when combined with segmentation programmes will allow the measurement of customer lifetime value and the dynamic optimisation of market segments.

Das Gupta Devashish and Sharma Atul (2009)[70] in the research paper titled "Customer Loyalty and Approach of Service Providers: An Empirical Study of Mobile Airtime Service Industry in India", examine the customer loyalty in mobile telecommunication services. The authors explain that services are always unique from a marketing perspective due to their intangible nature. Especially in the case of a service like mobile airtime service where there is no service encounter, attributes required for brand loyalty become more complex. This article tests the relationship of customer loyalty and the approach of service providers in India. The study reveals that 40% of consumers are not satisfied by their service provider. The consumer is

[69] Christine Bailey, Paul R. Baines, and Hugh Wilson. (2009). Segmentation and customer insight in contemporary services marketing practice: Why grouping customers is no longer enough. Journal of Marketing Management, Vol. 25, No. 3-4, Westburn Publishers Ltd, pp. 227-252.

[70] Das Gupta Devashish and Sharma Atul. (2009). Customer Loyalty and Approach of Service Providers: An Empirical Study of Mobile Airtime Service Industry in India. Services Marketing Quarterly, 30: 4, Routledge Informa Ltd., England, pp. 342-364.

forced to continue with their service provider as they do not want their number to change. The study suggests that the service providers have to provide service with reliable quality without any hidden price. These are the two most important determinants of consumer satisfaction and hence customer loyalty.

Fujun Lai et al. (2009)[71] studied the relations among service quality, value, image, satisfaction, and loyalty in customers of a Chinese mobile communications company. The study reveals that service quality directly influences perceived value and image perceptions, the value and image influence satisfaction, the corporate image influences value, and both customer satisfaction and value are significant determinants of loyalty. Thus, value has both a direct and indirect (through satisfaction) impact on customer loyalty. Other variables mediate the impact of both service quality and corporate image on customer loyalty.

Gheorghe Meghişan and Georgeta-Mădălina Meghişan (2009)[72] analyses the emerging demand of telecommunication services and consumption behaviour of the youngsters aged between 20 and 29 years old from Craiova, Romania. The competition is very intense in this segment. Youngsters choosing mobile telephony service providers in a rational way based on service quality, cheapest tariffs and attractive offers.

Ian N. Lingsand Gordon E. Greenley (2009)[73] studied the impact of internal and external market orientations on firm performance. This paper examines the impact of internal marketing, operationalized as a set of internal market-oriented behaviours on market orientation and consequently organisational performance. It provides the first quantitative evidence to support the long held assumption that internal marketing has an impact on marketing success. They collected data from UK retail managers and analysed using structural equation modelling. These data

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[71] Fujun Lai, Mitch Griffin, and Barry J. Babin. (2008). How quality, value, image, and satisfaction create loyalty at a Chinese telecom. Journal of Business Research, 62, Elsevier Inc., pp. 980-986.

[72] Gheorghe Meghişan and Georgeta-Mădălina Meghişan. (2009). Analysis of the Emerging Demand of Telecommunication Services. Annals of the University of Petroşani, Economics, 9(4), Romania, pp. 63-68.

[73] Ian N. Lings and Gordon E. Greenley. (2009). The impact of internal and external market orientations on firm performance. Journal of Strategic Marketing, Vol. 17, No. 1, Taylor & Francis, pp. 41-53.

indicate significant relationships between internal market orientation, employee motivation and external marketing success (market orientation, financial performance and customer satisfaction). The results also support previous findings indicating a positive impact of external market orientation on customer satisfaction and financial performance.

Ingo Vogelsang (2009)[74] in his article 'The relationship between mobile and fixed-line communications: A survey' explains the dramatic worldwide increase in mobile communication that has led to more than 4 billion users has over the last few years been accompanied in wealthy countries by a significant decline in fixed network subscriptions. Such fixed-to-mobile substitution (FMS) is at the center of his literature survey. Theoretical models explaining FMS are scarce and are inconclusive regarding the balance between substitution and complementarity of the fixed and mobile sectors. Empirical explanations hinge on the interaction of positive cross-elasticities of demand and reductions in mobile relative to fixed communications prices. FMS is also supported by relative declines in mobile network costs, network effects in demand and quality improvements of mobile services. The policy consequences of FMS stem from the potential reductions in market power of operators in fixed-line markets and from the ability of mobile operators to enable universal service.

Ken Kwong-Kay Wong (2009)[75] in his article titled 'Potential moderators of the link between rate plan suitability and customer tenure: A case in the Canadian mobile telecommunications industry' observed that in the competitive wireless telecommunications market, customer retention has become a priority to many carriers, as they face high customer acquisition cost and high churn rate. Prior literature has found that wireless customers often subscribe to inappropriate rate plans, and thus overpay for their services. This research aims to improve the understanding of rate plan optimization as a customer tenure maximization strategy

[74] Ingo Vogelsang. (2009). The relationship between mobile and fixed-line communications: A survey. Information Economics and Policy 22, Elsevier B. V., pp. 4-17.

[75] Ken Kwong-Kay Wong. (2009). Potential moderators of the link between rate plan suitability and customer tenure: A case in the Canadian mobile telecommunications industry. Journal of Database Marketing & Customer Strategy Management, Vol. 16, 2, Palgrave Macmillan, pp. 64-75.

in the wireless telecommunications industry. Through the analysis of 1249 Canadian wireless customers, the author confirms that 'rate plan suitability' plays a significant role in affecting customer tenure in the wireless telecommunications industry. Customers with optimal rate plans are found to stay significantly longer with the wireless carrier than those with non-optimal ones. The author argues that wireless carriers should consider matching their customers to optimal rate plans for retention purpose.

Lifang Peng and Xiaoli Zhang (2009)[76], in the study of service innovations model for Chinese telecom operators - China Mobile Ltd. as an example, analysed Chinese telecom operators' environment and judged that the service innovations determine success or failure of corporate operations. Only by continuously promoting the service innovations, improving service quality, offering more value to customers can obtain and retain more customers and gain competitive advantage.

Mathew P. T. (2009)[77] studied the marketing challenges and opportunities for BSNL in the mobile sector in the liberalisation environment of telecommunication services in India. He observed that BSNL functions as a bureaucratic organisation, with top down approach in decision making and implementation. In such an organisation initiative is not rewarded. Even though employees generate information about the market and customers, the same is not being utilised properly. He concluded that there is high price sensitivity in the market and perceived differences in the brands are many, the BSNL should focus on quality of service and ready to respond to competition, service improvements, additives like new value added services and attractive call rates etc. The BSNL should improve the quality of the network and also the same should be communicated to the customers. BSNL should come up with more attractive customer specific tariff pans which will help the company to survive in the completion and increase the customers base, market share, minutes of usage and hence the total revenue. Presently the mobile market has high growth rate, BSNL

[76] Lifang Peng and Xiaoli Zhang. (2009). The study of service innovations model for Chinese telecom operators - China Mobile Ltd. as an example. IEEE., pp. 669-675.

[77] Mathew P. T. (2009). Liberalisation of telecommunication sector in India - Marketing challenges and opportunities for BSNL in the mobile sector. Ph.D. Thesis. Kannur University, Kerala, pp. 8, 317-323.

should try to encash the opportunity and improve the market share. The BSNL should ensure easy availability of all products to its customers.

Pedro S. Coelho and Jörg Henseler (2009)[78] conducted two large-scale, representative, cross-sectional studies in different service industries based on the ECSI (European Customer Satisfaction Index) framework. They found that customization increases perceived service quality, customer satisfaction, customer trust, and ultimately customer loyalty toward a service provider. Customization has both direct and mediated effects on customer loyalty and interacts with the effects of customer satisfaction and customer trust on loyalty.

Philip Kotler et al. (2009)[79] stated that marketer's task is to devise marketing activities and assemble fully integrated marketing programmes to create, communicate and deliver value for customers. The authors cited McCarthy's (2002) classification of these activities as marketing - mix tools of four broad kinds, which he called the four Ps of marketing: product, price, place and promotion. The book emphases that the marketing strategy formulation is mainly based on the elements of marketing mix.

Raja B. Shekhar and Udaya Bhaskar N. (2009)[80] studied the celebrity impact on consumer behaviour with reference to prepaid mobile service providers specifically Airtel, Reliance, BSNL, Vodafone and Idea in select urban and semi urban areas of Andrapradesh, India. The study identified five most important factors- call rates, clarity of voice, good signals, network coverage, and value added services which influences consumers to purchase mobile connection. The celebrity endorsements generated higher purchase intentions and positive attitudes toward the advertisements in urban area compared to semi urban area.

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[78] Pedro S. Coelho and Jörg Henseler. (2009). Creating Customer Loyalty through Service Customization. Emerald Group Publishing Limited, pp. 1-27.

[79] Philip Kotler, Kevin Lane Keller, Abraham Koshy and Mithileshwar Jha. (2009). Marketing Management-A South Asian Perspective, (13th ed.). Pearson Education, India, New Delhi, pp. 24-25.

[80] Raja Shekhar B. and Udaya Bhaskar N. (2009). A Comparative Study of Celebrity Impact on Consumer Behavior with Reference to Prepaid Mobile Service Providers in Select Urban and Semi Urban Areas. International Journal of Business Research, Volume 9, Number 1, pp. 103-107.

Ramo Barrena and Mercedes Sánchez (2009)[81] in the research paper titled 'Using Emotional Benefits as a Differentiation Strategy in Saturated Markets' observed that the high level of product substitution in most consumer markets often makes it difficult to match supply with demand, especially in sectors with mature, saturated markets with intense competition and a high degree of product differentiation. The difficulty of using technical characteristics such as quality and/or price to differentiate products suggests that marketers could profit from gaining more insight into the way in which consumers' purchase decisions are influenced by their perceived emotions. As far as the consumer decision-making process is concerned, the results reveal a certain degree of complexity. The purchase decisions of each segment were found to involve different attributes, consequences, and values, thus confirming the positive segmentation process, based on the emotions perceived at the time of purchase. It should also be noted that psychological issues are gaining weight in the decision process, which increases in complexity as the number of perceived emotions rises.

Rob Markey et al. (2009)[82] in their article 'Closing the Customer Feedback Loop' observed that it's never been more important to keep the customers companies already have - it's much cheaper than acquiring new ones. Many companies have succeeded at retaining customers by asking them simple feedback- and then empowering the frontline employees to act swiftly on that feedback. At middle management level customer input can influence decisions on everything from where the company will compete to product development, pricing, policies and processes. The direct input from customers can help the top management make strategies coherent.

Shu-Ling Liao et al. (2009)[83] investigates factors of marketing communications and consumer characteristics that induce reminder impulse buying

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[81] Ramo Barrena and Mercedes Sánchez. (2009). Using Emotional Benefits as a Differentiation Strategy in Saturated Markets. Psychology & Marketing, Vol. 26(11), Wiley Periodicals, Inc., pp. 1002-1030.

[82] Rob Markey, Fred Reichheld and Andreas Dullweber. (2009). Closing the Customer Feedback Loop. Harvard Business Review South Asia, December 2009, pp. 25-29.

[83] Shu-Ling Liao, Yung-Cheng Shen, and Chia-Hsien Chu. (2009). The effects of sales promotion strategy, product appeal and consumer traits on reminder impulse buying behaviour. International Journal of Consumer Studies, 33, Journal compilation, Blackwell Publishing Ltd., pp. 274-284.

behaviour. They studied the antecedent, process and consequence approach to investigate the essential differences between reminder impulse buying and pure impulse buying. The results of study reveal that reminder impulse buying significantly differs from pure impulse buying on motivation, buying goal and decision evaluation. The consumers who engage in reminder impulse buying have more rational motivation, more utilitarian goals and less regret response than those who participate in pure impulse buying. The consumers who engage in pure impulse buying have more emotional motivation and more hedonic goals than those who participate in reminder impulse buying. They further examine how sales promotion strategy might affect reminder impulse buying, with product appeal and consumer traits as moderating factors. Both sales promotion strategy and its interaction effects with product appeal are found to have significant influences on reminder impulse buying. Specifically, an instant reward promotion promotes stronger reminder impulse buying than a delayed-reward promotion. Furthermore, both a utilitarian product appeal with a price discount promotion and a hedonic product appeal with a premium promotion can encourage greater reminder impulse buying. Before deciding to use a promotion, marketers should first identify whether the product value is utilitarian or hedonic in the marketplace. The marketers can use the benefit-matching framework – that is, utilitarian product benefits map to monetary-based promotions and hedonic product benefits map to nonmonetary-based promotion – to select appropriate promotion tools.

Sidharth Sinha (2009)[84] observed that Economic reforms and liberalisation have converted BSNL and MTNL from state-owned monopolies to players in a highly competitive market with no social or other non-commercial objectives. They will have to be run like other private sector telecom companies if they are to survive and prosper. The government's existing Navaratna policy, where limited autonomy is granted on the basis of size, profitability and a nominal listing, is not appropriate for SOEs (State Owned Enterprises) competing fiercely with the private sector. These firms need autonomy not because they are making profits on the basis of their monopoly position but because they have to compete on an equal footing with the

[84] Sidharth Sinha. (2009). Corporate Governance of State-Owned Enterprises: The Case of BSNL. Economic & Political Weekly Vol. XLIV No 41, October 2009, pp. 47 - 54.

private sector. All parts of the government, starting from the prime minister and extending to various government committees, recognise the need for autonomy with appropriate corporate governance. The key requirement is a competent board with adequate powers. The role of the board is likely to be more crucial than even in the case of private companies. Given the historical legacy, this will require a complete break from the current system of SOEs being controlled by sector ministries. The control will have to pass on to either an independent agency or in the interim to the finance ministry. In the absence of corporate governance changes, the only alternative will be privatisation.

Udechukwu Ojiako and Stuart Maguire (2009)[85] conducted a case study based on principles originating from a customer experience program instituted by British Telecommunications (BT). They define the customer experience as an articulation of the personal interaction, experiences, memories and opportunities that an organization provides existing and potential customers that substantially exceed their expectation to a degree that a lifelong relationship is established between the customer and the service provider. Usually, such experiences can be assessed from various perspectives, including products, services, care, functionality, applicability and ease of use, reliability, advertising, and packaging. It is only through an amalgamation of improved processes, products, services, and systems, combined with a change of culture, behaviour, and business outlook, that the company can deliver an improved service to its customers. In order to understand best practices in customer-focused change, this study investigates how customer-oriented strategies facilitate the enhancement of service experience. This paper has implications for all organizations concerned with the retention of existing customers and the acquisition of new customers in a dynamic business environment. In business management, strategy formulation represents one of the most important activities of an organization. The central theme running throughout this case study is the need for organizations to recognize that, for change strategy to be successful, it needs to be systematically designed, planned, and implemented in order to produce a desirable

[85] Udechukwu Ojiako and Stuart Maguire. (2009). Seeking the perfect customer experience: a case study of British Telecom. Strategic Change, 18, Wiley InterScience, John Wiley & Sons, Ltd., pp. 179 -193.

and predictable outcome. In this a key part of this strategy formation is to get inside the minds of their customers. The strategic change may be as dramatic as realigning the focus of the firm from being product-led to market-led.

Vanniarajan T. and Gurunathan P. (2009)[86] studied the relationship between service quality and customer loyalty among mobile telephone customers. They empirically established the relationship by analysing data collected from 627 mobile customers of Tamilnadu, India. The respondents are mainly the customers of Aircell, Airtel and BSNL. The authors identified three major factors of service quality as Core Service Quality, Network quality and Value added service quality. These elements have significant direct positive effect on customer satisfaction and indirect positive effect on customer loyalty through customer satisfaction. The analysis results reveal that customer satisfaction is the most important determinant of customer loyalty.

Zi-yang Cheng and Shou-lian Tang (2009)[87] in their research paper 'Economic Analysis of Pricing Methods of Telecom Services', discuss the pricing methods of the telecom services. The study points out that the telecom operators pursuing the maximum of profit set higher prices than they do when pursuing the maximum of social welfare. This paper shows that regulated, flexible discriminatory pricing based on two-part tariff is the development trend of telecom services, which is determined by the characteristics of the telecom services, competition, demand-price elasticity and other factors.

Simon Gyasi Nimako et al. (2010)[88] empirically assessed the overall customer satisfaction with service quality delivered by mobile telecommunication networks in Ghana. They use the MnCSI (Minnesota Customer Satisfaction Index) to measure the customer satisfaction. The findings indicate that the overall customer

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[86] Vanniarajan T. and Gurunathan P. (2009). Service Quality and Customer Loyalty in Cellular Service Market: An Application of 'Sem'. Journal of Marketing & Communication, Vol. 5, Issue 2, pp. 45-54.

[87] Zi-yang Cheng and Shou-lian Tang. (2009). Economic Analysis of Pricing Methods of Telecom Services. IITA International Conference on Services Science, Management and Engineering, IEEE., pp. 315-320.

[88] Simon Gyasi Nimako, Foresight Kofi Azumah and Francis Donkor. (2010). Overall Customer Satisfaction in Ghana Telecommunication Networks: Implications for Management and Policy. ATDF Journal, Volume 7, Issue 3/4, pp. 35-49.

satisfaction significantly differs among mobile telecom networks in Ghana. Irrespective of mobile telecom network in Ghana the customer satisfaction is low; neither equal to nor better than desire and expectation of customers.

Jarmo Harno (2010)[89] investigates the third generation mobile telecommunication systems (3G) diffusion challenges in the situation where large-scale mobile data service usage has not yet broken through. The paper first analyzes incumbent mobile operator business prospects in a large Western-European country. The results suggest that rollout of the most advanced available 3G technologies pay back through increased data service usage and revenues in the situation of declining voice revenues. The study discusses different pricing models and demonstrates that the flat rate pricing of data services, supplemented with certain conditions, supports the large-scale take-up of mobile data services. It boosts the usage of mobile data services and provides a competitive and sustainable business model for the operators and other market actors at the same time.

Lukasz Grzybowski and Chiraz Karamti (2010)[90] analyses the development of mobile telephony in France and Germany in 1998–2002. The results suggest a significant difference between price elasticity of demands in these two countries. The consumers perceive mobile telephony as a substitute for fixed-line connection in France and as a complement in Germany.

Narayana M. R. (2010)[91] studied the substitutability between Mobile and Fixed Telephones in India. Substitutability between mobile and fixed phones has become an important consequence of telecom sector deregulation in India since 1991. This paper estimates the socio-economic determinants of household demand for mobile and fixed phones, and tests for substitutability between mobile and fixed phones. The results show that the nature and magnitude of determinants are different

[89] Jarmo Harno. (2010). Impact of 3G and beyond technology development and pricing on mobile data service provisioning, usage and diffusion. Telematics and Informatics, 27, Elsevier Ltd., pp. 269-282.

[90] Lukasz Grzybowski and Chiraz Karamti. (2010). Competition in Mobile Telephony in France and Germany. Journal compilation, The University of Manchester and Blackwell Publishing Ltd., Oxford, pp. 1-23.

[91] Narayana M. R. (2010). Substitutability between Mobile and Fixed Telephones: Evidence and Implications for India. The Applied Regional Science Conference (ARSC), Blackwell Publishing Asia Pvt. Ltd., pp. 1-21.

between mobile and fixed phones. Estimated cross price elasticity offers empirical evidence for substitutability rather than complementarity between fixed and mobile phone services.

Nicoletta Corrocher and Lorenzo Zirulia (2010)[92] studied the pricing strategies of mobile communications operators in Italy and examine the role of demand characteristics in the development of new tariff plans. In so doing, they depart from a traditional industrial organization approach to price discrimination and interpret new tariff plans as innovations. They argue that the development of new tariff plans is strongly related to the users' characteristics and behaviour, which act both as a source of information and as an incentive for the implementation of firms' pricing strategies. In this framework, the demand affects firms' choices in two ways. First, the ability to design different tariff plans is related to the degree of information the firms have on users' needs and behaviour. The firms with a relatively larger installed user base are more able to segment the market than the firms with fewer customers. Therefore they possess a comparative advantage in terms of the opportunity to introduce new tariff plans. Second, incentives to develop innovative pricing schemes depend upon the level of market saturation. The number of users in the market for a specific product/service determines the incentives for firms to innovate. However, as different categories of users appear in the market, the positive effect of the demand size on the innovation is reduced. As a consequence, firms need to avoid the risks associated with demand heterogeneity by introducing improvement innovations and by exploiting the overall size of the market and the existence of local network externalities. The empirical evidence is consistent with their theoretical propositions. In particular, firms with a large installed user base tend to develop more tariff plans and to 'specialize' in improvement innovations as compared to firms with a small installed user base. Furthermore, as the market grows, firms tend to develop improvement innovations with the aim of exploiting the overall market size and competing for groups of consumers.

[92] Nicoletta Corrocher and Lorenzo Zirulia. (2010). Demand and innovation in services: The case of mobile communications. Research Policy, 39, Elsevier B. V., pp. 945-955.

Pat Wellington (2010)[93] describes fundamentals of effective customer care. He identified six elements of customer satisfaction, they are: Product or Service, Sales, After sales, Location, Time and Culture. The factors he considered in product or service elements are availability, product quality, service quality, packaging, image value for money and fulfilment of expectations. Sales element comprising of: honest, legal and decent marketing, proper verbal communication, wholly welcoming and frictionless purchasing environment, and knowledgeable, responsive, empathetic, trustworthy and loyal staff. After sales element consists of Acknowledging and honouring customer's lifetime value to the company and complaint handling by enabled and empowered staff responding immediately, courteously, honestly sympathetically and thoroughly. Location element deals with access to the organisation, security and comfort, and web-based purchasing. The time factor considers convenient business hours, availability of products and speed of transaction. The culture element deals with ethics, willingly helpful, honest, internal and external relationships aspects. He suggested using appropriate methods to get a clear and continuing picture of customers need and opinions.

Philip Kotler et al. (2010)[94] introduced Marketing 3.0, a new generation concept of value driven marketing. The concept of marketing 1.0 is belongs to product centric era. The view of marketing 2.0 is the customer centric era. The present scenario of marketing is witnessing marketing 3.0 the values driven era. In marketing 3.0 the objective of marketing is make the world a better place. The companies see the market as customers with mind heart and spirit. The key marketing concept is values. The value propositions are at functional emotional and at spiritual levels. The marketing 3.0 concerns for communities of consumers, employees, channel partners and shareholders. The credos of Marketing 3.0 are: (i) Love your customers, Respect your competitors (ii) Deliver great value to customers through touching their emotions and spirit. The authors quoted Donald Calneas: "The essential difference between emotion and reason is that emotion leads to

[93] Pat Wellington. (2010). Effective Customer Care. Kogan Page Limited, India, New Delhi, pp. 6-19.

[94] Philip Kotler, Hermawan Kartajaya and Iwan Setiawan. (2010). Marketing 3.0 from Products to Customers to Human Spirit. Wiley India Pvt. Ltd., New Delhi, pp. 3-7, 169-178.

actions while reasons lead to conclusions". Furthermore companies have to respect competitors. It is the competitors that enlarge the whole market, because without any competitors an industry will grow more slowly. (iii) Be sensitive to change, be ready to transform. (iv) The organization has to make it values clear and don't surrender them: If two products are of equal quality, people tend to purchase the one that has the stronger brand reputation. (v) Customers are diverse: A Global segment demands products of global quality but local features at slightly lower prices. (vi) Always offer a good package at a fair price: True marketing is fair marketing, where product and price must match. (vii) The digital presence: The companies that can straddle the digital divide - the socio cultural differences between those who have access to digital technology and the internet and those who don't - will grow their customer base. The e-presence will make the company always available for the customers. (viii) Get the Customers: Look upon the customers as customers for life. Ensure the delivery of deep rational and emotional satisfaction to the customers. In the saturated market the emotional satisfaction overweighs rational satisfaction. (ix) Service: Serve customers sincerely with complete empathy, then they carry away the positive memories with the experience from the company. (x) Always refine the business process in terms of quality, cost and delivery: Never engage in deceit or dishonesty with regard to quality, quantity, delivery time or price. (xi) Use Wisdom: Wise managers consider more than the financial impact of a decision, especially the social impact.

Rajasekhara Mouly Potluri and Hailemichael W. Hawariat (2010)[95] assessed and reviewed fixed-line telecom customers' perception of the quality of after-sales services provided by Ethiopian Telecom. The major reasons of customer dissatisfaction are lack of clarities of bills, delays in making decisions on complaints, telephone interruptions during rainy seasons, old cables and networks, damaged and stolen cables, frequency of faults and interruptions. Nearly 40 per cent of respondents have negative assessments of the role of employees in delivering good quality after-sales service.

[95] Rajasekhara Mouly Potluri and Hailemichael W. Hawariat. (2010). Assessment of after-sales service behaviors of Ethiopia Telecom customers. African Journal of Economic and Management Studies, Vol. 1 No. 1, Emerald Group Publishing Limited, pp. 75-90.

Roland T. Rust et al. (2010)[96] in their article 'Rethinking Marketing' observed that, never before have customers expected to interact so deeply with companies, and each other, to shape the products and services they use. To compete in this aggressively interactive environment, companies must shift their focus from driving transaction to maximising customer value. The key distinction between a traditional and a customer-cultivating company is that one is organised to push products and brands whereas the other is designed to serve customers and customer segments. In the latter, communication is two way and individualised, or at least tightly targeted at thinly sliced segments. If customer service must be outsourced, the functions should report in to a high-level internal customer manager, and its IT infrastructure and customer data must be seamlessly integrated with company's customer base. Once companies make the shift from marketing products to cultivating customers, they will need new metrics to gauge the strategy's effectiveness. First, companies need to focus less on product profitability and more on customer profitability. Second, companies need to pay less attention to current sales and more to customer life time value. Third, companies need to shift their focus from brand equity (the value of the brand) to customer equity (the sum of the life time values of their customers). Fourth, companies need to pay less attention to current market share and more attention to customer equity share (the value of a company's customer base divided by the total value of the customers in the market).

Shalini N. Tripathi and Masood H. Siddiqui (2010)[97] conducted an empirical investigation of customer preferences in mobile services. The study explains how consumers trade off among available attributes while selecting a mobile service package. They identified six specific attributes namely connectivity of network, customer service, tariff of mobile services, variety of plans, value added services and technology deployed by network. The customers accorded the greatest importance to the connectivity of network attribute, followed by customer service

[96] Roland T. Rust, Christine Moorman and Gaurav Bhalla. (2010). Rethinking Marketing. Harvard Business Review South Asia, January-February 2010, pp. 86-93.

[97] Shalini N. Tripathi and Masood H. Siddiqui. (2010). An empirical investigation of customer preferences in mobile services. Journal of Targeting, Measurement and Analysis for Marketing 18, Macmillan Publishers Ltd., pp. 49 - 63.

and tariff of mobile services. However, customers placed relatively less importance for variety of plans, value added services and technology deployed by network.

Victor Danciu (2010)[98] in the paper titled 'The Gravity Law of Marketing - A Major Reason for Change to a Better Performance' explains that companies develop marketing strategies only for success. But, sooner or later, even the most successful strategies begin to wear out and lose their impact on the performances of the company. This phenomenon is known as strategic drift or wear-out. It makes strategy progressively fail to maintain the company's performance. The mutual attraction between the marketing strategy and the performance of the company is known as the law of marketing gravity. Once a marketing strategy loses impact on the marketing performance as a result of the law of marketing gravity a fundamental change is needed. This paper is aiming to point out that companies must recognize the limited viability of their marketing strategies, identify the causes of the strategic wear out and implications of the law of the marketing gravity. Once a marketing strategy loses its impact, a fundamental change to recapture the lost position is needed in order to avoid the risk of lowering the loyalty of customers and of competitive oblivion. The starting point of such a change involves a new marketing thinking.

Asha K. Moideen (2011)[99] in her doctoral study assesses the impact of marketing strategies in the gold ornament market of Kerala. The study illustrates the influence of product, price, place, promotion and people oriented marketing strategies in the gold ornament market.

Audhesh K. Paswan et al. (2011)[100] studied the relationship between relationalism (i.e. extent to which relational norms guide the interactions between business partners) in marketing channels and marketing strategy. Data were collected from managers responsible for marketing and channels management in US

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[98] Victor Danciu. (2010). The Gravity Law of Marketing - A Major Reason for Change to a Better Performance. Theoretical and Applied Economics, Volume XVII, No. 4(545), Romania, pp. 7-18.

[99] Asha K. Moideen. (2011). The impact of marketing strategies in the gold ornament market of Kerala. Ph.D. Thesis. Mahatma Gandhi University, Kerala, p. 70.

[100] Audhesh K. Paswan, Charles Blankson and Francisco Guzman. (2011). Relationalism in marketing channels and marketing strategy. European Journal of Marketing, Vol. 45, No. 3, Emerald Group Publishing Limited, pp. 311-333.

pharmaceutical firms. They measured the constructs using a five-point Likert type scale. Data were analysed using Principal Component Analysis and Structural Equation Modelling. They find that aggressive marketing strategy and price leadership strategy are positively associated with the level of relationalism in marketing channels. In contrast, product specialization (focus) strategy is negatively associated with the level of relationalism in marketing channels. Thus, the intuitive appeal of developing close relationships with supply chain partners may work very well if the firm wants to adopt an aggressive marketing as well as a price leadership strategy, because the channel partners see a long term benefit in it and may be willing to forgo short terms losses or hardships. However, close relationships with channel partners may prevent a firm from adopting a product focus strategy because the parties may not see a long term benefit in it.

The concept of telecom leapfrogging is elaborated by Chun-Yao Huang (2011)[101]. It is widely observed that people in developing countries have been able to skip landline-based telecommunication systems by directly adopting mobile phones and enjoying their convenience. Such an observation is usually labelled as leapfrogging. Relative to landlines, a mobile system is relatively cost efficient in infrastructure investment. Indeed, many people in developing countries benefit greatly from the relatively accessible mode of mobile telecom services. Telecom leapfrogging happens in the within-country sense in that people directly jump to mobile systems without the stepping stone of landlines.

Gloria K. Q. Agyapong (2011)[102] studied the relationship between service quality and customer satisfaction in the utility industry (telecom) in Ghana. The study adapted the SERVQUAL model as the main framework for analyzing service quality. The data were collected from Vodafone customers of Ghana. He used multiple regression analysis to examine the relationships between service quality variables and customer satisfaction. There is a positive relationship between service quality and customer satisfaction. Among the service quality variables that

[101] Chun-Yao Huang. (2011). Rethinking leapfrogging in the end-user telecom market. Technological Forecasting & Social Change, 78, Elsevier Inc., pp. 703–712.

[102] Gloria K. Q. Agyapong. (2011). The Effect of Service Quality on Customer Satisfaction in the Utility Industry – A Case of Vodafone (Ghana). International Journal of Business and Management Vol. 6, No. 5, Published by Canadian Center of Science and Education, pp. 203-210.

significantly affected customer satisfaction include competence, courtesy, tangibility, reliability, responsiveness and communication. This finding has important implications with regard to brand building strategies. Indications of a successful brand building are found when companies provide quality services relative to other companies within the same industry. It is imperative for Vodafone (Ghana) and other telecom firms, therefore, to improve customer services by giving customers what they want and at the right time.

Harald Gruber and Pantelis Koutroumpis (2011)[103] assessed the impact of mobile telecommunications on economic growth using annual data from 192 countries over the period 1990 - 2007. They found that the impact is smaller for countries with a low mobile penetration, usually low income countries. While in low income countries the mobile telecommunications contribution to annual GDP growth is 0.11%, for high income countries this is 0.20%. The increasing returns from mobile adoption are also emerging when assessing the impact on productivity growth. The authors recommended liberalization policies along with appropriate regulatory frameworks to promote mobile telecommunications penetration.

Ho Kyun Shin et al. (2011)[104] studied the relationship between consumer's preference and service attributes in mobile telecommunication service in Uzbekistan. The study investigates the subscribers' behaviour and perception towards company loyalty, call and service quality, mobile phone expenses, and pricing. The pricing appeared to be of high importance in almost all demographic groups. In a country, where prices are relatively high compared to salaries, pricing will always play the main role when selecting a mobile service provider. The service quality has significant impact on customer satisfaction. The authors suggest that offering discounts can concretely compensate customers; mobile carriers can grow their subscribers' base and maintain current subscribers.

[103] Harald Gruber and Pantelis Koutroumpis. (2011). Mobile telecommunications and the impact on economic development. Economic Policy, CEPR, Britain, pp. 387-426.

[104] Ho Kyun Shin, Andrey Kim, and Chang Won Lee. (2011). Relationship between consumer's preference and service attributes in mobile telecommunication service. Expert Systems with Applications, 38, Elsevier Ltd., pp. 3522–3527.

Robert Wollan (2011)[105] observed that word of mouth, amplified by social media, is the source the customers use the most when deciding whether to do business with a service provider. He stated that service providers should consider three main principles when developing differentiated offers for customers. (i) Know the customer like never before: Understand the demographic variables within each segment, including income, age, education, and job status, as well as the behavioural profiles that could define the segments. (ii) Make the offer clear and readily understandable and present it in the customer's own language: In addition to aligning offers with the likes and dislikes expressed by each segment, providers must work harder to present service offers in clear language so as to avoid customer confusion and frustration. (iii) Track offers to determine which ones bring in new customers and induce established customers to spend more: Examine social media for evidence that customers are saying positive things to their friends and acquaintances about the offer.

Lekshmibhai P. S. (2012)[106] studied the effect of advertisement on consumer behaviour and brand preference with special reference to selected consumer durables in Kerala. She observed that advertisements are important in terms of enjoying and gaining product information. The study reveals that majority of the customers change their brand preference due to advertisements. To show the importance of advertisements in marketing, she quoted Thomas Jefferson, (1743 -1826 AD) as: 'The man who stops advertising to save money are like the man who stops the clock to save time'.

In the review of literature the researcher presented the concepts about development perspectives of telecommunication services, theoretical aspects of marketing strategies and its applications in telecommunication services. The careful review of literature has helped the researcher to synthesize prior studies and to identify the important variables relevant to the research problem. This review of

[105] Robert Wollan. (2011). The Service Provider - Customer Paradox. Customer Relationship Management, March 2011, Information Today Inc., pp. 10-11.

[106] Lekshmibhai P. S. (2012). The effect of advertisement on consumer behaviour and brand preference with special reference to selected consumer durables in Kerala. Ph.D. Thesis. Mahatma Gandhi University, Kerala, pp. 53, 256.

literature became the basis of the development of conceptual framework of the research study.

3. Significance of the study

Telecom service has been recognized the world over as an important tool for socio-economic development for a nation. The telecommunication services are inevitable to the modern world. The services are ranging from basic wire line voice services to third generation (3G) mobile telephony, data services and beyond.

The continuous innovations in technology developed the platform for telecommunication services from analog mobile voice services in 1980s to multimedia cellular services with mobile ultra-broadband (gigabit speed) access in 2010s. The highly informed customers demanded for better products and services. Naturally marketing innovations became the unavoidable part of telecommunication services. The interplay of continuous innovations in technology and marketing gave birth to new products, processes and services.

The liberalization and privatization policies initiated in India from 1990s, ended the monopoly of State owned entities in telecommunications services sector. The entry of private sector telecom service providers including foreign companies in Indian telecom market creates utmost competition. Product innovations, better customer support services, superior quality of service, competitive pricing, attractive promotional offers and effective marketing communication became mandatory for telecom service providers to retain existing customers and to acquire new customers. The telecom customers' expectation about the services became inflated in Kerala due to their experience in a competitive telecom world. The mobile number portability (MNP) allows customers to change mobile operators without changing the mobile phone number. The telecom service operators should strive hard to design and implement marketing strategies to provide better experience to customers to exceed their expectations. The marketing strategies significantly vary from public sector to private sector and even operator to operator. Hardly any serious research study has ever been undertaken to analyses the marketing strategies of telecommunications services. The present study is an attempt to identify and illustrate different marketing strategies adopted by the public sector provider BSNL

and the major private sector telecom service providers in product differentiation, pricing, advertisement and sales promotion. The strategies to promote third generation mobile telecom services are also included in the study. The study evaluates delivery of core service benefits, customization, customer support services, quality of service, brand value, promotional offers, and competitiveness in pricing of the private and public sector telecom service providers in Kerala.

The public and private sector telecom service providers have their own strength and weakness in the design and execution of marketing strategies. The study reveals the reflections of different marketing strategies and its' effects among the customers. The comparative market performance of telecom service providers in multiple planes illustrated in the study will help them to have introspection so that remedial measures may be instituted to solve the associated problems or the unsatisfactory situations.

This research will be helpful in understanding successful strategic initiatives in marketing of telecommunication services. It is imperative that the marketers must have considerable knowledge of the consumer behavior to formulate effective marketing strategies. The research gives an insight about consumer behavior of Keralites, especially the consumers in telecom services sector. The study exposed the important factors and its effects related to customer satisfaction and loyalty of consumers of telecom services.

4. Scope of the study

In India the landscape of telecommunication services changed dramatically during the last decade. The monopolies of state owned telecom business era ended and market open to private investments. The entry of multiple foreign and Indian private players in the telecom market intensified the competition. In early 2000s, customers were ready to wait for years to get plain old telephone services (POTS). Worldwide advancement in Information and Communications Technology (ICT), the favorable business environment in India, and innovations in marketing gave exciting experiences to the customers. A competitive telecommunications market place demands that service providers offer a variety of alternatives to meet the diverse needs of customers. Marketing strategies became crucial for the existence of

telecom service providers. This research work is an attempt to study the marketing strategies of public and private sector telecom service providers in Kerala.

The scope of the study is limited to identify and illustrate different marketing strategies adopted by the public sector telecom service provider BSNL and major private sector telecom service providers for the marketing of mobile telecom services, third generation mobile telecom services, landline telephone services, and landline broadband services among the customers of Kerala in general.

The study evaluates delivery of core service benefits, customization, customer support services, quality of service, brand value, competitiveness in pricing, unethical practices and promotional offers of the public sector and major private sector mobile telecom service providers in Kerala in a strategic marketing perspective. An attempt is made to study the important factors and its effects related to customer satisfaction and loyalty of mobile telecom consumers of Kerala.

5. Objectives of the study

The objectives of the study are:

1) To study the product differentiation strategies of Public Sector Telecom Service provider - BSNL and Private sector telecom service providers in Kerala.
2) To study the pricing strategies of BSNL and Private sector telecom service providers in Kerala.
3) To study the promotion strategies of BSNL and Private sector telecom service providers in Kerala.
4) To evaluate the marketing strategies related to the third generation (3G) mobile telecommunication services of BSNL and private sector mobile telecom service providers in Kerala.
5) To ascertain the important factors and its effects related to customer satisfaction and loyalty of consumers of mobile telecom services.

6. Hypotheses of the study

The major hypotheses formulated for the study are:

1) There is significant difference between the product differentiation strategies of BSNL and private sector mobile telecom service providers in Kerala.
2) There is significant difference between the pricing strategies of BSNL and private sector mobile telecom service providers in Kerala.
3) There is significant difference between the promotion strategies of BSNL and private sector mobile telecom service providers in Kerala.
4) There is significant difference between the marketing strategies related to the third generation (3G) mobile telecommunication services of BSNL and private sector mobile telecom service providers in Kerala.
5) There is significant relationship between the service related factors specifically service benefits, customer support services, quality of service, competitive pricing, tariff variety and unethical practices in mobile telecom services sector and customer satisfaction.

7. Research methodology

Research is the process of generating knowledge about reality. The word *research* is composed of two syllables, *re* and *search*. The dictionary defines the former as a prefix meaning again, anew, or over again and latter as a verb meaning to examine closely and carefully, to test and try, or to probe. Together they form a noun describing a careful, systematic, patient study and investigation in some filed of knowledge, undertaken to establish facts or principles. Research is a structured inquiry that utilizes acceptable scientific methodology to solve problems and creates new knowledge that is generally applicable[107]. Scientific research is a systematic, controlled empirical and critical investigation of propositions about the presumed

[107] Grinnel Richard Jr. (1993). Social Work, Research and Evaluation, (4th ed.). F. E. Peacock Publishers, Illinois, p. 4., as cited by Ranjit Kumar. (1999). Research Methodology – A step by step guide for beginners. Sage publications Ltd., New Delhi, p. 6.

relationships about various phenomena[108]. Consistent with this view Pawar B. S. (2009)[109] notes that the research process reflects the positivistic paradigm/view or model of science (also referred to as natural science model) and research. This approach would imply that research involves a process of constructing conceptual representations of the reality and then assessing the extent to which the conceptual representations or predictions made from them correspond with the observations made from the empirical world.

Research methodology is the systematic process of initiation, execution and completion of a research study. Research methodology describes the methods of formulating a research problem, conceptualizing a research design, constructing valid and reliable instruments for data collection, selecting the sample frame, collecting, processing, analyzing and interpreting data, drawing conclusions and writing the research report. The following sections explain and justify the methodology used for conducting this research study.

8. Research design

Research design is the blueprint to undertake the various procedures and tasks required to complete the study. Kerlinger (1986)[110] defines research design as a plan, structure and strategy of investigation so conceived as to obtain answers to research questions or problems. The plan is the complete scheme or program of the research. It includes an outline of what the investigator will do from writing the hypotheses and their operational implications to the final analysis of data. Research design constitutes the framework for data collection design, sampling design, instrument development, data collection, data processing and analysis of data required for the research study.

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[108] Kerlinger Fred N. (1986). Foundations of Behavioural research, (3rd ed.). Holt, Rinehart and Winston, New York, p. 10 as cited by Ranjit Kumar. (1999). Research Methodology – A step by step guide for beginners. Sage publications Ltd., New Delhi, p. 6.

[109] Badrinarayan Shankar Pawar. (2009). Theory Building for Hypothesis Specification in Organizational Studies. Response Business books from Sage, New Delhi, p. 4.

[110] Kerlinger Fred N. (1986). Foundations of Behavioural research, (3rd ed.). Holt, Rinehart and Winston, New York, p. 279 as cited by Ranjit Kumar. (1999). Research Methodology – A step by step guide for beginners. Sage publications Ltd., New Delhi, p. 74.

9. Pilot study

A pilot study was conducted with the help of the draft questionnaire. The study helped the researcher to get accustomed with the actual situation. The pilot study was conducted among 60 respondents, twenty each selected from Kochi Municipal Corporation, Kannur Municipality and Vamanapuram Panchayat of Kerala State. The pilot study helped the researcher to detect the deficiencies of the questionnaire. The irrelevant questions were removed and more relevant questions were added. The inputs of the respondents helped to identify and change confusion in wordings of certain questions. Minor modifications in the questionnaire were also done to maintain the proper logical sequence. The realistic environment experienced in the pilot study helped the researcher to revise the questionnaire for primary data collection.

10. Structure of the questionnaire

The questionnaire is designed to collect information required to answer the specific objectives of the research study and empirically test the hypotheses. At most care has been taken to use simple language and clarity in statements. The questions are arranged in logical sequence and are asked in a direct manner.

The questionnaire for the survey is divided in ten sections. The first section deals with collection of personal data of the respondents. The data collected are name, place of residence, locality, age, gender, educational qualification, employment status, and annual family income along with details of mobile connections currently possessed by the respondent. The second section is used to measure the core service benefits and support services extended by the most preferred mobile service provider of the respondent. The third section is a multiple item scale to measure the service quality of mobile phone services. It is based on the 22-item SERVQUAL scale developed by Parasuraman A. et al. (1991)[111] for measuring consumer perceptions of service quality. The scale is used with appropriate modifications in the wording of items to adapt them to the specific

[111] Parasuraman A., Valarie A. Zeithaml, and Leonard L. Berry. (1991). Refinement and Reassessment of The SERVQUAL Scale. Journal of Retailing, Volume 67, Number 4. Elsevier Science Publishing Company Inc., pp. 420-450.

setting of mobile telecom services industry. The fourth section contains questions to identify the brand value, variety of tariff plans, pricing strategy, and the effectiveness of advertisements of the mobile service providers. The section five consolidates the questions related to promotional offers and questions in section six aims to measure the familiarity of respondents with website of mobile service providers and its user -friendliness. The section seven comprises of items to measure the variables customer satisfaction and customer loyalty. The section eight deals with questions in respect of marketing strategies related to the third generation (3G) mobile communication services of telecom service providers. The questions in last two sections aim to measure the services marketing aspects of landline telephone services and landline broadband internet services respectively.

All variables are measured by using Likert scale with five anchor points, specifically Strongly Agree, Agree, Uncertain, Disagree and Strongly Disagree. A few dichotomous questions also included in the questionnaire wherever appropriate.

In order to get accurate responses from the respondents the researcher promised to keep the confidentiality of data and assured to utilise the data only for academic research purpose. The copy of questionnaire is given in the Appendix-I.

11. Collection of data

Primary data: The primary data for the study were collected with the structured questionnaire and informal personal discussions with the respondents. The researcher directly surveyed the respondents by administering the questionnaire.

Sampling design: The mobile telephone customers of Kerala are the population considered for the study. Stratified multistage random sampling technique, coming under the category of probability sampling designs is mainly used for selecting the samples for the primary data collection. In the first stage, the entire population is divided in to three strata, namely urban, semi-urban and rural. The municipal corporations are identified as urban stratum, the municipalities are identified as semi-urban stratum and the panchayat are identified as rural stratum.

Sample size: The sample size of the present study is 1080 comprising of 360 random samples each from each stratum. A sample of 120 customers each from

Thiruvananthapuram, Kochi and Kozhikode municipal corporations represents the urban stratum. A sample of 40 customers each from the nine municipalities of Kerala represents the semi- urban stratum. The rural stratum is represented by 20 customers each from eighteen grama - panchayats of Kerala.

Rick C. Farr et al. (2004)[112] suggests that the researcher never needs more than a few hundred responses – even for a population of one million. Crimp et al. (1995)[113] observed that sample size anything larger than 30 and below 500 is appropriate for the research methods. Hyman et al. (2000)[114] argued that many statisticians and researchers have already examined the statistical and cost implications of different sample sizes and have identified the appropriate sizes for different types of studies. The authors concluded that the minimum sample size required for conducting market studies as 500. As cited by Andy Field (2009)[115], Comrey and Lee (1992) classify 300 as a good sample size, 100 as a poor and 1000 as excellent. Therefore it confirms that the selected sample size of 1080 is adequate for the present study.

The municipal corporations of Thiruvananthapuram, Kochi and Kozhikode were selected for sample collection due their high nature of urban characteristics. The nine municipalities and eighteen grama - panchayats were selected through simple random sampling method. Again through simple random sampling method two wards each from selected panchayats, two wards each from selected municipalities and six wards each from selected municipal corporations were identified. This breakup helps the researcher to identify minimum 10 respondents from a ward. While 10 respondents were identified from each ward of a panchayat, 20 respondents were identified from each ward of a municipality or corporation. This is due to high population density of urban and semi urban areas as compared to

[112] Rick C. Farr and Paul R. Timm. (2004). Business Research: An Informal Guide, Viva Books Private Limited, New Delhi, p. 66.

[113] Crimp M. and Wright L. T. (1995). The marketing research process, (4th ed.), Prentice Hall, London, p. 218.

[114] Hyman R. Michael and Sierra J. Jeremy. (2000). Marketing Research Kit for dummies. Wiley Publishing Inc., USA, pp. 217.

[115] Andy Field. (2009). Discovering Statistics Using SPSS, (3rd ed.). Sage Publications India Pvt. Ltd., New Delhi, p. 647.

rural areas. As the population is so large and the complete sampling frame is not available, the researcher further utilised judgemental sampling to select the respondents. Ranjit Kumar (2009)[116] explains that the primary consideration in judgemental or purposive sampling is the judgement of the researcher as to who can provide the best information to achieve the objectives of the study. The researcher only goes to those people who in his/her opinion are likely to have the required information and be willing to share it. Utmost care has been taken to ensure the selected sample as the true representation of the universe. The list of locality, selected places and the sample size of primary survey is given in the Appendix-II.

Secondary data: The secondary data for this research study were collected from various resources like journals, articles, publications, press releases, previous study reports, working papers, University and IIM e-resources, and the internet. The secondary data collected also from web sites of the Department of Telecommunications (DoT), Government of India, Telecom Regulatory Authority of India (TRAI), Telecom Service Providers, Cellular Operators Association of India (COAI), Association of Unified telecom Service Providers of India (AUSPI) and may other relevant sources. The data collected from the secondary resources gave considerable insight for the research study.

12. Reliability and validity

The questionnaire contains multi-item scales for measuring different variables. The measurement accuracy of a multi item scale mainly depends on its reliability and validity. The consistency and stability of the data collection instruments determines its reliability. Naresh K. Malhotra et al. (2011)[117] explains reliability as the extent to which a scale produces consistent results if repeated measures are made on the characteristic. Ranjit Kumar (2009)[118] describes that in social sciences it is impossible to have a research tool which is 100 per cent

[116] Ranjit Kumar. (2009). Research Methodology – A step by step guide for beginners, (2nd ed.). Dorling Kindersley India Pvt. Ltd., New Delhi, p. 179.

[117] Naresh K. Malhotra and Satyabhushan Dash. (2011). Marketing Research – An Applied Orientation, (6th ed.). Pearson Prentice Hall, India, New Delhi, p. 280.

[118] Ranjit Kumar. (2009). Research Methodology – A step by step guide for beginners, (2nd ed.). Dorling Kindersley India Pvt. Ltd., New Delhi, p. 156.

accurate, not only because it is impossible to control the factors affecting reliability. Some of these factors are: the wording of the questions, the physical settings, the respondents' mood and the nature of interaction.

Andy Field (2009)[119] suggests spilt-half reliability method as the simplest way to do check the reliability of an instrument. This method randomly splits the data set into two. A score for each participant is then calculated based on each half of the scale. If a scale is very reliable a person's score on one half of the scale should be same (or similar) to their score on the other half: therefore across several participants, scores from the two halves of the questionnaire should correlate perfectly well. The correlation between the two halves is the statistic computed in the spilt half method, with large correlations being a sign of reliability. The problem with this method is that there are several ways in which a set of data can be split into two and so the results could be a product of the way in which the data were split. To overcome this problem, Cronbach (1951) came up with a measure that is loosely equivalent to splitting data in two in every possible way and computing the correlation coefficient for each split. The average of these values is equivalent to Cronbach's alpha (α), which is the most common measure of scale reliability

Cronbach's, alpha is:

$$\propto = \frac{N^2\overline{Cov}}{\sum \sigma^2 + \sum Cov_{item}}$$

N = Number of items

$\overline{Cov}$ = Average covariance between items

σ^2 = Item variance

Cov_{item} = Item covariance

The alpha coefficient takes the value between 0 and 1. The value 0 indicates no consistency and value 1 indicates complete consistency between the various items of a multiple item scale. The value above 0.7 implies the acceptable level of reliability of the measuring scale.

[119] Andy Field. (2009). Discovering Statistics Using SPSS (3rd ed.). Sage Publications India Pvt. Ltd., New Delhi, p. 674.

Cronbach's, alpha coefficient is computed for all the multi item scales used in the questionnaire and the alpha values obtained were above 0.7. This ensures that the reliability of the questionnaire is within the acceptable level.

Validity is the ability of a measuring instrument to measure what it is designed to measure. While designing the questionnaire all aspects of validity especially: (i) face validity – the logical link between the questions and the objectives of the study, (ii) content validity – the questions cover the full range of the issue or attitude being measured, and (iii) construct validity – the theoretical and logical support for what construct, the scale is being measured were carefully considered. The validity of the questionnaire was assessed in the pilot study and suitable corrections were made in the questionnaire wherever appropriate.

13. Data analysis

The primary data collected were statistically processed, classified and tabulated using suitable methods. The Statistical Package for Social Sciences (SPSS 16.0) was used for data analysis. Appropriate statistical assessments and tests were applied for data analysis and hypotheses testing. The results are presented in tables.

The statistical techniques and tools used in the study are:

1. Frequency descriptive analysis.
2. Pearson's chi-square test ($\chi 2$)
3. Contingency table / Cross tabulation
4. Kolmogorov-Smirnov test
5. Shapiro-Wilk test
6. Levene's test
7. Kruskal-Wallis test
8. Mann-Whitney U test
9. Correlation analysis
10. Logistic regression analysis

Frequency descriptive analysis

It is a way of presenting data that shows the number of cases having each of the attributes of a particular variable. Frequency descriptive analysis converts large sets of data to more meaningful, easier to interpret, values. It also summarizes the data with useful statistical measures such as mean, median, mode, variance, standard deviation and range etc.

Pearson's chi-square test (χ^2)

The chi-square tests for relatedness or independence applies to the analysis for the relationship between two categorical variables[120]. The calculated value of χ^2 is compared with its critical value at a particular level of significance and degrees of freedom. A small chi-square statistic indicates that the null hypothesis is correct and that the two variables are independent of each other. The larger the observed (or actual) frequency is in comparison with the expected (or hypothesized) frequency, the larger the chi-square statistic. This indicates that the difference is statistically significant[121].

Contingency table / Cross tabulation

The cross-tabulation analysis, also known as contingency table analysis, is most often used to analyze categorical (nominal measurement scale) data. A cross-tabulation is a two (or more) dimensional table that records the number (frequency) of respondents that have the specific characteristics described in the cells of the table. Cross-tabulation tables provide useful information about the relationship between the variables which leads to meaningful inferences.

Kolmogorov-Smirnov test and Shapiro-Wilk test

The Kolmogorov-Smirnov test and Shapiro-Wilk test is used for testing the normality of distribution. These tests compare the scores in the sample to a normally distributed set of scores with the same mean and standard deviation. If the test is non-significant ($p>0.05$), it tell us that the distribution of the sample is not

[120] Sheridan J. Coakes, Lyndall Steed, and Peta Dzidic. (2007). SPSS Version 13.0 for Windows, Analysis without Anguish. Wiley Student Edition, New Delhi, p. 154.

[121] Paul Vogt W. (2005). Dictionary of Statistics and Methodology. Sage Publications India Pvt. Ltd., New Delhi, p. 43.

significantly differ from a normal distribution (i.e. it is probably normal). If however, the test is significant ($p<0.05$) then the distribution in question is significantly differ from a normal distribution (i.e. it is non-normal). Andy Field explains that the Shapiro-Wilk is more accurate than the Kolmogorov-Smirnov test. He added that, if the analysis involves comparing groups, then what is important in testing normality is consider the distribution in each group not the overall distribution[122].

Levene's test

The Levene's (Levene, 1960) test is used to assess the homogeneity of variance of a sample distribution. It tests the null hypothesis that the variances in different groups are equal. If the Levene's test is significant at $p\leq0.05$ then we can conclude that the null hypothesis is incorrect and the variances are significantly different - therefore, the assumption of homogeneity of variance has been violated.

Kruskal-Wallis test

The Kruskal-Wallis (William Kruskal and W. Allen Wallis, 1952) test is a non-parametric test of statistical significance used when testing more than two independent samples[123]. It is one-way analysis of variance (ANOVA) for rank order data and is based on medians rather than means. It is an extension of the Mann-Whitney U test to three or more groups. When the Kruskal-Wallis test leads to significant results, then at least one of the samples is different from the other samples. The test does not identify where the differences occur or how many differences actually occur. Therefore the Mann-Whitney test is used to analyse post hoc procedures for Kruskal-Wallis test. The Mann-Whitney test would help analyze the specific sample pairs for significant differences. However if we use lots of Mann-Whitney tests, it will inflate the Type I error rate. Andy Field suggests Bonferroni[124] correction to ensure that Type I error don't build up to more than 0.05.

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[122] Andy Field. (2009). Discovering Statistics Using SPSS (3rd ed.). Sage Publications India Pvt. Ltd., New Delhi, pp. 147 -150.

[123] Paul Vogt W. (2005). Dictionary of Statistics and Methodology. Sage Publications India Pvt. Ltd., New Delhi, p. 166.

[124] Andy Field. (2009). Discovering Statistics Using SPSS (3rd ed.). Sage Publications India Pvt. Ltd., New Delhi, p. 565.

It just means that instead of using 0.05 as the critical value for significance for each test, use a critical value of 0.05 divided by the number of tests conducted. Therefore in the post hoc analysis of Kruskal-Wallis test if we want to compare BSNL with three other telecom service providers, three Mann-Whitney tests are suggested. On application of Bonferroni correction, the critical level of significance would be 0.05/3=0.0167, rather than to use 0.05.

Mann-Whitney U test

Mann-Whitney U test[125] is a test of statistical significance of difference between two groups. It is used when the data for two samples are measured on an ordinal scale. It is a non-parametric equivalent of t-test. Although ordinal scales of measurements are used with the Mann-Whitney test, an underlying continuous distribution is assumed. This test is also used instead of the t-test with interval level data when researchers do not assume that the populations are normal.

Correlation analysis

Correlation is the extent to which two or more things are related ("co-related") to one another. This is usually expressed as number called correlation coefficient, which varies from -1.0 to +1.0. The correlation coefficient -1.0 indicates a perfect negative correlation and +1.0 indicates a perfect positive correlation. A correlation coefficient zero means there is no relationship between the variables. There are numerous ways to compute correlation coefficients depending on the kinds of variables being studied. Among the most common are Pearson product-moment, Spearman's rho, and Kendall's tau.

Logistic regression analysis

Logistic regression is used to predict a discrete outcome based on variables which may be discrete, continuous or mixed. Thus the dependent variable may have two or more than two discrete outcomes, the logistic regression is a commonly used technique. Logistic regression computes the log odds for a particular outcome. The odds of an outcome are given by the ratio of the probability of it happening and not

[125] Paul Vogt W. (2005). Dictionary of Statistics and Methodology. Sage Publications India Pvt. Ltd., New Delhi, p. 184.

happening as: P / (1 - P), where P is the probability of an event. There are some mathematical issues in reporting these odds, so natural logarithms of these odds are calculated. These values may vary from - infinity to + infinity. A positive value indicates that odds are in favour of the event and event is likely to occur while a negative value indicates that odds are against the event and the event is not likely to occur. A change in one unit on the part of an independent variable will multiply the odds by exp (B), where B is the logistic regression coefficient for the independent variable under consideration. The dependent variable in logistic regression may have two or more outcomes. If the dependent variable has only two outcomes, the method is called Binary Logistic Regression. However, if there are more than two outcomes associated with the dependent variable, the method is called Multinomial Logistic Regression[126].

14. Chapterisation

The whole study is presented in five chapters.

- Introduction
- Chapter - I

  The Telecommunication Services Industry – An Overview
- Chapter - II

  Marketing Strategies of Telecom Service Providers
- Chapter - III

  Analysis of Marketing Strategies of BSNL and Private Sector Telecom Service Providers in Kerala
- Chapter - IV

  The Findings of the Study
- Chapter - V

  Suggestions, Recommendations and Conclusion

[126] Ajai S. Gaur and Sanjay S. Gaur. (2009). Statistical Methods for Practice and Research – A Guide to Data Analysis Using SPSS, (2nd ed.). Response Books, India, pp. 121-122.

15. Limitations of the study

- The primary data is collected from the respondents through a survey using the questionnaire designed for the study. It is difficult to control certain inherent limitations of social surveys such as natural bias in responses of the respondents. There are chances that the answers of the respondents may be influenced by their mood and cognitive limitations. The respondents may interpret the questions differently resulting in inapt responses. Although utmost care has been taken to ensure the reliability and validity of the questionnaire, the possibility of such errors cannot be completely ruled out.
- The study is limited to identify and illustrate different marketing strategies adopted by telecom service providers for the marketing of mobile telephone services, third generation mobile telephone services, landline telephone services, and landline broadband services among retail customers of Kerala. The marketing strategies related to wholesale business and Business to Business (B_2B) solutions, offered by the telecom service providers are not considered in the study.
- The market of telecommunication services in Kerala is highly dynamic and extremely competitive. Due to the frequent changes in the marketing strategies of the service providers, the latest trends after the primary data collection process could not be included in this study.

Considering the scope and specific objectives of the study, these limitations, however, do not seriously affect the quality of the research work. An earnest attempt has been made by the researcher to arrive at meaningful conclusions through systematic analysis of data.

CHAPTER – I

THE TELECOMMUNICATION SERVICES INDUSTRY – AN OVERVIEW

CHAPTER – I

THE TELECOMMUNICATION SERVICES INDUSTRY - AN OVERVIEW

"The Americans have need of the telephone, but we do not. We have plenty of messenger boys."

- Sir William Preece.

Chief Engineer of the British Post Office, 1876

1.1 Introduction

The telecommunications sector plays a significantly important role in the socio-economic development of the country. It contributes to Gross Domestic Product (GDP), generates revenue for the government and creates job opportunities. The advancements in telecommunication services in India facilitated to bridge the digital divide - the gap between haves and have-nots in information and communication facilities. The Indian telecom services industry has experienced great changes and developments for the last two decades. Kerala among the States in India is forefront in these developments. The telecommunication services industry has progressed through telegraph services, landline telephony, mobile radio paging services, first, second and third generation mobile telecom services. Now it is the era of fourth generation mobile telecom services with sophisticated technology and equipments.

1.2 The evolution of telecommunication services

The history of modern telecommunication services originated with the invention of electrical telegraph by an American artist-turned inventor Samuel F. B. Morse[1] in 1837. The signals used for transmitting telegraph messages are called Morse code. The British started telegraph services in India at Calcutta in the year 1850. In addition to postal services, telegraph services too became the part of long distance communication. In 1854 the Telegraph Act was enacted in India. Subsequently a permanent Telegraph Department was set up and telegraph facilities

[1] https://en.wikipedia.org/wiki/Telegraphy, retrieved on 04.07.2013.

were exposed to public traffic[2]. In Kerala the telegraph offices started functioning at Trivandrum, Kollam and Alleppey in the year 1864. The telegraph service was the one and only shelter for the instant long distance communications for a long period. The nationwide scattering and function of post offices have made the telegraph services accessible for the people.

The revolution in the field of telecommunication started in the world with the invention of telephone by Alexander Graham Bell in 1876[3]. The Oriental Telephone Company Limited of England opened telephone exchanges at Calcutta, Bombay, Madras and Ahmadabad within five years after the invention of the telephone. But it took quite a long time, to reach the telephone facilities at Kerala. The first manual telephone exchange with 100 line capacity was installed in Kerala at Ernakulum only in the year 1923. The telephone exchanges are the key points in the telecommunication networks. The switching systems installed in the telephone exchanges establish temporary connection between calling and called subscribers. In early stages of telecom developments this process of interconnection of telephone lines was done manually at telephone exchanges. Gradually the automatic switching systems started evolving. The first one in this kind was automatic mechanical switching system developed by Almon B. Strowger in 1889[4], known as Strowger switching system. The Travancore State Telephone System maintained by the Travancore Electricity Department established the first auto exchange in Trivandrum in the year 1948. Subsequently the Travancore State Telephone System was taken over by the Indian postal department in 1950[5].

The next evolution in the telecom networks was the introduction of electro-mechanical switching systems, generally known as cross-bar telephone exchanges. These switches were fairly common in the developed countries during 1950s. In Kerala the first cross-bar telephone exchange was installed at Ernakulam in the year 1968. In the year 1973, the first STD (subscriber trunk dialing) route in Kerala opened between Trivandrum and Kottayam. In 1975, the first Trunk Automatic

[2] http://www.frontline.in, retrieved on 04-07-2013.

[3] http://fi.edu/franklin/inventor/bell.html, retrieved on 04.07.2013.

[4] http://en.wikipedia.org/wiki/Almon_Brown_Strowger, retrieved on 04.07.2013.

[5] http://www.kerala.bsnl.co.in, retrieved on 04.07.2013.

Exchange (TAX) commissioned in Trivandrum and STD services started from Trivandrum to Delhi. In the same year, the telecommunication wing was separated from Indian postal department and department of telecommunications (DoT) was formed. In 1979 STD PCOs (Public Call Offices) opened in Kerala. Although these developments were taken place and a separate government department was formed for telecom services, the progress of telecom services sector was substantially in a very slow pace in Kerala. The accesses to the telephone services even through the public call offices were alien to the vast majority of general public. They depended on the telegraph service available through the post offices for their immediate communication needs at distant places. The telegraph services were one of the major businesses of post offices at that period.

The digital telephone exchanges were introduced in Kerala during the year 1985. By the year 1987, out of a 608 telephone exchanges in Kerala, 434 telephone exchanges had been interconnected by group dialing facility[6]. Within a short span of ten years the digital switching systems replaced all its predecessors. This sudden technological change caused a crucial human resource issue in the telecom department, because the manpower requirements for the management of digital telephone exchanges were very few as compared to the earlier systems. The manual telecom operators are not at all required in the digital switching system. Even though the excess employees were redeployed in clerical and other cadres, the progressive computerisation further complicated this issue. The legacy of government setup, interventions of trade unions, legal battles related to promotions and cadre issues made human resource management still a complicated problem in DoT (Department of Telecommunications) turned BSNL (Bharat Sanchar Nigam Limited).

Although the telecom revolution was took place in the world, the telephone facilities in India were confined only to the upper class of the Indian society till 1990s. Even in the late 1990s, ten year old waiting lists were existed in the telephone exchanges of Kerala to get the ordinary telephone connections.

The telegraph services were quite popular till the introduction of subscriber's trunk dialing (STD) facility in landline telephone networks. In Kerala the STD

[6] http://www.kerala.bsnl.co.in, retrieved on 04.07.2013.

facility in telephones became widespread in the latter part of 1990s. The telegraph service lost its glory with the further advancements in landline and mobile telecommunication networks. The 163-year-old telegraph services in the country were closed by July 2013. The huge shortfall in revenue caused the closure of telegraph services.

In India in late 1990s the access to internet services was introduced in landline networks in a very limited manner through dial-up modems. The speed of data access was very low in this narrowband internet services. In early 2000s the broadband internet services were introduced in India. The broadband service provides high speed access to the information super highway - the internet. The broadband services have potential applications in tele-education, tele-medicine, e-governance, entertainment as well as employment generation by way of high speed access to information and web-based communication. The demand for broadband is primarily conditioned and driven by the penetration of internet and personal computers. The penetration of broadband, internet and personal computers in the country was 0.02%, 0.4% and 0.8% respectively at the end of December, 2003[7]. In order to accelerate the growth of broadband services, the Government of India introduced the broadband policy in 2004. The policy defines the broadband connectivity as an 'always-on' data connection that is able to support interactive services including internet access and has the capability of the minimum download speed of 256 Kilo bits per second (Kbps) to an individual subscriber from the point of presence (POP) of the service provider intending to provide broadband service where multiple such individual broadband connections are aggregated. The technology options to provide broadband services are optical fibre technologies, digital subscriber lines (DSL) on landline copper loop, cable television network, satellite media, and terrestrial wireless technologies. The broadband services through the existing landline network became a golden opportunity for landline telecom service providers.

[7] Broadband Policy, 2004, Government of India. Retrieved from http://dot.gov.in/telecom-polices/broadband-policy-2004.

The landline subscriptions increased from 2.3 million in the year 1981 to 32.44 million in the year 2000[8] in India. The beginning of the twenty first century witnessed the world wide overwhelming growth of mobile telecom services. In the year 2002, with one billion users worldwide, mobile communications for the first time surpassed fixed-line subscribers. Ingo Vogelsang (2009)[9] describes the phenomenon of FMS (Fixed to Mobile Substitution). The main explanatory factors for the increased FMS in wealthy countries seem to be the demand substitution from large price reductions in mobile relative to fixed services and demand shifts arising from network effects and the relative quality increase of mobile handsets or services. Lower or reduced switching costs may have played some role, as has the stimulating effect of the universal spread of mobile. The mobile subscriptions exceeded fixed line connections in India in the year 2004. Although the mobile connections overtook landline connections, the land line segment was growing till the year 2006 and reported a subscriber base of 41.54 million. The landline industry has been showing declining trends since 2006. The fixed phones were widely substituted by mobile phones in India due to convenience and low pricing of the fast growing mobile telecom services.

At this declining stage of landline telephone services, the landline broadband services gave some hope to the landline telecom services sector. To an extent the broadband services provide value addition to the landline telephone services. In the wired access category, the landline broadband is the most preferred technology option as it constitutes 84.81% of total broadband subscribers[10]. Chun-Yao Huang (2011)[11] elaborated that people in developing countries have been able to skip landline-based telecommunication systems by directly adopting mobile phones and enjoying their convenience. Such an observation is usually labelled as leapfrogging. Relative to landlines, a mobile system is relatively cost efficient in infrastructure

[8] Report on Telecom Sector in India: A Decadal Profile. (2012). Telecom Regulatory Authority of India, p. 5.

[9] Ingo Vogelsang. (2009). The relationship between mobile and fixed-line communications: A survey. Information Economics and Policy 22, Elsevier B. V, pp. 4-17.

[10] The Report on Indian Telecom Services Performance Indicators, January – March, 2013. Telecom Regulatory Authority of India, pp. 27-29.

[11] Chun-Yao Huang. (2011). Rethinking leapfrogging in the end-user telecom market. Technological Forecasting & Social Change, 78, Elsevier Inc, pp. 703–712.

investment. Indeed, many people in developing countries benefit greatly from the relatively accessible mode of mobile telecom services. Telecom leapfrogging happens in within-country sense in which people directly jump to mobile systems without the stepping stone of landlines.

The present developments in telecommunication services sector show that the leapfrogging is not only applicable to landline telephone services but also to landline broadband services. The advancements of wireless broadband services raise unpleasant signals for the landline broadband services. In India the broadband customer base fetched 164.81 million by March 2013. Out of this, 143.20 million customers (86.88%) belong to wireless broadband services. The wireless broadband services become increasingly favourable to the customers than the wired access broadband services. The upcoming mobile telecom generations will probably make the wireless broadband more and more advantageous to the customers.

In India by the end of March 2013, the number of the landline subscriptions came down to 30.21 million. The public sector landline telecom service providers are BSNL and MTNL. The private sector landline telecom service providers are Reliance, Bharati Airtel, Tata, Quadrant, Sistema and Vodafone. Even in the decline stage of the landline industry the private sector providers have substantially improved their positions. The BSNL is the most adversely affected service provider in the down turn of landline industry.

During the pre-liberalization regime in the country, the business of telecommunication services was fully managed under government monopoly. The whole telecom business in all regions other than Mumbai and Delhi were carried out directly by the government department, the Department of Telecommunications (DoT). In Mumbai and Delhi the telecom business was the monopoly of a Government owned company called MTNL (Mahanagar Telephone Nigam Limited). The Government of India corporatized the operations and telecom business wing of DoT on 1st October 2000 and named it as Bharat Sanchar Nigam Limited (BSNL). The BSNL operates as a public sector enterprise. Initially BSNL concentrated only on fixed line (landline) telecom business. By the end of the year 2002, BSNL also started operating mobile communication services.

1.3 The mobile revolution

In the world scenario of telecommunication developments, the mobile (radio) telephony also started evolving along with the wired telephone networks. In 1895, Guglielmo Marconi transmitted wireless signals across a distance of more than a mile, an event that may consider the birth of radio[12]. During the initial periods, the progress of radio access communication systems was very slow. It began to grow gradually with the advent of radio engineering, electronics and enhanced electronic computing power. During the Second World War radio telephony links were utilized for military gains. Hand-held radio transceivers became available from 1940s. In the United States, engineers from Bell Labs began to work on a system to allow mobile users to place and receive telephone calls from automobiles, leading to the inauguration of mobile service on 17th June 1946 in St. Louis, Missouri, USA.

During the same period, along with mobile telephony, mobile paging services also appeared in the telecom world. The pager was primarily a one-way communication system that receives and displays numeric or text messages. One of the first practical paging services was launched in 1950 for physicians in the New York City. Physicians paid US$12 per month for the service and carried a 200 gram pager that would receive messages within 40 kilometers from a single transmitter tower. The system was manufactured by the *Reevesound* Company and operated by *Telanswerphone*.[13]

The Motorola was the first company to produce a handheld mobile phone. On 3rd April 1973 Martin Cooper, a Motorola engineer and executive, made the first mobile telephone call from handheld subscriber equipment in front of reporters, placing a call to Dr. Joel S. Engel of Bell Labs, USA[14]. The further developments in mobile telephony gave birth to the first generation (1G) mobile telecommunication services. The first generation mobile networks launched in early 1980s were designed with primary focus on voice communications - analog in nature - and facilitated localized wireless services. The major first generation systems were

[12] Dan Steinbock. (2005). The Mobile Revolution – The making of Mobile service worldwide. Kogan Page, London, p. 36.

[13] http://en.wikipedia.org/wiki/Pager, retrieved on 04.07.2013.

[14] http://en.wikipedia.org/wiki/History_of_mobile_phones, retrieved on 04.07.2013.

AMPS (Advance Mobile Phone System) of United States of America, TACS (Total Access Communications System) of Europe and NMT (Nordic Mobile Telephony) of Scandinavian countries. The systems were known as 'cellular systems because coverage areas were split into smaller areas or 'cells' for facilitating frequency reuse. Each cell is served by a Base Transceiver Station (BTS) commonly known as mobile tower. The use of first generation mobile telecom services was limited mainly in developed counties. The first generation services didn't have any root in India.

The public access mobile telecommunication services in India started with mobile radio paging services. India opened up Radio Paging Service in the year 1992 and awarded licenses for 27 cities and 19 Circles (States) through an open tendering process. The service was commercially launched in 1995. The licensed radio paging service providers in Kerala were: *BPL Wireless* (Circle paging license including cities of Ernakulam and Trivandrum), *Punwire Mobile* (Circle paging license excluding cities of Ernakulam and Trivandrum), *Telesistem* (City paging license to operate on cities of Ernakulam and Trivandrum), and *Eider PWI Com* (City paging license to operate on Trivandrum city). The Government fixed ceiling for the tariff of radio paging services. The ceilings fixed on rental were ₹ 150 for both numeric and alphanumeric pagers. This ceiling has since been revised by TRAI (Telecom Regulatory Authority of India) to ₹ 175 and ₹ 300 per month for numeric and alphanumeric pagers respectively. It is interesting to look at the cost of pagers available at that time in India. The costs vary with functional utility of the devices such that the cost of numeric pager was of the order of ₹ 1300. The indicative prices of alpha numeric pagers were: ₹ 1500 for single line pager, ₹ 1600 for two line pager, and ₹ 2000 for four line pager. In March 2000, the pager customer base in Kerala was nearly fifteen thousand against the national figure of 7.33 lakhs[15].

The great success in continued research and developments of mobile telephony caused the worldwide commercial launch of second generation (2G) public access mobile phone services in 1990s. The 2G systems were digital in

[15] Consultation Paper on Radio Paging Services in India. (2000). Telecom Regulatory Authority of India. www.trai.gov.in

nature, had enhanced voice capability, better radio spectrum management, wider coverage area and better mobility. The prominent 2G technologies are European based GSM (Global System for Mobile Communication) technology developed by the CEPT (Confederation of European Post and Telegraph) in association with ETSI (European Telecommunications Standardization Institute), and the CDMA (Code Division Multiple Access) based mobile technology developed by *Qualcomm Incorporated*, an American global semiconductor company[16]. These technologies were mainly used for mobile voice services. The 2G technologies support data services with low bit rates, ranging from 9.6 Kbps to 14.4 Kbps.

The second generation mobile communication services started in India in 1996. In Kerala the services started in the same year. At that time the mobile telephony was not a threat to paging services due to its luxurious nature. But in the subsequent years the cost of the cellular telephony was coming down very fast. The radio paging industry struggled hard to sustain. Meanwhile the pager companies targeted customers those who could not afford mobile phones but wish to remain stay connected while away from the normal workplace or home. In order to attract this segment, the radio paging service providers offered affordable communication facility, in conjunction with the availability of public call offices (PCO). But in due course the mobile telecom services became cheaper and more widely available. This caused the disruption of pager innovation.

In early 2000s the focus of wireless companies shifted to enhance data rates due to high market expectations for the same. Advancements were made to 2G technologies to meet the market requirements. By the year 2001, improved versions of second generation technologies such as GPRS (General Packet Radio Service), EDGE (Enhanced Data for GSM Evolution) and CDMA 2000 - 1x RTT (Radio Transmission Technology) were introduced. These technologies are commonly known as 2.5G technologies, offering data services such as voicemail, e-mail, location-based services (LBS), web surfing and other m-commerce applications with

[16] https://en.wikipedia.org/wiki/Qualcomm, retrieved on 04.07.2013.

data speed of the order of 384 Kbps[17]. The 2.5G mobile telecom services popularized in India from the year 2005 onwards. These services are still widely used in the country due to the barriers in the advancement of third generation (3G) technologies.

The third generation mobile communication systems promise faster communication services, including voice, video and data with seamless global roaming. This technology was born resulted from the vision of ITU (International Telecommunication Union). The ITU introduced the concept of 3G technology in the mid-1980s known as IMT-2000, (International Mobile Telecommunications - 2000). The IMT-2000 was the result of collaboration of many entities, inside the ITU and agencies outside the ITU such as 3GPP (Third Generation Partnership Project), 3GPP2 (Third Generation Partnership Project Two), and so on. The 3GPP group was responsible for the development and growth of the UMTS (Universal Mobile Telecommunications Systems) technology. The UMTS is the evolutionary 3G system of the GSM (Global System for Mobile communication) family. The 3GPP2 group was responsible for the development and standardization of CDMA2000 (Code Division Multiple Access 2000) based 3G systems[18]. The ITU's global standard for 3G, the IMT-2000 had opened the way for enabling innovative applications and services like multimedia entertainment, infotainment and location-based services. On 1st October 2001[19], the 3G services were commercially launched by NTT DoCoMo in Japan. According to ITU, 3G services should provide data rates of 144 Kbps for vehicular, 384 Kbps for pedestrian and 2 Mbps for indoor environment.

On 11th December 2008, India entered the 3G arena with the launch of 3G enabled mobile and data services by the government owned telecom company, Mahanagar Telephone Nigam Limited (MTNL) in Delhi and then in Mumbai. MTNL has become the first 3G mobile service provider in India. After MTNL,

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[17] Venkata Praveen Tanguturi, Fotios C. Harmantzis. (2006). Migration to 3G wireless broadband internet and real options: The case of an operator in India. Telecommunications Policy, 30, Elsevier Ltd, pp. 400–419.

[18] http://www.itu.int/osg/spu/imt-2000/technology.html, retrieved on 04.07.2013.

[19] https://en.wikipedia.org/wiki/3G, retrieved on 04.07.2013.

another State owned operator Bharat Sanchar Nigam Limited (BSNL) launched 3G services on 22nd February 2009 in Chennai and later launched 3G nationwide. The auction of 3G wireless spectrum was announced in April 2010 and 3G Spectrum allocated to private 3G service providers on 1st September 2010[20].

Even though the initial growth rate was very low in mobile segment due to varied reasons such as premium pricing of services, lower network coverage and relatively high cost of mobile handsets, the subsequent favourable policy matter decisions of the government, ever growing mobile communication technologies and competition among mobile service providers helped mobile telecom services industry to grow in India in a rapid manner. The mobile phone subscriptions enhanced from the relatively small figure of 1.88 million in March 2000[21] to 867.8 million in March 2013. The number of mobile telecom services providers became 13 by March 2013. The service providers and their market share are Airtel (21.69%), Vodafone (17.56%), Reliance (14.17%), Idea (14.01%), BSNL (11.66%), TATA (7.65%), Aircel (6.92%), Uninor (3.65%), Sistema (1.37%), MTNL (0.58%), Loop (0.35%), Videocon (0.23%), and Quadrant (0.16%).

The fourth generation mobile telecom services marketed as 4G LTE (Long Term Evolution) is a standard for wireless communication of high-speed data for mobile phones and data terminals. It is based on UMTS (Universal Mobile Telecommunications Systems) network technologies, increasing the capacity and speed using a different radio interface together with core network improvements. This standard is developed by the 3GPP. The world's first generally available LTE service for the public was launched by the *TeliaSonera AB*, the dominant telephone company and mobile network operator in Sweden and Finland. The services were launched in Oslo, Norway and Stockholm, Sweden on 14th December 2009. Samsung introduced world's first LTE Mobile phone on September 2010. The LTE specification provides downlink peak rates of 300 Mbps and uplink peak rates of 75 Mbps. The LTE has the capacity to manage fast-moving mobiles and supports multi-cast and broadcast streams. The evolution has progressed and the next stage of

[20] http://en.wikipedia.org/wiki/3G_adoption, retrieved on 04.07.2013.

[21] Report on Telecom Sector in India: A Decadal Profile. (2012). Telecom Regulatory Authority of India, p. 5.

LTE is LTE advanced, which was standardized in March 2011. The LTE advanced networks will provide mobile ultra-broadband (gigabit speed) access. The services are expected to start functioning in the year 2013 itself[22]. In India the 4G services were introduced at Kolkata by the telecom service provider Airtel on 10th April 2012[23].

1.4 The developments of telecom services industry in Kerala

The Indian telecom industry has experienced an amazing growth and development particularly in mobile communications sector during the last decade. The contribution of Kerala in this achievement is commendable. The tele density, the total of telephones per 100 inhabitants, is considered as one of the parameters closely related to the development of a State. The overall tele density in Kerala is 96.09% against the national figure 73.32% as on 31st March 2013[24]. In Kerala the urban and rural tele densities are 196.11% and 61.93% respectively. The corresponding values in India are 146.96% and 41.02%. The advancements in telecommunication services sector in Kerala are evident from these figures. The data reveals that an urban Keralite holds two telephones on an average. In Kerala the mobile phone and landline subscriptions reached 306.89 lakhs and 30.65 lakhs respectively in March 2013[25]. This indicates the trends of market saturation in Kerala.

1.4.1 Landline telecom services sector in Kerala

The landline telephone industry of Kerala was the monopoly of DoT turned BSNL till the year 2004. The private telecom service providers Reliance, Bharati Airtel and Tata started their landline telecom services in Kerala in the years 2004, 2005 and 2006 respectively[26]. The subscriber base of land line services in Kerala was growing till 2007. The reported landline subscriber base was 36.78 lakhs in the

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22 http://en.wikipedia.org/wiki/LTE_(telecommunication), retrieved on 04.07.2013.

23 http://en.wikipedia.org/wiki/4G, retrieved on 04.07.2013.

24 Report on Indian Telecom Services Performance Indicators, January - March, 2013. Telecom Regulatory Authority of India, p. 7.

25 Press releases on subscriber data, March 2013. Telecom Regulatory Authority of India. www.trai.gov.in

26 Source: Association of Unified telecom Service Providers of India. www.auspi.in

same year. In the year 2006 mobile subscriptions surpassed fixed line connections in Kerala. The mobile phone becomes the substitute to landline connections due to the positive cross price elasticity of demand. The table 1.4.1 shows landline connections in Kerala pertaining to various telecom service providers during the period 2006-2013. The percentage market share of service providers are also indicated in the table.

Table 1.4.1

Landline connections in Kerala 2006-2013
(Percentage market share within brackets)

Year	Service Providers				Total
	BSNL	Airtel	Reliance	Tata	
2006	3571683 (99.47)	11672 (0.32)	7313 (0.2)	184 (0.01)	3590852 (100)
2007	3630567 (98.7)	26790 (0.72)	20602 (0.56)	554 (0.02)	3678513 (100)
2008	3586119 (97.64)	38917 (1.06)	44006 (1.2)	3656 (0.1)	3672698 (100)
2009	3463628 (96.85)	50774 (1.42)	55525 (1.55)	6443 (0.18)	3576370 (100)
2010	3345461 (96.72)	51808 (1.5)	51808 (1.5)	9641 (0.28)	3458718 (100)
2011	3182212 (96.41)	55037 (1.67)	53194 (1.61)	10346 (0.31)	3300789 (100)
2012	3065384 (96.1)	55778 (1.75)	56298 (1.76)	12336 (0.39)	3189796 (100)
2013	2943505 (96.04)	55971 (1.83)	54014 (1.76)	11328 (0.37)	3064818 (100)

Source: Data extracted from Press releases on subscriber data from March 2006 to March 2013. Telecom Regulatory Authority of India. www.trai.gov.in

In Kerala the telecom industry witnessed huge disconnections of fixed line telephones and tremendous additions of mobile telephones from the year 2007 onwards. The effective price per minute usage in landline was ₹ 1.5 till the year 2005[27] and was reduced to less than a rupee in 2012[28]. It can be noticed that the

[27] Source: Study Paper on Indicators for Telecom Growth. (2005). Telecom Regulatory Authority of India). Study paper No. 2/2005.

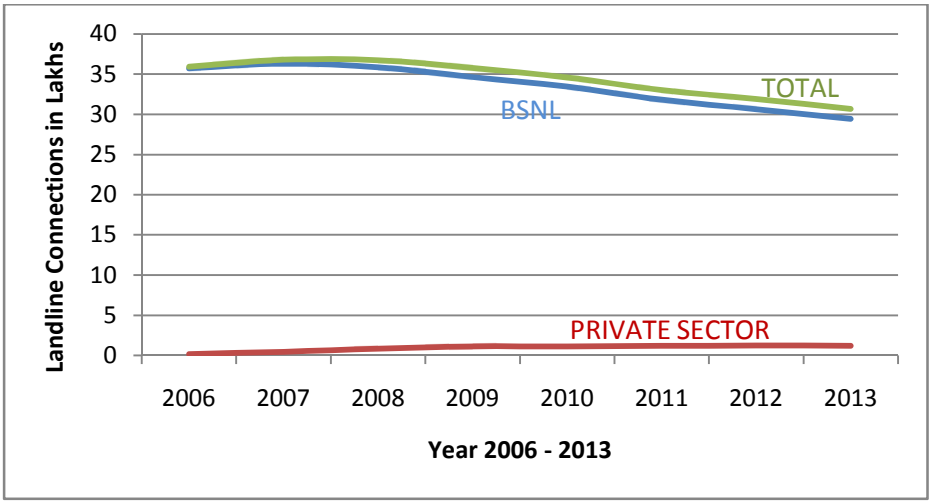
[28] Source: BSNL Landline tariff card, March 2012. www.bsnl.co.in

landline industry is facing declining stage of product life cycle, as customers are being switched over to mobile services. The convenience and very low pricing offered by mobiles services cannot be counterbalanced by landline industry. An interesting fact is that even though the total market shares of all of the private operators are nearly 4%, they are trying to maintain their subscriber base even in the decline stage of landline telecom industry.

The graphical representation of declining trends of landline industry of Kerala during the period from 2006 to 2013 is shown the figure 1.4.1. The service provider BSNL is the major contributor for the decline of the landline industry in Kerala.

Figure 1.4.1

The declining trends of landline industry in Kerala



Source: Data extracted from Press releases on subscriber data from March 2006 to March 2013. Telecom Regulatory Authority of India. www.trai.gov.in

1.4.2 Mobile telecom services sector in Kerala

In Kerala at the city of Kochi, the telecom service provider Escotel started mobile communication services in the year 1996. Later on, in the same year another service provider BPL also started mobile communication services in the State. Escotel and BPL were the two operators in Kerala till the year 2001. At that time the mobile phone was a status icon among the upper class society in Kerala. The growth rate of mobile telecom services was very slow during that period. The mobile subscriber base reached a relatively low figure of 3.49 lakhs at the end of the

year 2001. The effective mobile call charges during 1998-1999 periods were ₹ 16/- per minute and the mobile incoming calls were also chargeable[29]. Further to the implementation of NTP 1999, there was trend in reduction in tariff of mobile communication services. The mobile call charges reduced to ₹ 4/minute by March 2002. At the end of the year 2002, the telecom service providers Airtel and BSNL entered into the mobile telecom market of Kerala. The initial penetration pricing strategy of BSNL became a major breakthrough in mobile tariff. The tariff had been reduced to less than a rupee per minute and incoming calls of mobile telephones became free. Gradually the competition in the mobile telecom market enhances and price war begins. In the year 2003, Reliance also started mobile telecommunication services in Kerala.

The table 1.4.2 shows the details of subscriber base of mobile telecom service providers in Kerala during the period from 1997 to 2004. The competition in the market caused further reduction in call charges. At the end of year 2004 the mobile customer base in Kerala became 20.21 lakhs.

Table 1.4.2

Mobile subscriber growth in Kerala from 1997 to 2004
(Subscribers in lakhs & percentage market share-within brackets)

Service Provider	1997	1998	1999	2000	2001	2002	2003	2004
Escotel	0.09 (64.29)	0.23 (57.5)	0.41 (50.62)	1.25 (50.4)	1.99 (57.02)	2.44 (45.95)	3.39 (32.5)	5.45 (26.96)
BPL	0.05 (35.71)	0.17 (42.5)	0.4 (49.38)	1.23 (49.6)	1.5 (42.98)	1.48 (27.87)	2.03 (19.46)	3.71 (18.36)
Airtel	-	-	-	-	-	0.66 (12.43)	1.31 (12.56)	3.32 (16.43)
BSNL	-	-	-	-	-	0.73 (13.75)	3.5 (33.56)	6.7 (33.15)
Reliance	-	-	-	-	-	-	0.2 (1.92)	1.03 (5.1)
Total	0.14 (100)	0.4 (100)	0.81 (100)	2.48 (100)	3.49 (100)	5.31 (100)	10.43 (100)	20.21 (100)

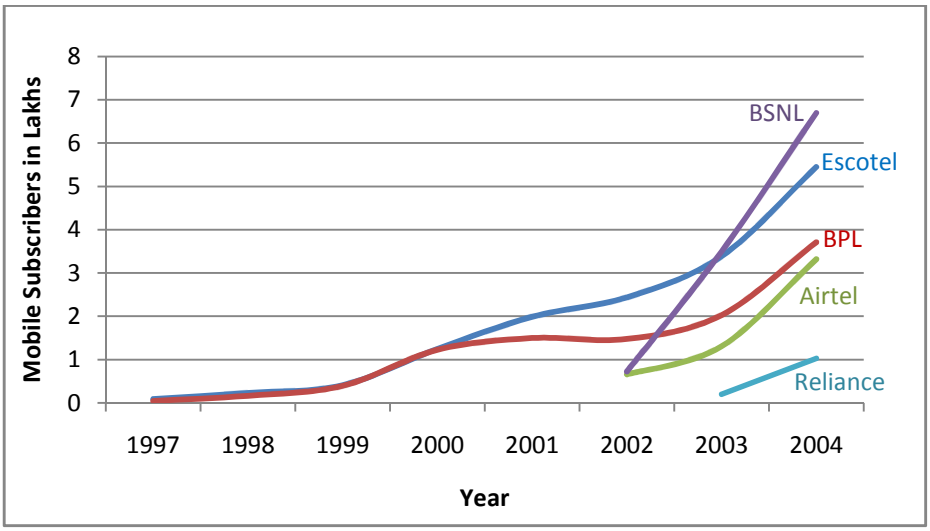
Source: Data extracted from Cellular Operators Association of India, www.coai.com and Association of Unified telecom Service Providers of India, www.auspi.in

[29] Study Paper on Indicators for Telecom Growth. (2005). Telecom Regulatory Authority of India. Study paper No. 2/2005.

The figure 1.4.2 shows the market performance of various telecom service providers in Kerala during the period from 1997 to 2004.

Figure 1.4.2

Market performance of mobile telecom service providers in Kerala from 1997 to 2004



Source: Data extracted from Cellular Operators Association of India, www.coai.com and Association of Unified telecom Service Providers of India, www.auspi.in

It is evident from the figure 1.4.2 that, the performance of BSNL was awesome during this period even though it was a late entrant. Subsequently at the end of the year 2004, the Idea cellular bought over the telecom company Escotel[30]. In the year 2005 Tata Teleservices also entered in the mobile telecom services market and the number of mobile operators became six in Kerala. The mobile telecom service providers in Kerala as on December 2005 with their respective subscriber base and market share (shown in brackets) were: BSNL (11.89 lakhs, 36.18%), Idea (7.66 lakhs, 23.31%), Airtel (5.17 lakhs, 15.74%), BPL (4.26 lakhs, 12.96%), Reliance (2.52 lakhs, 7.67%) and Tata (1.36 lakhs, 4.14%). The total mobile customer base became 32.86 lakhs.

In the year 2006, BPL was taken over by Hutchison Essar and the mobile services were branded as Hutch. Subsequently in 2007, Hutch was taken over by Vodafone. The presence of multiple operators further boosted the competition in mobile telecom market of Kerala. The BSNL continued at the top in market share

[30] http://en.wikipedia.org/wiki/Idea_Cellular, retrieved on 04.07.2013.

till the year 2007. The market share of BSNL was 26.19% with 23.97 lakhs of mobile connections as per the figures in August 2007. The Idea was at the second position with a market share of 22.21% and subscriber base of 20.33 lakhs. At the same time, the total mobile customer base of Kerala enhanced to 91.53 lakhs.

In the year 2008, the Idea became the number one mobile service provider in Kerala in terms of market share. The Idea consistently keeps its first position from that time onwards. The BSNL stood in the second place in the year 2008 and the Vodafone was the close follower. In the year 2009 the Vodafone pushed the BSNL to the third place. In the same year, three more operators namely MTS, Aircel, and Uninor entered in the market of mobile telecommunication services in Kerala. The competition became extremely tight in Kerala with six incumbent operators and the three new entrants. By the year 2010, the competition was between Vodafone and BSNL for the second place, and Vodafone won it. The subscriber base and market share of Idea, Vodafone and BSNL were 60.01 lakhs (22.06%), 46.3 lakhs (17.02%), and 44.92 lakhs (16.51%) respectively. The mobile customer base in Kerala became 196.28 lakhs. One more mobile telecom service provider Videocon started services in Kerala in the same year. In the year 2011, the BSNL had taken back its second position from Vodafone. It can be seen that during the period 2012-2013, the BSNL with its second position, created tough competition to the Idea, the market leader. As on 31st March 2013, the mobile subscriber base and market share of Idea, BSNL and Vodafone in Kerala were 79.21 lakhs (25.81%), 77.23 lakhs (25.17%), and 62.02 lakhs (20.21%) respectively and the total mobile subscriber base became 306.89 lakhs. The table 1.4.3 shows the details of mobile subscriber base of various telecom service providers in Kerala during the period from August 2007 to March 2013.

Among the new comers, the market performance of Aircel was quite interesting. Within a short span of three years, by the end of 2011, it could gather 7.23 % market share with 24.06 lakhs of connections in Kerala. But in the next year their market share and subscriber base declined. The subscriber base drastically reduced to 1.04 lakhs as on 31st March 2013. This shows the clear indication of their market withdrawal. The service provider Uninor entered into Kerala market in the year 2009 and withdrew the operations in January 2013. Their maximum

achievement in customer base was during the year 2011, with 6.94 lakhs of connections and a market share of 2.09%. The Videocon started mobile telecommunication services in Kerala during the year 2010 and ended their business in December 2012. Their peak performance was in the year 2011 with 3.63 lakhs of connections with a market share of 1.09%. The mobile service provider MTS entered in the year 2009 and their glorious period was the year 2012 with 6.51 lakhs of connections and a market share of 1.95%. By March 2013, their market share declined to 1.56% (4.8 lakhs of connections.).

Table 1.4.3

Mobile subscriber growth in Kerala from 2007 to 2013
(Subscribers in lakhs & percentage market share - within brackets)

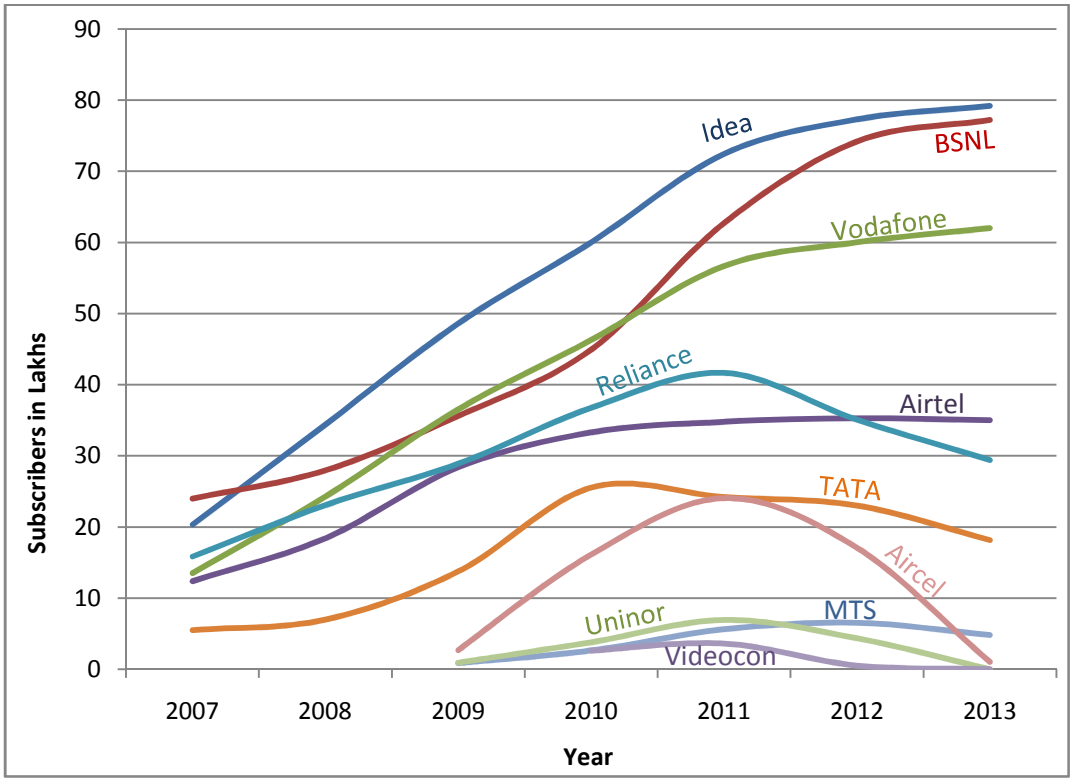
Service Provider	2007	2008	2009	2010	2011	2012	2013
Idea	20.33 (22.21)	34.4 (25.45)	48.6 (24.76)	60.01 (22.06)	72.45 (21.76)	77.31 (23.18)	79.21 (25.81)
BSNL	23.97 (26.19)	27.95 (20.68)	35.6 (18.14)	44.92 (16.51)	62.73 (18.84)	74.2 (22.26)	77.23 (25.17)
Vodafone	13.5 (14.75)	24.29 (17.98)	36.55 (18.62)	46.3 (17.02)	56.7 (17.04)	60.03 (18.01)	62.02 (20.21)
Airtel	12.38 (13.53)	18.42 (13.63)	28.4 (14.47)	33.3 (12.24)	34.8 (10.46)	35.3 (10.59)	35.02 (11.41)
Reliance	15.86 (17.32)	23.09 (17.09)	28.9 (14.72)	36.75 (13.51)	41.65 (12.52)	35.08 (10.52)	29.4 (9.58)
TATA	5.49 (6)	6.98 (5.17)	13.76 (7.01)	25.55 (9.39)	24.23 (7.28)	23.03 (6.91)	18.17 (5.92)
MTS	-	-	0.86 (0.44)	2.64 (0.97)	5.61 (1.69)	6.51 (1.95)	4.8 (1.56)
Aircel	-	-	2.69 (1.37)	16.13 (5.94)	24.06 (7.23)	17.08 (5.12)	1.04 (0.34)
Uninor	-	-	0.92 (0.47)	3.8 (1.4)	6.94 (2.09)	4.36 (1.31)	-
Videocon	-	-	-	2.6 (0.96)	3.63 (1.09)	0.5 (0.15)	-
Total	91.53 (100)	135.13 (100)	196.28 (100)	272 (100)	332.8 (100)	333.4 (100)	306.89 (100)

Source: Data extracted from Press releases on subscriber data from August 2007 to March 2013. Telecom Regulatory Authority of India. www.trai.gov.in

The graphical representation of relative market performance and growth trends of mobile telecom service providers in Kerala during the period from 2007 to 2013 is shown in figure 1.4.3.

Figure 1.4.3

Market performance of mobile telecom service providers in Kerala from 2007 to 2013



Source: Data extracted from Press releases on subscriber data from August 2007 to March 2013. Telecom Regulatory Authority of India. www.trai.gov.in

1.5 Mobile number portability

The mobile number portability (MNP) allows customers to change mobile operators without changing the mobile phone number. Prior to the implementation of MNP, customers were predominantly reluctant to switch their mobile network operator because they would have to change their mobile phone number. The changing of mobile telephone numbers can be a major inconvenience and a potential barrier preventing the customers from taking advantage of the options available in a hyper competitive telecommunications market and retaliating to the repeatedly unlikable customer experiences.

The implementation of MNP all over the country started in January 2011. In total of 84.26 million porting requests in India till January 2013, 3.55 million requests are from Kerala[31]. The implementation of MNP changed the customer more powerful than ever. The MNP created new opportunities and improved the customer experiences. The telecom service providers are compelled to innovate their services to retain existing customers especially in the saturated telecom market of Kerala.

1.6 Future developments of telecom services in India

The continuous advancements in telecom technologies gave birth to fourth generation (4G) mobile communication services and beyond. The ongoing research and developments will produce next generations soon. Apart from the conventional voice, video and data applications, the hand-held mobile phone in future will become an intelligent device with multiple enhancements. It may be used to monitor and control resources at far off places. The remote operations and control of office resources, house and house hold appliances like refrigerators, air-conditioners, ovens, washing machines etc. may be possible with further ICT (Information and Communications Technology) revolutions.

The future developments of telecom services in India are envisioned in the National Telecom Policy 2012[32]. The goal of the policy is to provide secure, reliable, affordable and high quality converged telecommunication services anytime, anywhere for an accelerated inclusive socio-economic development. The missions of the policy are: (i) To develop a robust and secure state-of-the-art telecommunication network providing seamless coverage with special focus on rural and remote areas for bridging the digital divide and thereby facilitate socio-economic development.(ii) To create an inclusive knowledge society through proliferation of affordable and high quality broadband services across the nation. (iii) To reposition the mobile device as an instrument of socio-economic empowerment of citizens. (iv) To make India a global hub for telecom equipment manufacturing and a centre for converged communication services. (v) To promote Research and Development, Design in

[31] Source: Data extracted from Press releases on subscriber data on March 2013. Telecom Regulatory Authority of India. www.trai.gov.in

[32] National Telecom Policy, 2012, Government of India. Retrieved from http://dot.gov.in/telecom-polices/office-memorandum-regarding-national-telecom-policy-2012.

cutting edge ICTE (Information and Communications Technology Enabled) technologies, products and services for meeting the infrastructure needs of domestic and global markets with focus on security and green technologies. (vi) To promote development of new standards to meet national requirements, generation of IPRs (Intellectual Property Rights) and participation in international standardization bodies to contribute information of global standards, thereby making India a leading nation in the area of telecom standardization. (vii) To attract investment, both domestic and foreign. (viii) To promote creation of jobs through all of the above.

The world now becomes more interconnected. The development of ICT networks and the services are important for achieving economic and social objectives. With the emergence of high bandwidth data connectivity, the ICT providers can offer powerful and innovative new services like cloud computing, which provide a platform for users with the opportunity to gain access to computational resources and applications beyond those traditionally feasible.

The customers constantly search for reduced prices, improved quality of service, better experiences and value added services. The telecom customers' expectation on the quality of service is very high in Kerala due to their experience in an exceptionally competitive telecom world. Therefore the telecom operators should strive hard to consistently exceed the expectations of customers. In the saturated telecom market of Kerala, it will be a hectic task for telecom service providers to devise appropriate marketing strategies to retain their customers and attract customers from competitors. In the next chapter, various marketing strategies practiced by BSNL and private sector telecom service providers in Kerala are discussed in detail.

CHAPTER - II

MARKETING STRATEGIES OF TELECOM SERVICE PROVIDERS

CHAPTER – II

MARKETING STRATEGIES OF TELECOM SERVICE PROVIDERS

"We don't care. We don't have to. We're the phone company."

- Lily Tomlin
American Actress, 1976.

2.1 Introduction

The American actress Lily Tomlin's (1976) quote shows the marketing attitude of telephone companies in the landline telephony dominant period of telecommunication services in the Unites States. The citation was fully relevant in the context of Indian telecommunication services sector till the mobile revolution started in mid-2000s. The liberalisation and privatisation initiated in India during 1990s caused major reforms in telecommunications services sector. The telecom policies rooted in liberalisation and privatisation regime paved the way for entry of foreign and domestic private sector telecom companies in India. The monopoly of government sector in telecommunication services ended and the private sector players began to expand telecom markets in an extensive manner. The business strategies of private sector players make them more excellent market performers than the government sector service provider BSNL. Many of the private sector providers have become the preferred brands of customers. The service provider Airtel became the top market performer in terms of telecom market share in India. At present the second, third, and fourth positions in terms of mobile telecom subscriber base in India are occupied by the service providers Vodafone, Reliance and Idea respectively. The DoT (Department of Telecommunications) turned BSNL with 160 years of legendary telecom experience in India became fifth in mobile telecom market performance.

The telephone density in India in early 1990s was about 0.8 per hundred persons[1]. It had been greatly improved to 73.32% in 2013. The number of mobile

[1] National Telecom Policy, 1994, Government of India. Retrieved from http://dot.gov.in/telecom-polices/national-telecom-policy-1994.

telecom services providers in India became 13 by March 2013 with a subscriber base of 867.8 million. The service providers and their market share are Airtel (21.69%), Vodafone (17.56%), Reliance (14.17%), Idea (14.01%), BSNL (11.66%), TATA (7.65%), Aircel (6.92%), Uninor (3.65%), Sistema (1.37%), MTNL (0.58%), Loop (0.35%), Videocon (0.23%), and Quadrant (0.16%). The advancement of telecommunication services in Kerala is considerably high; the telephone density in Kerala became 96.52% in 2013. The mobile subscriber base in Kerala as on March 2013 is 306.89 lakhs. The service provider Idea is the top market performer in the mobile telecom services sector of Kerala in terms of market share. The public sector service provider BSNL is the immediate follower. The mobile telecom service providers and their market share in Kerala during this period are: Idea (25.81%), BSNL (25.17%), Vodafone (20.21%), Airtel (11.41%), Reliance (9.58%), TATA (5.92%), MTS (1.56%), and Aircel (0.34%)[2].

The market performances of the organisations are primarily driven by their marketing strategies. The marketing strategy consists of the analysis, strategy development and implementation activities in: developing a vision about market(s) of interest to the organisation, selecting market target strategies, setting objectives and developing, implementing and managing the marketing program designed to meet the value requirements of the customers in each market target. The marketing strategy seeks to deliver superior customer value by combining the customer-influencing strategies of the business into a coordinated set of market driven actions. Strategic marketing provides the expertise for environmental monitoring, for deciding what customer groups to serve, for guiding product specifications, and for choosing which competitors to position against. The customers' value requirements must be transferred into product design and production guide lines. Market targeting and positioning strategies for new and existing products guide the choice of strategies for marketing program components[3].

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[2] Press releases on subscriber data, March 2013. Telecom Regulatory Authority of India. www.trai.gov.in

[3] David W. Cravens and Nigel F. Piercy. (2009). Strategic Marketing, (8th ed.). Tata McGraw-Hill, New Delhi, pp. 29-35.

The successful marketing strategies are formulated through the right combination of services marketing mix, the seven Ps, specifically product, price, place, promotion, people, physical evidence and process. Therefore the product strategy, pricing strategy, distribution (place) strategy, promotion strategy, people strategy, physical evidence strategy and process strategy are widely utilised by the telecom service providers to design, develop, differentiate and implement their marketing strategies. The various marketing strategies of telecom service providers based on services marketing mix are discussed in detail as follows.

2.2 Product strategies

The basic essentials of product in mobile telecom services are its core functional benefits. The key functional benefits desired by majority of the mobile telecom customers are voice clarity, geographical network coverage and easiness to get connected to the network. The frequent travellers outside the State consider roaming facility and the internet savvy customers consider the easiness in activation of internet services also as the core service benefits. In third generation (3G) services along with these characteristics, the core benefits also include easiness in handset settings for mobile internet facility and speed of data access.

The product is lifted to the augmented level with suitable customer support and customer care activities and the maintenance of high level of quality of service. The customer support activities related to the mobile telecom services are: easiness to get a new mobile connection - the SIM (Subscriber Identity Module) card with friendly processes and procedures, availability of mobile service recharge facility or recharge cards at convenient locations (for prepaid customers), helpful assistance from retailers, and customer convenient bill payment facilities (for post-paid customers). The customer care activities are: easiness in activation of additional services, easiness in deactivation of services availed as and when required, easiness to access customer care helpline, easiness to get the right customer care person on the phone to get the required support or information, and the ability to solve problems at customer care.

The quality of service and brand value of telecom service providers are also reflected in product related strategies. The five distinct dimensions of quality of

service suggested by Parasuraman A. et al. (1988)[4] are *tangibility, reliability, responsiveness, assurance* and *empathy*. The elements of *tangibility* are physical facilities, equipments, and appearance of personnel. The *reliability* is concerned with ability to perform the promised service dependably and accurately. The *responsiveness* is the willingness to help customers and to provide prompt service. The *assurance* deals with the knowledge and courtesy of employees and their ability to inspire trust and confidence in customers. The *empathy* is concerned with caring and individualized attention the firm provides for its customers. The features, benefits, quality, and the identity of the product are emerged through the brand name. The corporate image of the service provider is reflected in the brand value. According to Philip Kotler (1995)[5], a brand is a name, term, sign, symbol, or design, or a combination of them which is intended to identify the goods or services of one seller or group of sellers, and to differentiate them from those of competitors.

The telecom service providers mainly segmented the customers based on demographic profiles such as age, gender, locality (Urban or Rural), educational levels, employment status and income. The core benefits' requirements are different for different segments, accordingly the companies positioning their products for targeting the specific segments. The post-paid customers are considered as premium category as they are high paying group and very less in numbers (approximately 3% of mobile customer base)[6] as compared to prepaid customers.

2.3 Pricing strategies

The pricing strategy has direct impact on revenue and profit of any organisation. Even though the pricing is simply the exchange value of the product or service, the pricing strategies depend on the objectives of pricing. The objectives of pricing are different for different service providers. The objectives may be to produce fair profit, profiteering, market growth, price leadership or to enhance the

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[4] Parasuraman A., Valarie A. Zeithaml, and Leonard L. Berry. (1998). SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. Journal of Retailing, Volume 64, Number 1, Elsevier Science Publishing Company Inc., pp. 12-40.

[5] Philip Kotler. (1995). Marketing Management – Analysis, Planning, Implementation, and Control, (8th ed.). Prentice Hall of India, New Delhi, p. 444.

[6] The report on Indian Telecom Services Performance Indicators, March 2013. Telecom Regulatory Authority of India, p. 37.

image of the firm to attract more customers or to strategically counter the competitors. In Kerala during mid-2000s, with the presence of multiple telecom operators, the competition in the mobile market stepped up and price wars start. Pricing became the major strategy of all telecom operators. Varieties of tariff plans are introduced by the telecom service providers to attract customers of multiple segments. Special Tariff Vouchers (STV) for voice, data and SMS allows customers to make calls, SMS and access internet comparatively at low-priced rates, sometimes on unlimited manner. When one operator introduces an STV, immediately others launched competitive versions. Xavier M. J. (2007)[7] described copability (copying + ability) as a marketing strategy in a turbulent environment. As the patent rules and intellectual property rights are not applicable in copying a strategy introduced by one telecom service providers by others, copability became a widely utilised strategy among the telecom service providers.

In addition to STVs, top-up recharge cards, electronic recharge facility, credit recharge facility, validity extenders, separate and combo tariff structures for voice, data and SMS were also introduced in the market. Exclusive tariff plans are launched for closed user groups such as friends, lovers, family, official groups, or business groups. Customised special tariff packages for individuals were also offered by certain telecom service providers. In India the customers are enjoying one of the lowest mobile tariffs in the world[8]. This is mainly due to the intense competition in pricing among mobile telecom service providers.

2.4 Distribution (place) strategies

The distribution strategy is to provide effective place convenience for the customers to avail products and services of the service provider. It is related to the distribution pattern, channel management, and retailer network of the telecom service providers. The private sector providers mainly adopted intensive distribution strategy, which involves the use of all possible outlets to distribute the products and services. The public sector provider BSNL in the initial stages mainly resorted to

[7] Xavier M. J. (2007). Strategic Marketing: A guide for developing sustainable competitive advantage. Response Books, New Delhi, p. 12.

[8] Report on Telecom Sector in India: A Decadal Profile. (2012). Telecom Regulatory Authority of India, p. xi.

exclusive distribution strategy, in which the outlets deal exclusively the BSNL products.

2.5 Promotion strategies

The effectiveness of marketing mostly depends on promotion - the integrated marketing communication. There are several ways to promote the products. The telecom companies use a mix of various promotional tools such as: advertisements, sales promotion, direct selling, events, experiences and public relations. Philip Kotler (2009)[9] cited the model for predictive measurements of advertising effectiveness proposed by Robert J. Lavidge and Grey A. Steiner (1961) to explain the hierarchy of effects of advertisements. Referring to this model the suggested advertisements tasks of telecom service providers are: (i) to build awareness about the products and knowledge as regards to the brand (ii) to create liking, preference and faith for the service provider (iii) to act as reminder to stimulate repeat association with the service provider and (iv) to convince customer that the decision to continue with the service provider is a right choice.

The telecom companies use multitude of sales promotion tools. The prominent among them are: promotional phone calls to the customers, price reduction offers, extra talk time offers, SMS package offers, internet package offers, free trial of newly introduced services, free add-on SIM card, facility to make calls even at zero balance on credit basis for prepaid customers, extending continued services even at non-payment of bills due to delay or oversight for post-paid customers, displays and demonstrations at the point of sales, and specialized pricing offers exclusively for individual customers. The sales promotion helps telecom operators to create stronger and quicker buyer responses, including short-run effects such as highlighting product offers and boosting the sagging sales. According to Philip Kotler (2009)[10] sales promotion offer have three distinctive benefits: (i) Communication: They gain attention and may lead the consumer to the product. (ii) Incentive: They incorporate some concession, inducement or contribution that gives

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[9] Philip Kotler, Kevin Lane Keller, Abraham Koshy and Mithileshwar Jha. (2009). Marketing Management-A South Asian Perspective (13th ed.). Pearson Education, New Delhi, pp. 462-463.

[10] *Ibid*., p. 476.

value to the customer and (iii) Invitation: They include distinct invitation to engage in the transaction at sight. The sale promotion techniques and its attractiveness vary from one telecom service provider to another. The consistent attractiveness of the offers creates positive word of mouth about the telecom service provider. The advertisements and sales promotion along with public relations and publicity can be extremely effective for telecom service marketers.

In this computer era, internet is an effective medium for marketing communication. All the telecom service providers have websites, which act a touch point for internet accustomed customers.

2.6 Service related marketing strategies – people, physical evidence and process

The services are primarily intangible, the customers are searching for evidence of service in every interaction they have with the organisation. The three major categories of evidences as experienced by the customers are people, process and physical evidence. These elements are referred to as additional marketing mix for services or additional 3Ps of services marketing.

People: All human elements involved in service delivery or service assurance influence the buyer's perceptions. The customer care personnel, maintenance staff, persons representing the organisation, the customers, and other customers in the service environment play vital roles in services marketing. The private telecom service provider's strategically manage the people element primarily through outsourcing. The customer care and call centre personnel are professionally trained employees provided by external agencies. The telecom service providers extend excellent backend support for the outsourced customer touch points. They utilise the IT capabilities for extending service to these touch points which in turn reflect in the customer service.

Although the private telecom companies seem to avoid direct personal contact with the customers, they have a limited number of experience centres or relationship centres or customer care centres at main towns and cities. These centres are managed by the franchisees. The service provider will dictate the terms to the franchisee with respect to code of conduct, dress code, personal grooming, telephone

etiquettes, expected attitude and behaviour to be shown by the employees engaged by the franchisees while interacting with customers. The franchisee also benefitted from the win-win business relationships. The franchisees hire employees with extreme dealing skills and impart them sufficient knowledge along with adequate IT support to deal with customers. It is observed that the employees at customer support centres are youngsters especially females.

The BSNL manages their customer contact points largely through their own resources and employees. The general observation shows that the employees at customer touch points lack soft skills and knowledge to deal with customers as compared with the private sector providers. The IT support is inadequate to deal with customers. The workforce is also aged. The maintenance personnel of BSNL in landlines are highly unprofessional in appearance, skill sets, knowledge level and even at attitude and behaviour towards customers. The government employee attitude is predominant in BSNL.

Physical evidence: The physical evidence is the environment in which the service is delivered and where the firm and customer interact, and any tangible components that facilitate performance or communication of the service. The private telecom service providers are keen in proving their presence through employee dresses, uniforms, brochures, tariff booklets, business cards, and glow sign boards etc. The ever-changing tariff is immediately updated and made available to retailers and customers. Their physical presence is evident even in the remote rural villages of Kerala. The BSNL mainly rely upon their customer care centre and telephone exchange network for proving the physical presence. As part of creating the tangibility, the telecom service providers seem to offer newly introduced value added services to customers for free trail for a limited period. This is followed by various sales promotion techniques to enthuse the customers to become the subscribers of the services. The advertisements, hoardings, events, and public relations also help building the physical evidence.

Process: The actual procedures, mechanisms, and flow of activities by which the service is delivered are termed as process. The private sector providers widely utilise the retailer network to distribute their products and services. The process and

procedures to avail mobile connections and associated services from private sector providers are very simple as compared to BSNL. Their retailers are motivated by trade schemes, incentives and proper back end support to push their products. Even though the BSNL procedures and process have been improved from the highly bureaucratic DoT era, it is still below the competitors' benchmarks. The single window concept is not yet a reality in BSNL especially with respect to landline segment.

2.7 Review of marketing strategies practiced by the telecom service providers in Kerala

The market pioneer strategy was adopted by the service providers Escotel followed by BPL when they introduced mobile telecom services in Kerala in the year 1996. They maintained the position as product innovators as the services were new-to-the-world products. Orville C. Walker Jr. et al. (2008)[11] suggest three important strategic marketing programs for pioneers. They are mass-market penetration, niche penetration and skimming. The skimming was the strategy adopted by early mobile service providers in Kerala.

The ego bolstering needs of upper -upper segment of Kerala were stimulated by these telecom companies to market the services. The mobile network coverage was available only in main cities. At that period the mobile phone was a status symbol rather than a utility service. The outgoing call charges were more than ₹ 32/- per minute and incoming call charges were ₹ 16/- per minute. Gradually they reduced the tariff. During 1998-99 periods the effective call charges decreased to ₹ 16/- per minute. The mobile call charges further reduced to ₹ 4/minute by March 2002[12].

The high end positioning of mobile services were continued till the entry of the service providers Airtel and BSNL in the mobile telecom market of Kerala during the later part of the year 2002. The market expansion was the growth market strategy adopted by BSNL. They differentiated the product offering targeted to the

[11] Orville C. Walker Jr. and John W. Mullins. (2008). Marketing Strategy: A Decision - Focussed Approach, (7th ed.). McGraw-Hill International Irwin, New York, pp. 177-202.

[12] Study Paper on Indicators for Telecom Growth. (2005). Telecom Regulatory Authority of India. Study paper No. 2/2005.

needs of various potential segments. The BSNL at their introductory stage itself differentiated their mobile telecom service with maximum geographical coverage and connectivity. In order to accelerate the market expansion they also practiced penetration pricing strategy. The BSNL introduced tariff plans with outgoing call charges as low as ₹ 1/- per minute. The BSNL was the first mobile telecom operator in Kerala introduced tariff plans with incoming calls free of charge. The BSNL became the market leader in Kerala within three years. Subsequently all mobile operators adopted market follower strategy and mobile incoming calls became absolutely free. The competition in the market gradually enhanced. The minimum effective local call charges in cellular mobile services declined to 77 paise per minute by September 2003[13]. In the year 2004, Escotel[14] was taken over by the service provider Idea. The market was further expanded with the entry of the service providers Reliance and Tata tele services. The core product benefit of mobile telecom service, the geographical network coverage was substantially improved in Kerala due to the share-growth strategies of the followers. The focus of the telecom service providers gradually shifted from the upper and the middle class to the common people of Kerala.

In the growth stage of mobile telecom service in Kerala, the service providers widely utilised the pull strategy to promote their product and services. In a pull strategy the manufacturer uses advertising, promotion, and other forms of communication to persuade consumers to demand the product from intermediaries, inducing the intermediaries to order it[15]. The advertisement with celebrity endorsement is a strategy followed by many companies to pull the customers. The choice of the celebrity is critical. The celebrity should have high recognition, high positive affect, and high appropriateness to the product. Celebrities such as Amitabh Bachchan, Sachin Tendulkar, Shah Rukh Khan, Aishwarya Rai and Sourav Ganguly

[13] Press Release No. 49/1/ 2004, dated 6th January 2004, Telecom Regulatory Authority of India, New Delhi. www.trai.gov.in

[14] http://en.wikipedia.org/wiki/Idea_Cellular, retrieved on 04.07.2013.

[15] Philip Kotler, Kevin Lane Keller, Abraham Koshy and Mithileshwar Jha. (2009). Marketing Management-A South Asian Perspective, (13th ed.). Pearson Education, New Delhi, p. 402.

are big brands themselves[16]. The inclusion of celebrities in advertisements poses certain risks. The celebrity might hold out for a larger fee at contract renewal time or withdraw. And just like movies and records, celebrity campaigns can sometimes be expensive flops. The celebrity might lose popularity or even worse, get caught in a scandal or embarrassing situation[17].

The BPL advertisements were endorsed by the popular Malayalam cine artist Mohanlal. In the year 2006, BPL was taken over by Hutchison Essar and the mobile services were branded as Hutch. The advertisement strategy of Hutch had given a positive edge for the promotion of their products than other telecom service providers. The pug dog advertisement of Hutch with the caption *"Where ever you go our network follows"* was so popular at that time. Even after the takeover of Hutch by Vodafone in the year 2007, the pug dog advertisement continued.

The celebrity endorsement advertisement strategy is also followed by the Idea Cellular with the actor Abhishek Bachchan and Aircel with the cricketer M. S. Dhoni. The Bharti Airtel, which used several celebrities from Shah Rukh Khan to Kareena Kapoor to Sachin Tendulkar to A. R. Rahman earlier, now features unknown faces for its *'Jo tera hai, wo mera hai...'* series. Tata Docomo had endorsement deal with the actor Ranbir Kapoor. The Tata Indicom and the Reliance promoted their services with Kajol and Hrithik Roshan respectively. The BSNL formerly used celebrities Preity Zinta, Deepika Padukone and Abhinav Bhindra in their advertisements. The celebrity endorsement strategy was not adopted by the service provider Vodafone.

In the growth stage of mobile telecom services industry in Kerala, the telecom service providers were very keen in designing and publishing advertisements in popular media. As part of the advertisement strategy the telecom companies inserted catching captions and ad slogans in their advertisements. The noticeable stuff among them are: Idea: *'An Idea can change your life'*, Airtel: *'Express Yourself'*, BSNL: *'Connecting India Faster'*, and MTS: *'A step ahead'*.

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[16] Philip Kotler, Kevin Lane Keller, Abraham Koshy and Mithileshwar Jha. (2009). Marketing Management-A South Asian Perspective, (13th ed.). Pearson Education, New Delhi, p. 8.

[17] *Ibid.*, p. 469.

Previously Vodafone was using *'Wherever you go Our network follows'* signifying the importance of network coverage the service. Then they used the taglines *'Power to you'* and *'Make the most of Now'* to describe the usefulness of various value added services. To show the customer care effectiveness, Vodafone used another caption *'Happy to Help'*. The lowest ever tariff of telecom services due to hyper competition in the market and the trends of market saturation negatively reflected in the revenue of the service providers. As part of reducing the operational expenditure, recently the telecom companies put restrictions on their ad campaigns. The advertisements became very rare for BSNL as compared to the private sector providers.

The BSNL was the market leader till 2007. In the year 2008, the private sector provider Idea through the frontal attack strategy captured the major market share and became the market leader. In the frontal attack strategy, where the market for a product is relatively homogeneous, with few untapped segments and at least one well-established competitor, a follower wanting to capture an increased market share may have little choice but to tackle a major competitor head-on. Such an approach is most likely to succeed when most existing customers do not have strong brand preferences or loyalties, the target competitors product does not benefit from positive network effects, and the challenger's resources and competencies-particularly in marketing - are greater than the target competitor's. In general, the best way for a challenger to effectively implement a frontal attack is to differentiate its product or associated services in ways that better meet the needs and preferences of many customers in the mass market. If the challenger can support those meaningful product differences with strong promotion or an attractive price that became a sustainable competitive advantage[18]. The Idea implemented frontal attack strategy against BSNL by differentiating its products and services accessible to all segments with attractive pricing, advertisements and sale promotion techniques.

In the year 2009 the service providers Tata Docomo, MTS, Aircel, and Uninor and started mobile telecommunication services in Kerala. By the year 2010 the service provider Videocon also entered in the mobile telecom market of Kerala.

[18] Orville C. Walker Jr. and John W. Mullins. (2008). Marketing Strategy: A Decision - Focussed Approach, (7th ed.). McGraw-Hill International Irwin, New York, pp. 223-224.

The mobile network coverage of these operators was limited only in cities and towns. They primarily adopted flanking and encirclement strategies and sometimes guerrilla attack to compete with market giants such as Idea, BSNL and Vodafone. A flank attack is appropriate when the market can be broken into two or more large segments, when the leader and or other major competitors hold strong position in the primary segment, and when no existing brand fully satisfies the needs of customers in at least one other segment. A challenger may be able to capture a significant share of the total market segment by concentrating primarily on one large untapped segment. This usually involves developing product features or services tailored to the needs and preferences of the targeted customers, together with appropriate promotional and pricing policies to quickly build selective demand. An encirclement strategy involves targeting several smaller untapped or underdeveloped segments in the market simultaneously. The idea is to surround the leader's brand with a variety of offering aimed at several peripheral segments. This strategy makes most sense when the market is fragmented into many different applications segments or geographical regions with somewhat unique needs or tastes. When well- established competitors already cover all major segments of the market and the challenger's resources are relatively limited, flanking, encirclement or all-out frontal attacks may be impossible. In such cases, the challenger may be reduced to making surprise raids against its more established competitors called guerrilla attacks[19]. The newly entered operators concentrated mainly in urban and semi-urban areas. Although their mobile coverage was limited only in cities and towns, they strategically positioned their mobile telecom services as the second option for urban Keralites. They positively differentiated their services in other elements of marketing mix especially in pricing and promotion. Tata Docomo became the most successful among the new entrants with these strategies. The Aircel initiated guerrilla attack with attractive 2G internet economic packages for the segment of students and youth.

The late entrants attack the leading telecom service providers with loss leader pricing strategy and explored the urban markets. In the loss leader pricing an initial low price is charged in the hope of getting more business at subsequently

[19] Orville C. Walker Jr. and John W. Mullins. (2008). Marketing Strategy: A Decision - Focussed Approach, (7th ed.). McGraw-Hill International Irwin, New York, pp. 225-226.

better prices. The risk associated with the initial low price is that, it may become the price for all times to come. They targeted the urban youth with attractive voice and data plans. The availability of affordable dual SIM mobile phones in the market also became great support for their strategy. The low pricing became prevailed among these operators because they are also lacking the core benefit issue of mobile telecom service, the sufficient mobile network coverage. In practice the customers began to primarily utilize these mobile connections in the available coverage areas. These telecom service providers also focused the segment of non-moving urban customers.

In the year 2009 itself, when Tata DoCoMo first introduced pay per second billing, it was an innovative pricing strategy in the extremely competitive Indian telecom market. Immediately all other operators became the followers of this strategy and also started offering pay per second plans. In 2012 TRAI (Telecom Regulatory Authority of India) intervened and ordered that there has to be at least one tariff plan each for both post-paid and pre-paid subscribers with pay per second pulse across all service providers so as to enable the subscribers to compare the tariffs offered by different service providers.

The strategic attacks of new entrants' further gravitate the competition in the market. The market leaders resorted to position defense strategies. The most basic defensive strategy is to continually strengthen a strongly held current position- to build an impregnable fortress capable of repelling attacks by current and or future competitors. This strategy is nearly always the part of a leader's share-maintenance efforts. By shoring up an already strong position, the firm can improve the satisfaction of current customers while increasing the attractiveness of its offering to new customers with needs and characteristics similar to those of earlier adopters[20]. The Idea is the most successful mobile telecom service provider in Kerala with their position defense strategy. The Idea consistently maintains their market leadership in mobile telecom services for the last six years. The service providers BSNL and Vodafone are also successful to an extent in position defense, and occupy the second and third positions respectively in the market.

[20] Orville C .Walker Jr. and John W .Mullins. (2008). Marketing Strategy: A Decision - Focussed Approach, (7th ed.). McGraw-Hill International Irwin, New York, pp. 215-216.

The prominent private sector telecom service providers established distinctive channel management systems to deliver their products and services. The Airtel distribution strategy was proclaimed as *match box strategy* - where ever match boxes are available, Airtel mobile telecom products such as SIM (Subscriber Identity Module) cards and recharge coupons are also invariably available. This strategy was also adopted by almost all prominent private players. The private telecom service providers ensure maximum reach - the availability of their products at almost all the multi brand retail outlets of Kerala. Thus the private sector providers mainly adopted this intensive distribution strategy[21], which involves the use of all possible outlets to distribute their products and services.

At the same time every private service provider attempts to enhance the extraction - the percentage share of sales of their products at each retailer outlet through push strategy. A push strategy uses the manufacturer's sales force, trade promotion money, or other means to induce the intermediaries to carry, promote, and sell the product to end users[22]. This leads to launch of very attractive trade schemes for the retailer network. The push of the products of a particular service provider certainly depends on the attractiveness of trade schemes and backend support extended to the retailer network. This strategy makes prominent private service providers' products available at every nook and corner of Kerala.

In the earlier stages the public sector provider BSNL adopted the exclusive distribution strategy to distribute their products and services. The exclusive distribution strategy means selling a company's products/brands in a market through the outlets that deals exclusively in company's products and do not sell any competing brands. These are company's authorised showrooms or outlets and the company has direct control over price, promotion and inventory etc. of the product[23]. In this strategy BSNL primarily utilised its own customer service centres, telephones exchanges, and exclusive franchisees for the distribution of products and

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[21] Nag A. (2008). Strategic Marketing, (2nd ed.). Macmillan Publishers India Ltd., New Delhi, pp. 143-144.

[22] Philip Kotler, Kevin Lane Keller, Abraham Koshy and Mithileshwar Jha. (2009). Marketing Management-A South Asian Perspective, (13th ed.). Pearson Education, New Delhi, p. 402.

[23] Nag A. (2008). Strategic Marketing, (2nd ed.). Macmillan Publishers India Ltd., New Delhi, pp. 143-144.

services till the year 2008. The government legacy and bureaucratic nature of BSNL customer care centres were incapable of competing with distribution network of major private sector service providers. Even though BSNL appointed franchisees for channel management, the same were not effective as main private players'. Eventually BSNL realised the situation and tried to build the retail networks for intensive distribution. This attempt is being continued.

The landline telecom industry in Kerala has been declining since the year 2007. As the part of profitable survivor strategy, the landline service providers are trying value addition of landline services by extending broadband internet facility to the landline customers. The service providers consider the landline broadband services as an essential factor for the sustenance of landline industry. The landline tariff normally consists of two components - the rental and the usage. The private landline service provider the Reliance has provided the tariff options without rental component and offered it to the customers with usage charges only, to get a competitive advantage. Even though BSNL introduced prepaid tariff plans in landline services it was not clicked. The discount pricing was the subsequent pricing strategy adopted by BSNL in landline segment. They introduced landline tariff plans with discounted annual rental basis. This helped BSNL to ensure a committed period of at least one year from plan opted landline customers. The private sector landline telecom service providers Reliance, Tata and Airtel adopted the market development strategy by exploring the opportunities in corporate segments. They focused on urban business customers such as upcoming textile showrooms, residential flats and other business establishments.

The prominent landline service provider BSNL experimented product bundling of landline services with their mobile telecom services. In this product bundling strategy, BSNL issued mobile connections free of cost to all of their landline customers with mobile numbers matched with the landline numbers. They promote the program labelled as *'Home SIM'* campaign. The customers are offered with unlimited free calls between their landline and mobile connections. This became a boost up for the landlines connections and helped them to enhance the mobile customer base. The mobile telecom service providers also practiced the

bundled offer of mobile connection and handset. In order to attract the lower-lower segment, the MTS offered handset with mobile connection as low as ₹ 600/-

The events and experiences put forth to the customers can be used for enhancing the brand value and boosting the sales. The public sector service provider BSNL repeatedly conducts the events called BSNL *melas.* Special event pricing is the strategy adopted by BSNL in these events. In the special event pricing strategy sellers will establish special prices in certain occasions to draw in more customers[24]. These events help tangibilizing the service offerings and provide the physical evidence for the customers.

The physical representation in services has a good promotional appeal to customers. The physical evidence strategy of the service providers Idea and Vodafone were proved through two well-liked Malayalam television programmes, '*The Idea Star Singer'* and *'The Vodafone Comedy Stars'*.

The mobile telecom service provider Idea has been sponsoring the *Idea Star Singer* programme in the television channel Asianet since 2006. It is a popular Malayalam music reality-television competition, broadcast regularly from Monday to Friday. The program aims to discover the young promising music talents in Kerala and the winner is determined by the viewers and panel of judges based on the contestant's skill in singing. This television programme has enhanced the brand image of Idea among the domestic viewers.

The *Vodafone Comedy Stars* was a popular Malayalam comedy reality-television competition, broadcast regularly by the channel Asianet and was sponsored by Vodafone. The Vodafone got betterment by this programme in their brand building among the viewers.

Jean-Jacques Lambin et al. (2007) cited multifactor portfolio grid suggested by Abell and Hammond (1979) to describe various choices of strategies based on market attractiveness and brand strength of a firm[25]. Divestment is a strategy aimed

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[24] Philip Kotler, Kevin Lane Keller, Abraham Koshy and Mithileshwar Jha. (2009). Marketing Management-A South Asian Perspective, (13th ed.). Pearson Education, New Delhi, p.14.

[25] Jean-Jacques Lambin, Ruben Chumpitaz and Isabelle Schuiling. (2007). Market-Driven Management: Strategic and Operational Marketing, (2nd ed.). Palgrave Macmillan, New York, pp. 231-232.

at leaving markets or segments of low attractiveness or segments where the firm does not have the capacity to acquire or sustain a competitive advantage. The private sector service providers Videocon and Uninor have already implemented the divestment strategy and withdrew from the telecom services market of Kerala and the service provider Aircel is at the verge of this strategy implementation.

The primary focus of marketing strategies of telecom service providers is to seek competitive advantage and synergy through a well-integrated program of services marketing mix elements (the 7 Ps of product, price, place, promotion, people, physical evidence and process) tailored to the needs and wants of potential customers in that target market. The differentiation is the powerful theme in developing marketing strategies. As Michel Porter points out, “A company can outperform its rivals only if it can establish a difference that it can preserve. It must deliver greater value to customers or create comparable value at lower cost or both”. The differentiation protects the firm from the five competitive forces - rivalry among existing firms, threat of new entrants, bargaining power of suppliers, bargaining power of buyers and threat of substitute products - proposed by Michel Porter. Most of the time differentiation is why people buy. The differences may be physical or perceptual. The differentiation can take many forms: product, customer support services, quality of service, brand image, pricing, promotions, retailer networks and so on. The telecom service providers tested many marketing strategies based on marketing mix elements and tried to differentiate the services from the competitors.

From the foregoing discussions, it is clear that the different strategies adopted by both BSNL and private sector service providers have different dimensions of impact in their marketing process. In the following chapter the analysis and interpretations of marketing strategies of BSNL and private sector telecommunication service providers in Kerala are presented.

CHAPTER - III

ANALYSIS OF MARKETING STRATEGIES OF BSNL AND PRIVATE SECTOR TELECOM SERVICE PROVIDERS IN KERALA

CHAPTER – III

ANALYSIS OF MARKETING STRATEGIES OF BSNL AND PRIVATE SECTOR TELECOM SERVICE PROVIDERS IN KERALA

3.1 Introduction

This chapter deals with the analysis of primary data collected to study the marketing strategies of public sector telecommunication service provider BSNL in comparison with private sector telecommunication service providers in Kerala. The Statistical Package for Social Sciences (SPSS 16.0) was used for the data analysis.

The primary data collection for the study was conducted for a six months period from July 2012 to December 2012. During that period, there were ten mobile telecom service providers in Kerala specifically: Idea, BSNL, Vodafone, Airtel, Reliance, Tata, Tata Docomo, MTS, Aircel and Uninor. Among the various mobile telecom service providers in Kerala, BSNL (Bharat Sanchar Nigam Limited) is the one and only telecom operator in public sector under the ownership of Government of India. The other telecom service providers in Kerala are private sector organisations. The mobile subscriber base in Kerala as on March 2013 is 306.89 lakhs. More than 70% of mobile telecom market share in Kerala is vested with three telecom operators namely Idea (25.81 %), BSNL (25.17%) and Vodafone (20.21%). Even though Airtel is in fourth place in Kerala with a market share of 11.41%, they are the top among telecom mobile service providers in India in terms of market share[1]. Hence BSNL along with these three major telecom service providers are primarily considered for the data analysis pertaining to the comparative study of marketing strategies. However the services marketing aspects of other mobile telecom service providers and their marketing strategies relevant to the context are also included in the study. In the data analysis of marketing of 3G mobile telecom services, the service provider Tata Docomo is also included in the study, taking into account its' a vital role in 3G segment. Analysis of services marketing aspects of landline and landline broadband internet services are the part of the study.

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[1] Press releases on subscriber data, March 2013. Telecom Regulatory Authority of India. www.trai.gov.in

The data analysis pertaining to the study is presented in eight sections.

1. The descriptive statistics of the study sample.
2. Analysis of product differentiation strategies of BSNL and private sector mobile telecom service providers in Kerala.
3. Analysis of pricing strategies of BSNL and private sector mobile telecom service providers in Kerala.
4. Analysis of promotion strategies of BSNL and private sector mobile telecom service providers in Kerala.
5. The effect of service related factors on customer satisfaction and customer loyalty of customers of mobile telecommunication services.
6. Third generation (3G) mobile telecommunication services: Analysis of marketing strategies of BSNL and private sector mobile telecom service providers in Kerala.
7. Analysis of demographic profile of respondents and preference for a particular mobile telecom service provider.
8. Analysis of services marketing aspects of landline and landline broadband internet services.

3.2 The descriptive statistics of the study sample

The mobile telephone customers of Kerala are the population considered for the study. Stratified multistage random sampling technique, coming under the category of probability sampling designs is mainly used for selecting the samples for the primary data collection. In the first stage, the entire population is divided in to three strata, namely urban, semi-urban and rural. The municipal corporations are identified as urban stratum, the municipalities are identified as semi-urban stratum and the panchayat are identified as rural stratum. The sample size of the present study is 1080 comprising of 360 random samples each from each stratum. The distribution of sample respondents by locality and place of residence is given in the table 3.2.1.

Table 3.2.1

Distribution of sample respondents by locality and place of residence

Sl.No.	Locality	Place of residence	Frequency	Percent
1	Urban	Thiruvananthapuram Corporation	120	11.1
2	Urban	Kochi Corporation	120	11.1
3	Urban	Kozhikode Corporation	120	11.1
4	Semi-Urban	Neyyattinkara Municipality	40	3.7
5	Semi-Urban	Punalur Municipality	40	3.7
6	Semi-Urban	Pala Municipality	40	3.7
7	Semi-Urban	Chalakudi Municipality	40	3.7
8	Semi-Urban	Vadakara Municipality	40	3.7
9	Semi-Urban	Malappuram Municipality	40	3.7
10	Semi-Urban	Kalpetta Municipality	40	3.7
11	Semi-Urban	Kannur Municipality	40	3.7
12	Semi-Urban	Kasaragod Municipality	40	3.7
13	Rural	Chenkal Panchayat	20	1.9
14	Rural	Chirayinkeezhu Panchayat	20	1.9
15	Rural	Ambalapuzha South Panchayat	20	1.9
16	Rural	Thrikkunnapuzha Panchayat	20	1.9
17	Rural	Vazhakkulam Panchayat	20	1.9
18	Rural	Choornikkara Panchayat	20	1.9
19	Rural	Mattathur Panchayat	20	1.9
20	Rural	Mundoor Panchayat	20	1.9
21	Rural	Kongad Panchayat	20	1.9
22	Rural	Wandoor Panchayat	20	1.9
23	Rural	Kodur Panchayat	20	1.9
24	Rural	Kadalundi Panchayat	20	1.9
25	Rural	Kakkodi Panchayat	20	1.9
26	Rural	Ambalavayal Panchayat	20	1.9
27	Rural	Thirunelly Panchayat	20	1.9
28	Rural	Panoor Panchayat	20	1.9
29	Rural	Peralassery Panchayat	20	1.9
30	Rural	Udma Panchayat	20	1.9
Total			1080	100.0

Source: Primary Survey.

A sample of 120 customers each from Thiruvananthapuram, Kochi and Kozhikode municipal corporations represents the urban stratum. A sample of 40 customers each from the nine municipalities of Kerala represents the semi- urban stratum. The rural stratum is represented by 20 customers each from eighteen grama - panchayats of Kerala. The municipal corporations of Thiruvananthapuram, Kochi and Kozhikode were selected for sample collection due their high nature of urban characteristics. The nine municipalities and eighteen grama - panchayats were selected through simple random sampling method.

In addition to the locality and place of residence, the demographic variables of sample respondents collected for the study are age group, gender, educational qualifications, employment status and annual family income. The distribution of sample respondents by age group is given in the table 3.2.2. It shows that nearly 47% of the respondents belonging to the age group up to 30 years.

Table 3.2.2

Distribution of sample respondents by age group

Age group (in years)	Frequency	Percent
< 20	93	8.6
20 - 30	416	38.5
30 - 40	278	25.7
40 - 50	207	19.2
50 - 60	63	5.8
> 60	23	2.1
Total	1080	100.0

Source: Primary Survey.

The distribution of sample respondents by gender is given in the table 3.2.3. It shows that male respondents are 63% and female respondents are 37%.

Table 3.2.3

Distribution of sample respondents by gender

Gender	Frequency	Percent
Male	680	63.0
Female	400	37.0
Total	1080	100.0

Source: Primary Survey.

The distribution of sample respondents by educational qualification is given in the table 3.2.4. It can be seen that 60% of sample respondents belonging to high educational profile, possessing the qualification level of graduation and above.

Table 3.2.4

Distribution of sample respondents by educational qualification

Educational qualification	Frequency	Percent
Below 10th standard	120	11.1
10th Standard pass - Below Graduation	316	29.3
Graduation and Above	313	29.0
Professional / Technical Degree	331	30.6
Total	1080	100.0

Source: Primary Survey.

The distribution of sample respondents by employment status is given in the table 3.2.5. The employment status is categorized in eight segments namely Government Service, Private Sector, Business, Professional, Self Employed, Student, Retired and House Wife.

Table 3.2.5

Distribution of sample respondents by employment status

Employment status	Frequency	Percent
Government Service	122	11.3
Private Sector	184	17.0
Business	132	12.2
Professional	106	9.8
Self Employed	188	17.4
Student	229	21.2
Retired	33	3.1
House Wife	86	8.0
Total	1080	100.0

Source: Primary Survey.

The distribution of sample respondents by annual family income is given in the table 3.2.6. It can be seen that 44% of sample respondents belonging to low income group, their annual family income is less than two lakhs.

Table 3.2.6

Distribution of sample respondents by annual family income

Annual family income (in lakhs of Rupees)	Frequency	Percent
≤ 2	480	44.4
2 - 5	436	40.4
5 -10	123	11.4
≥10	41	3.8
Total	1080	100.0

Source: Primary Survey.

The mobile customer base in Kerala as on March 2013 is 306.89 lakhs. The mobile telecom service providers in Kerala and their respective market shares as on March 2013 are: Idea (25.81%), BSNL (25.17%), Vodafone (20.21%), Airtel (11.41%), Reliance (9.58%), Tata (5.92%), MTS (1.56%), and Aircel (0.34%)[2]. Here Tata represents the Tata group including Tata Docomo. The market leader is Idea and the immediate followers are BSNL and Vodafone. In the beginning of the year 2013 Uninor withdrew from the telecom market of Kerala. The distribution of most preferred mobile service providers of the sample respondents is given in the table 3.2.7. It can be seen that the percentage representation of mobile service providers in the primary survey has high correlation with their actual market shares. This ensures the high reliability of the study sample.

[2] Press releases on subscriber data, March 2013. Telecom Regulatory Authority of India. www.trai.gov.in

Table 3.2.7

Distribution of most preferred mobile service providers of sample respondents

Mobile Service Provider	Frequency	Percent	Cumulative percent
Idea	264	24.4	24.4
BSNL	255	23.6	48.1
Vodafone	229	21.2	69.3
Airtel	122	11.3	80.6
Reliance	79	7.3	87.9
Tata	12	1.1	89
Aircel	17	1.6	90.6
MTS	22	2	92.6
Uninor	15	1.4	94
Tata Docomo	65	6	100
Total	1080	100	

Source: Primary Survey.

3.3 Analysis of product differentiation strategies of BSNL and private sector mobile telecom service providers in Kerala

Hypothesis 1

There is significant difference between the product differentiation strategies of BSNL and private sector mobile telecom service providers in Kerala.

Variables considered for the analysis of product differentiation strategies

The variables considered for the analysis of product differentiation strategies of mobile telecom service providers in Kerala are: basic core service benefits, supplementary core service benefits, customer support services related to product availability, customer support services related customer care, the quality of service and the brand value.

The basic core service benefits are measured by the items voice clarity, geographical network coverage, and easiness to get connected to the network. The supplementary core benefits are measured by the items roaming facility and easiness in the activation of internet services. The customer support services related to

product availability comprises of easiness to get new mobile connection, availability of recharge facility at convenient locations, retailer support for the prepaid customers, convenience of payment of post-paid bills, and special care for the post-paid customers. The customer support services related customer care are measured by easiness to activate additional services, easiness to deactivate additional services - if required, easiness to access customer care helpline, easiness to get the right customer care person on the phone and ability to solve problems at customer care touch points. The service quality of mobile phone services is measured by the 22-item SERVQUAL scale. The brand value of mobile service providers is measured based on the concepts of Young and Rubicam's Brand Asset Valuator (BAV).

All items of the variables are measured by Likert Scale with five anchor points, specifically Strongly Agree, Agree, Uncertain, Disagree and Strongly Disagree.

All the variables considered for the analysis of product differentiation strategies of mobile telecom service providers are separately tested with following hypotheses.

3.3.1 Basic core service benefits of mobile telecom services

The variable considered for the analysis is basic core service benefits of mobile telecom services. The items used to measure the variable basic core service benefits are: 'The mobile connection provides excellent voice clarity', 'The mobile connection provides excellent geographical network coverage', and 'It is very easy to get connected to the network'.

Hypothesis 1.1

The delivery of basic core service benefits specifically voice clarity, geographical network coverage, and easiness to get connected to the network significantly differ between BSNL and private sector mobile telecom service providers in Kerala.

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of variables 'Excellent voice clarity', 'Excellent geographical network coverage', and 'Very easy to get connected to the network (Easy to make or receive calls)' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variables 'Excellent voice clarity', 'Excellent geographical network coverage', and 'Very easy to get connected to the network (Easy to make or receive calls)' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that the variances of the groups have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the Hypothesis 1.1. The Mann-Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variables 'Excellent voice clarity', 'Excellent geographical network coverage', and 'Very easy to get connected to the network' of the mobile service providers Idea, BSNL, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 3.3.1.

Table 3.3.1

Mean ranking of core benefits delivered by mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean rank		
		Excellent voice clarity	Excellent geographical network coverage	Very easy to get connected to the network.
Idea	264	417.67	482.37	398.83
BSNL	255	429.43	461.91	460.37
Vodafone	229	433.38	399.62	414.35
Airtel	122	490.75	346.22	502.58
Total	870			

The table 3.3.2 shows the test statistic for the Kruskal-Wallis test based on core benefits delivered by the mobile service providers, the associated degrees of freedom and the significance. As the number of mobile service providers considered for analysis is four, the degrees of freedom will be three.

Table 3.3.2

Kruskal-Wallis test statistics based on core benefits delivered by mobile service providers

Details	Excellent voice clarity	Excellent geographical network coverage	Very easy to get connected to the network (easy to make or receive calls)
Chi-Square	10.961	40.325	23.063
Df	3	3	3
Asymp. Sig.	.012	.000	.000
Grouping Variable: Mobile Service Provider			

The table 3.3.3 shows the descriptive statistics of the variables 'Excellent voice clarity', 'Excellent geographical network coverage' and 'Very easy to get connected to the network' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel.

Table 3.3.3

Descriptive statistics of core benefits delivered by mobile service providers

Mobile Service Provider	N	Excellent voice clarity*		Excellent geographical network coverage*		Very easy to get connected to the network*	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Idea	264	4.13	.593	4.12	.716	3.64	.838
BSNL	255	4.15	.669	4.00	.937	3.84	.914
Vodafone	229	4.20	.499	3.84	.750	3.69	.855
Airtel	122	4.30	.691	3.56	1.013	4.01	.886
Total	870	4.18	.610	3.93	.858	3.76	.880

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree = 4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Kruskal-Wallis test statistics shown in table 3.3.2 indicates that the significance value is 0.012 for the variable 'Excellent voice clarity', 0.00 for the variable 'Excellent geographical network coverage' and 0.00 for the variable 'Very easy to get connected to the network'. These values are less than 0.05. Therefore, it can be concluded that the delivery of basic core service benefits specifically voice clarity, geographical network coverage, and easiness to get connected to the network significantly differ between BSNL and private sector telecom service providers in Kerala. The value of mean ranking based on Kruskal-Wallis test given in table 3.3.1 indicates that the mobile service provider Airtel has significantly higher levels of values in respect of the variables 'Excellent voice clarity' and 'Very easy to get connected to the network' than that of the other mobile service providers. In respect of the value of the variable 'Very easy to get connected to the network', the Airtel is followed by the service provider BSNL. The mobile service provider Idea has significantly higher levels in the value of the variable 'Excellent geographical network coverage', than the other mobile service providers. In respect of the geographical network coverage the Idea is followed by BSNL. The descriptive statistics of the variables given in the table 3.3.3 also agrees to these findings.

Basic core service benefits of mobile telecom services: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results shows that the delivery of basic core service benefits specifically voice clarity, geographical network coverage, and easiness to get connected to the network significantly differ between BSNL and private sector telecom service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test has done for post hoc procedures for the Kruskal-Wallis test. As the study is focused on the comparative study of marketing strategies of private sector telecom service providers and BSNL, a concise set of comparison would be, to compare each private sector mobile service provider against BSNL. The post hoc procedures for the comparative study are:

(1) Post hoc test 1: The Idea compared to the BSNL

(2) Post hoc test 2: The Vodafone compared to the BSNL

(3) Post hoc test 3: The Airtel compared to the BSNL

As three Mann-Whitney U tests are suggested for the post hoc analysis, in order to reduce the Type I error, Bonferroni correction[3] is applied and the critical value of significance is computed as 0.0167.

1. The Idea Compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Excellent voice clarity', 'Excellent geographical network coverage', and 'Very easy to get connected to the network' of the mobile service providers Idea and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.4.

Table 3.3.4
Mean ranking of core benefits delivered by Idea and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank		
		Excellent voice clarity	Excellent geographical network coverage	Very easy to get connected to the network.
Idea	264	256.67	264.94	241.96
BSNL	255	263.45	254.89	278.68
Total	519			

The table 3.3.5 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Excellent voice clarity', 'Excellent geographical network coverage', and 'Very easy to get connected to the network' pertaining to the mobile service providers Idea and BSNL.

[3] Andy Field. (2009). Discovering Statistics Using SPSS, (3rd ed.). Sage Publications India Pvt. Ltd., New Delhi, p. 565.

Table 3.3.5

Mann - Whitney U test statistics based on core benefits delivered by Idea and BSNL

Details	Excellent voice clarity	Excellent geographical network coverage	Very easy to get connected to the network (easy to make or receive calls)
Mann-Whitney U	32781.000	32357.000	28897.500
Wilcoxon W	67761.000	64997.000	63877.500
Z	-.630	-.849	-3.143
Asymp. Sig. (2-tailed)	.529	.396	.002
Grouping Variable: Mobile Service Provider			

The summary of Mann – Whitney test statistics shown in table 3.3.5 indicates that the observed significance values of the variables 'Excellent voice clarity', and 'Excellent geographical network coverage' are greater than 0.0167, these variables do not significantly differ between the mobile service providers Idea and BSNL. But the observed significance values of the variable 'Very easy to get connected to the network' is less than 0.0167, it significantly differs between the mobile service providers Idea and BSNL. The value of mean ranking based on Mann-Whitney U test given in table 3.3.4 indicates that the mobile service provider BSNL has significantly higher levels in the value of the variable 'Very easy to get connected to the network' than Idea. So it can be concluded that BSNL is positively differentiated the core benefit characteristics 'Very easy to get connected to the network' from the mobile service provider Idea.

2. The Vodafone compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Excellent voice clarity', 'Excellent geographical network coverage', and 'Very easy to get connected to the network' of the mobile service providers Vodafone and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.6.

Table 3.3.6

Mean ranking of core benefits delivered by Vodafone and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank		
		Excellent voice clarity	Excellent geographical network coverage	Very easy to get connected to the network.
Vodafone	229	243.75	224.31	229.00
BSNL	255	241.38	258.84	254.62
Total	484			

The table 3.3.7 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Excellent voice clarity', 'Excellent geographical network coverage', and 'Very easy to get connected to the network' pertaining to the mobile service providers Vodafone and BSNL.

Table 3.3.7

Mann- Whitney U test statistics based on core benefits delivered by Vodafone and BSNL

Details	Excellent voice clarity	Excellent geographical network coverage	Very easy to get connected to the network.
Mann-Whitney U	28912.000	25031.500	26106.500
Wilcoxon W	61552.000	51366.500	52441.500
Z	-.227	-3.048	-2.256
Asymp. Sig. (2-tailed)	.820	.002	.024
Grouping Variable: Mobile Service Provider			

The summary of Mann – Whitney test statistics shown in table 3.3.7 indicates that the observed significance values of the variables 'Excellent voice clarity', and 'Very easy to get connected to the network' are greater than 0.0167, these variables do not significantly differ between the mobile service providers Vodafone and BSNL. But the observed significance values of the variable 'Excellent geographical network coverage' is less than 0.0167, it significantly differs between

the mobile service providers Vodafone and BSNL. The value of mean ranking based on Mann-Whitney U test given in table 3.3.6 indicates that the mobile service provider BSNL has significantly higher levels in the value of the variable 'Excellent geographical network coverage' than Vodafone. So it can be concluded that BSNL is positively differentiated the core benefit characteristics 'Excellent geographical network coverage' from the mobile service provider Vodafone.

3. The Airtel compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Excellent voice clarity', 'Excellent geographical network coverage', and 'Very easy to get connected to the network' of the mobile service providers Airtel and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.8.

Table 3.3.8

Mean ranking of core benefits delivered by Airtel and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank		
		Excellent voice clarity	Excellent geographical network coverage	Very easy to get connected to the network.
BSNL	255	180.60	204.18	183.07
Airtel	122	206.56	157.26	201.40
Total	377			

The table 3.3.9 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Excellent voice clarity', 'Excellent geographical network coverage', and 'Very easy to get connected to the network' pertaining to the mobile service providers Airtel and BSNL.

Table 3.3.9

Mann- Whitney U test statistics based on core benefits delivered by Airtel and BSNL

Details	Excellent voice clarity	Excellent geographical network coverage	Very easy to get connected to the network
Mann-Whitney U	13412.500	11683.000	14042.500
Wilcoxon W	46052.500	19186.000	46682.500
Z	-2.540	-4.207	-1.680
Asymp. Sig. (2-tailed)	.011	.000	.093
Grouping Variable: Mobile Service Provider			

The summary of Mann – Whitney test statistics shown in table 3.3.9 indicates that the observed significance values of the variable 'Very easy to get connected to the network' are greater than 0.0167, it does not significantly differ between the mobile service providers Airtel and BSNL. But the observed significance values of the variables 'Excellent geographical network coverage' and 'Excellent voice clarity' are less than 0.0167, these variables significantly differ between the mobile service providers Airtel and BSNL. The value of mean ranking based on Mann-Whitney U test given in table 3.3.8 indicates that the mobile service provider BSNL has significantly higher levels in the value of the variable 'Excellent geographical network coverage' than Airtel. So it can be concluded that BSNL is positively differentiated the core benefit characteristics 'Excellent geographical network coverage' from the mobile service provider Airtel. The value of mean ranking based on Mann-Whitney U test also indicates that the mobile service provider Airtel has significantly higher levels in the value of the variable 'Excellent voice clarity' than BSNL. So it can be concluded that Airtel is positively differentiated the core benefit characteristics 'Excellent voice clarity' from the mobile service provider BSNL.

3.3.2 Supplementary core benefits of mobile telecom services

The variable considered for the analysis is supplementary core benefits of mobile telecom services. The items used to measure the variable supplementary core benefits are: 'The roaming facility is excellent' and 'It is very easy to activate internet services'.

Hypothesis 1.2

The delivery of supplementary core benefits specifically roaming facility and easiness to activate internet services significantly differ between BSNL and Private sector mobile telecom service providers in Kerala**.**

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of variables 'Excellent roaming facility' and 'Very easy to activate internet services' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variables 'Excellent roaming facility' and 'Very easy to activate internet services' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that the variances of the groups have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the Hypothesis 1.2. The Mann-Whitney U test is used for the non-parametric post hoc procedures

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variables 'Excellent roaming facility' and 'Very easy to activate internet services' of the mobile service providers Idea, BSNL, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 3.3.10.

Table 3.3.10

Mean ranking of supplementary core benefits delivered by mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean rank	
		Excellent roaming facility	Very easy to activate internet services
Idea	264	396.94	432.59
BSNL	255	514.22	412.45
Vodafone	229	392.08	406.86
Airtel	122	435.91	543.73
Total	870		

The table 3.3.11 shows the test statistic for the Kruskal-Wallis test based on supplementary core benefits delivered by the mobile service providers, the associated degrees of freedom and the significance. As the number of mobile service providers considered for analysis is four, the degrees of freedom will be three.

Table 3.3.11

Kruskal-Wallis test statistics based on supplementary core benefits delivered by mobile service providers

Details	Excellent roaming facility	Very easy to activate internet services
Chi-Square	44.231	32.808
df	3	3
Asymp. Sig.	.000	.000
Grouping Variable: Mobile Service Provider		

The table 3.3.12 shows the descriptive statistics of the variables ‘Excellent roaming facility’ and ‘Very easy to activate internet services’ pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel.

Table 3.3.12

Descriptive statistics of supplementary core benefits delivered by mobile service providers

Mobile Service Provider	N	Excellent roaming facility *		Very easy to activate internet services *	
		Mean	Std. Dev.	Mean	Std. Dev.
Idea	264	3.39	.815	3.50	.719
BSNL	255	3.83	.800	3.43	.805
Vodafone	229	3.40	.659	3.41	.654
Airtel	122	3.52	.845	3.89	.902
Total	870	3.54	.799	3.51	.772

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Kruskal-Wallis test statistics shown in table 3.3.11 indicates that the significance value is 0.000 for the variables 'Excellent roaming facility', and 'Very easy to activate internet services'. These values are less than 0.05. Therefore, it can be concluded that the delivery of supplementary core benefits specifically roaming facility and easiness to activate internet services significantly differ between BSNL and private sector telecom service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 3.3.10 indicates that the mobile service provider BSNL has significantly higher levels in the value of the variable 'Excellent roaming facility' than the other mobile service providers. The descriptive statistics of the variable 'Excellent roaming facility' given in the table 3.3.12 also indicate comparatively high value of mean for BSNL than the other mobile service providers.

The value of mean ranking based on Kruskal-Wallis test also indicates that the mobile service provider Airtel has significantly higher levels in the value of the variable 'Very easy to activate internet services' than the other mobile service providers. The descriptive statistics of the variable 'Very easy to activate internet services' given in the table 3.3.12 also agrees to this finding.

Supplementary core benefits of mobile telecom services: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results shows that the delivery of supplementary core benefits specifically roaming facility and easiness to activate internet services significantly differ between BSNL and private sector telecom service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test has done for post hoc procedures for the Kruskal-Wallis test. As the study is focused on the comparative study of marketing strategies of private sector telecom service providers and BSNL, a concise set of comparison would be, to compare each private sector mobile service provider against BSNL. The post hoc procedures for the comparative study are:

(1) Post hoc test 1: The Idea compared to the BSNL
(2) Post hoc test 2: The Vodafone compared to the BSNL
(3) Post hoc test 3: The Airtel compared to the BSNL

As three Mann-Whitney U tests are suggested in the post hoc analysis, in order to reduce the Type I error, Bonferroni correction[4] is applied and the critical value of significance is computed as 0.0167.

1. The Idea compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Excellent roaming facility' and 'Very easy to activate internet services' of the mobile service providers Idea and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.13.

[4] Andy Field. (2009). Discovering Statistics Using SPSS, (3rd ed.). Sage Publications India Pvt. Ltd., New Delhi, p. 565.

Table 3.3.13

Mean ranking of supplementary core benefits delivered by Idea and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank	
		Excellent roaming facility	Very easy to activate internet services
Idea	264	226.08	266.09
BSNL	255	295.11	253.70
Total	519		

The table 3.3.14 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Excellent roaming facility' and 'Very easy to activate internet services' pertaining to the mobile service providers Idea and BSNL.

Table 3.3.14

Mann - Whitney U test statistics based on supplementary core benefits delivered by Idea and BSNL

Details	Excellent roaming facility	Very easy to activate internet services
Mann-Whitney U	24706.000	32053.000
Wilcoxon W	59686.000	64693.000
Z	-5.604	-1.028
Asymp. Sig. (2-tailed)	.000	.304
Grouping Variable: Mobile Service Provider		

The summary of Mann – Whitney test statistics shown in table 3.3.14 indicates that the observed significance values of the variable 'Very easy to activate internet services' is greater than 0.0167, this variable does not significantly differ between the mobile service providers Idea and BSNL. But the observed significance values of the variable 'Excellent roaming facility' is less than 0.0167, it significantly differs between the mobile service providers Idea and BSNL. The value of mean ranking based on Mann-Whitney U test given in table 3.3.13 also indicates that the mobile service provider BSNL has significantly higher levels in the value of the variable 'Excellent roaming facility' than Idea. So it can be concluded that BSNL is

positively differentiated the supplementary core benefit characteristics 'Excellent roaming facility' from the mobile service provider Idea.

2. The Vodafone compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Excellent roaming facility' and 'Very easy to activate internet services' of the mobile service providers Vodafone and BSNL has been computed with Mann-Whitney **U** test. The test results are given in the table 3.3.15.

Table 3.3.15

Mean ranking of supplementary core benefits delivered by Vodafone and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank	
		Excellent roaming facility	Very easy to activate internet services
Vodafone	229	206.07	241.40
BSNL	255	275.22	243.49
Total	484		

The table 3.3.16 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Excellent roaming facility' and 'Very easy to activate internet services' pertaining to the mobile service providers Vodafone and BSNL.

Table 3.3.16

Mann- Whitney U test statistics based on supplementary core benefits delivered by Vodafone and BSNL

Details	Excellent roaming facility	Very easy to activate internet services
Mann-Whitney U	20855.000	28945.500
Wilcoxon W	47190.000	55280.500
Z	-5.865	-.181
Asymp. Sig. (2-tailed)	.000	.856
Grouping Variable: Mobile Service Provider		

The summary of Mann – Whitney test statistics shown in table 3.3.16 indicates that the observed significance values of the variable 'Very easy to activate internet services' is greater than 0.0167, this variable does not significantly differ between the mobile service providers Vodafone and BSNL. But the observed significance values of the variable 'Excellent roaming facility' is less than 0.0167, it significantly differs between the mobile service providers Vodafone and BSNL. The value of mean ranking based on Mann-Whitney U test given in table 3.3.15 indicates that the mobile service provider BSNL has significantly higher levels in the value of the variable 'Excellent roaming facility' than Vodafone. So it can be concluded that BSNL is positively differentiated the supplementary core benefit characteristics 'Excellent roaming facility' from the mobile service provider Vodafone.

3. The Airtel compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Excellent roaming facility' and 'Very easy to activate internet services' of the mobile service providers Airtel and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.17.

Table 3.3.17

Mean ranking of supplementary core benefits delivered by Airtel and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank	
		Excellent roaming facility	Very easy to activate internet services
BSNL	255	199.89	171.27
Airtel	122	166.24	226.07
Total	377		

The table 3.3.18 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Excellent roaming facility' and 'Very easy to activate internet services'pertaining to the mobile service providers Airtel and BSNL.

Table 3.3.18

Mann- Whitney U test statistics based on supplementary core benefits delivered by Airtel and BSNL

Details	Excellent roaming facility	Very easy to activate internet services
Mann-Whitney U	12778.500	11033.000
Wilcoxon W	20281.500	43673.000
Z	-2.994	-4.872
Asymp. Sig. (2-tailed)	.003	.000
Grouping Variable: Mobile Service Provider		

The summary of Mann – Whitney test statistics shown in table 3.3.18 indicates that the observed significance values of the variables 'Excellent roaming facility' and 'Very easy to activate internet services' are less than 0.0167, these variables significantly differ between the mobile service providers Airtel and BSNL. The value of mean ranking based on Mann-Whitney U test given in table 3.3.17 indicates that the mobile service provider BSNL has significantly higher levels in the value of the variable 'Excellent roaming facility' than Airtel. So it can be concluded that BSNL is positively differentiated the supplementary benefit characteristics 'Excellent roaming facility' from the mobile service provider Airtel.

The value of mean ranking also indicates that the mobile service provider Airtel has significantly higher levels in the value of the variable 'Very easy to activate internet services' than BSNL. So it can be concluded that Airtel is positively differentiated the supplementary benefit characteristics 'Very easy to activate internet services' from the mobile service provider BSNL.

3.3.3 Customer support related to product availability of prepaid mobile telecom services

The variable considered for the analysis is the customer support related to product availability of prepaid mobile telecom services. The items used to measure the variable are: 'It is very easy to get a new mobile connection', 'The mobile

service recharge facility / recharge cards are available at convenient locations', and 'The retailers of the service provider extend helpful customer support'.

Hypothesis 1.3

The customer support services specifically easiness to get new mobile connection, availability of recharge facility at convenient locations and retailer support for the prepaid customers significantly differ between BSNL and private sector mobile telecom service providers in Kerala.

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of variables 'Very easy to get new mobile connection', 'Prepaid recharge available at convenient locations' and 'Retailer support' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variables 'Very easy to get new mobile connection', 'Prepaid recharge available at convenient locations' and 'Retailer support' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that the variances of the groups have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the Hypothesis 1.3. The Mann-Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variables 'Very easy to get new mobile connection', 'Prepaid recharge available at convenient locations' and 'Retailer support' of the mobile service providers Idea, BSNL, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 3.3.19.

Table 3.3.19

Mean ranking of customer support (product availability) of prepaid mobile telecom services based on Kruskal-Wallis test

Mobile Service Provider	N	Mean rank		
		Very easy to get new mobile connection	Prepaid recharge available at convenient locations	Retailer support
Idea	264	449.14	406.41	474.78
BSNL	255	215.41	334.33	195.28
Vodafone	229	454.92	405.63	463.02
Airtel	122	470.86	398.79	444.11
Total	870			

The table 3.3.20 shows the test statistic for the Kruskal-Wallis test based on customer support related to the product availability of prepaid services extended by the mobile telecom service providers, the associated degrees of freedom and the significance. As the number of mobile service providers considered for analysis is four, the degrees of freedom will be three.

Table 3.3.20

Kruskal-Wallis test statistics based on customer support (product availability) of prepaid mobile telecom services

Details	Very easy to get new mobile connection	Prepaid recharge available at convenient locations	Retailers extend customer support for prepaid customers
Chi-Square	230.985	21.128	273.238
df	3	3	3
Asymp. Sig.	.000	.000	.000
Grouping Variable: Mobile Service Provider			

The table 3.3.21 shows the descriptive statistics of the variables ‘Very easy to get new mobile connection’, ‘Prepaid recharge available at convenient locations’ and ‘Retailer support’ pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel.

Table 3.3.21

Descriptive statistics of customer support (product availability) of prepaid mobile telecom services

Mobile Service Provider	N	Very easy to get new mobile connection and *		Prepaid recharge available at convenient locations*		Retailer support*	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Idea	264	4.52	.574	4.57	.496	4.35	.656
BSNL	255	3.53	.904	4.26	.820	3.01	.908
Vodafone	229	4.53	.617	4.56	.537	4.29	.741
Airtel	122	4.59	.566	4.50	.678	4.24	.642
Total	870	4.24	.836	4.46	.657	3.92	.963

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Kruskal-Wallis test statistics shown in table 3.3.20 indicates that the significance value is 0.000 for the variables 'Very easy to get new mobile connection', 'Prepaid recharge available at convenient locations' and 'Retailer support'. These values are less than 0.05. Therefore, it can be concluded that the customer support services specifically easiness to get new mobile connection, availability of recharge facility at convenient locations and retailer support for the prepaid customers significantly differ between BSNL and private sector telecom service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 3.3.19 indicates that the private sector telecom service providers have significantly higher levels in the value of the variables 'Very easy to get new mobile connection', 'Prepaid recharge available at convenient locations', and 'Retailer support' than BSNL. The descriptive statistics of the variables given in the table 3.3.21 also agrees to these findings.

Customer support related to product availability of prepaid mobile telecom services: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results shows that the customer support services specifically easiness to get new mobile connection, availability of recharge facility

at convenient locations and retailer support for the prepaid customers significantly differ between BSNL and private sector telecom service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test has done for post hoc procedures for the Kruskal-Wallis test. As the study is focused on the comparative study of marketing strategies of private sector telecom service providers and BSNL, a concise set of comparison would be, to compare each private sector mobile service provider against BSNL. The post hoc procedures for the comparative study are:

(1) Post hoc test 1: The Idea compared to the BSNL
(2) Post hoc test 2: The Vodafone compared to the BSNL
(3) Post hoc test 3: The Airtel compared to the BSNL

As three Mann-Whitney U tests are suggested for the post hoc analysis, in order to reduce the Type I error, Bonferroni correction[5] is applied and the critical value of significance is computed as 0.0167.

1. The Idea compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Very easy to get new mobile connection', 'Prepaid recharge available at convenient locations' and 'Retailer support' of the mobile service providers Idea and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.22.

Table 3.3.22

Mean ranking of customer support (product availability) of prepaid mobile telecom services of Idea and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank		
		Very easy to get new mobile connection	Prepaid recharge available at convenient locations	Retailers extend customer support for prepaid customers
Idea	264	300.86	251.82	313.36
BSNL	255	159.45	208.27	147.00
Total	519			

[5] Andy Field. (2009). Discovering Statistics Using SPSS, (3rd ed.). Sage Publications India Pvt. Ltd., New Delhi, p. 565.

The table 3.3.23 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Very easy to get new mobile connection', 'Prepaid recharge available at convenient locations' and 'Retailer support' pertaining to the mobile service providers Idea and BSNL.

Table 3.3.23

Mann - Whitney U test statistics based on customer support (product availability) of prepaid mobile telecom services of Idea and BSNL

Details	Very easy to get new mobile connection	Prepaid recharge available at convenient locations	Retailer support
Mann-Whitney U	10107.500	21337.500	7246.000
Wilcoxon W	36672.500	47902.500	33811.000
Z	-12.559	-3.977	-14.145
Asymp. Sig. (2-tailed)	.000	.000	.000
Grouping Variable: Mobile Service Provider			

The summary of Mann – Whitney test statistics shown in table 3.3.23 indicates that the observed significance values of the variables 'Very easy to get new mobile connection', 'Prepaid recharge available at convenient locations' and 'Retailer support' are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Idea and BSNL. The value of mean ranking based on Mann-Whitney U test given in table 3.3.22 indicates that the mobile service provider Idea has significantly higher levels of values of the variables 'Very easy to get new mobile connection', 'Prepaid recharge available at convenient locations' and 'Retailer support' than BSNL. So it can be concluded that Idea has positively differentiated the customer support services specifically easiness to get new mobile connection, availability of recharge facility at convenient locations and retailer support for the prepaid customers from the mobile service provider BSNL.

2. The Vodafone compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Very easy to get new mobile connection', 'Prepaid recharge available at convenient locations' and 'Retailer support' of the mobile service providers Vodafone and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.24.

Table 3.3.24

Mean ranking of customer support (product availability) of prepaid mobile telecom services of Vodafone and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank		
		Very easy to get new mobile connection	Prepaid recharge available at convenient locations	Retailer support
Vodafone	229	287.01	236.89	294.66
BSNL	255	153.32	196.90	146.67
Total	484			

The table 3.3.25 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Very easy to get new mobile connection', 'Prepaid recharge available at convenient locations' and 'Retailer support' pertaining to the mobile service providers Vodafone and BSNL.

Table 3.3.25

Mann - Whitney U test statistics based on customer support (product availability) of prepaid mobile telecom services of Vodafone and BSNL

Details	Very easy to get new mobile connection	Prepaid recharge available at convenient locations	Retailer support
Mann-Whitney U	8697.500	18722.500	7169.000
Wilcoxon W	35262.500	45287.500	33734.000
Z	-12.163	-3.744	-12.890
Asymp. Sig. (2-tailed)	.000	.000	.000
Grouping Variable: Mobile Service Provider			

The summary of Mann – Whitney U test statistics shown in table 3.3.25 indicates that the observed significance values of the variables 'Very easy to get new mobile connection', 'Prepaid recharge available at convenient locations' and 'Retailer support' are less than 0.0167. Therefore, these variables significantly differ between the mobile service providers Vodafone and BSNL. The value of mean ranking based on Mann-Whitney U test given in table 3.3.24 indicates that the mobile service provider Vodafone has significantly higher levels of values for all these variables than that of BSNL. So it can be concluded that Vodafone has positively differentiated the customer support services specifically easiness to get new mobile connection, availability of recharge facility at convenient locations and retailer support for the prepaid customers from the mobile service provider BSNL.

3. The Airtel compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Very easy to get new mobile connection', 'Prepaid recharge available at convenient locations' and 'Retailer support' of the mobile service providers Airtel and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.26.

Table 3.3.26

Mean ranking of customer support (product availability) of prepaid mobile telecom services of Airtel and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank		
		Very easy to get new mobile connection	Prepaid recharge available at convenient locations	Retailer support
BSNL	255	133.65	160.16	132.61
Airtel	122	245.00	188.00	247.23
Total	377			

The table 3.3.27 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Very easy to get new mobile connection', 'Prepaid recharge available at convenient locations' and 'Retailer support' pertaining to the mobile service providers Airtel and BSNL.

Table 3.3.27

Mann - Whitney U test statistics based on customer support (product availability) of prepaid mobile telecom services of Airtel and BSNL

Details	Very easy to get new mobile connection	Prepaid recharge available at convenient locations	Retailer support
Mann-Whitney U	4173.500	10271.500	3934.500
Wilcoxon W	30738.500	36836.500	30499.500
Z	-10.744	-2.725	-10.556
Asymp. Sig. (2-tailed)	.000	.006	.000
Grouping Variable: Mobile Service Provider			

The summary of Mann – Whitney test statistics shown in table 3.3.27 indicates that the observed significance values of the variables 'Very easy to get new mobile connection', 'Prepaid recharge available at convenient locations' and 'Retailer support' are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Airtel and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.3.26 indicates that the mobile service provider Airtel has significantly higher levels of values of the variables 'Very easy to get new mobile connection', 'Prepaid recharge available at convenient locations' and 'Retailer support' than BSNL. So it can be concluded that Airtel has positively differentiated the customer support services specifically easiness to get new mobile connection, availability of recharge facility at convenient locations and retailer support for the prepaid customers from the mobile service provider BSNL.

3.3.4 Customer support related to product availability of post-paid mobile telecom services

The variable considered for the analysis is the customer support related to product availability of post-paid mobile telecom services. The items used to measure the variable are: 'It is very easy to get a new mobile connection', 'The payment of bills can be done conveniently' and 'The post-paid customers are getting special care from the service provider'.

Hypothesis 1.4

The customer support services specifically easiness to get new mobile connection, convenience of payment of post-paid bills and special care for the post-paid customers significantly differ between BSNL and private sector mobile telecom service providers in Kerala.

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of variables 'Very easy to get new mobile connection', 'Post-paid bill payment is convenient' and 'Special care for post-paid customers' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variables 'Very easy to get new mobile connection', 'Post-paid bill payment is convenient' and 'Special care for post-paid customers' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that the variances of the groups have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the Hypothesis 1.4. The Mann-Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variables 'Very easy to get new mobile connection', 'Post-paid bill payment is convenient' and 'Special care for post-paid customers' of the mobile service providers Idea, BSNL, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 3.3.28.

Table 3.3.28

Mean ranking of customer support (product availability) of post-paid mobile telecom services based on Kruskal-Wallis test

Mobile Service Provider	N	Mean rank		
		Very easy to get new mobile connection	Post-paid bill payment is convenient	Special care for post-paid customers
Idea	35	56.80	49.00	60.31
BSNL	25	29.04	47.60	18.66
Vodafone	29	61.72	66.86	70.55
Airtel	15	63.73	41.07	55.77
Total	104			

The table 3.3.29 shows the test statistic for the Kruskal-Wallis test based on customer support (product availability) of post-paid services extended by the mobile telecom service providers, the associated degrees of freedom and the significance. As the number of mobile service providers considered for analysis is four, the degrees of freedom will be three.

Table 3.3.29

Kruskal-Wallis test statistics based on customer support (product availability) of post-paid mobile telecom services

Details	Very easy to get new mobile connection	Post-paid bill payment is convenient	Special care for post-paid customers
Chi-Square	26.218	12.619	49.391
df	3	3	3
Asymp. Sig.	.000	.006	.000
Grouping Variable: Mobile Service Provider			

The table 3.3.30 shows the descriptive statistics of the variables ‘Very easy to get new mobile connection’, ‘Post-paid bill payment is convenient’ and ‘Special care for post-paid customers’ pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel.

Table 3.3.30

Descriptive statistics of customer support (product availability) of post-paid mobile telecom services

Mobile Service Provider	N	Very easy to get new mobile connection*		Post-paid bill payment is convenient *		Special care for post-paid customers*	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Idea	35	4.49	.507	4.26	.950	4.09	.818
BSNL	25	3.80	.577	4.28	.843	2.64	.569
Vodafone	29	4.59	.501	4.79	.412	4.38	.820
Airtel	15	4.60	.632	4.27	.458	4.00	.378
Total	104	4.37	.624	4.41	.771	3.81	.976

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Kruskal-Wallis test statistics shown in table 3.3.29 indicates that the significance value is 0.000 for the variables 'Very easy to get new mobile connection' and 'Special care for post-paid customers'. The significance value is 0.006 for the variable 'Post-paid bill payment is convenient'. These values are less than 0.05. Therefore, it can be concluded that the customer support services specifically easiness to get new mobile connection, convenience of payment of post-paid bills and special care for the post-paid customers significantly differ between BSNL and private sector telecom service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 3.3.28 indicates that the private sector telecom service providers have significantly higher levels in the values of the variables 'Very easy to get new mobile connection' and 'Special care for post-paid customers' than BSNL. The descriptive statistics of the variables given in the table 3.3.30 also agrees to these findings. The value of mean ranking also indicates that Vodafone has significantly higher levels in the value of the variable 'Post-paid bill payment is convenient' than the other mobile telecom service providers. The descriptive statistics of the variable also agrees to this finding.

Customer support related to product availability of post-paid mobile telecom services: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results shows that the customer support services specifically easiness to get new mobile connection, convenience of payment of post-paid bills and special care for the post-paid customers significantly differ between BSNL and private sector telecom service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test has done for post hoc procedures for the Kruskal-Wallis test. As the study is focused on the comparative study of marketing strategies of private sector telecom service providers and BSNL, a concise set of comparison would be, to compare each private sector mobile service provider against BSNL. The post hoc procedures for the comparative study are:

(1) Post hoc test 1: The Idea compared to the BSNL

(2) Post hoc test 2: The Vodafone compared to the BSNL

(3) Post hoc test 3: The Airtel compared to the BSNL

As three Mann-Whitney U tests are suggested for the post hoc analysis, in order to reduce the Type I error, Bonferroni correction[6] is applied and the critical value of significance is computed as 0.0167.

1. The Idea compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Very easy to get new mobile connection', 'Post-paid bill payment is convenient' and 'Special care for post-paid customers' of the mobile service providers Idea and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.31.

[6] Andy Field. (2009). Discovering Statistics Using SPSS, (3rd ed.). Sage Publications India Pvt. Ltd., New Delhi, p. 565.

Table 3.3.31

Mean ranking of customer support (product availability) of post-paid mobile telecom services of Idea and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank		
		Very easy to get new mobile connection	Post-paid bill payment is convenient	Special care for post-paid customers
Idea	35	37.36	30.79	40.69
BSNL	25	20.90	30.10	16.24
Total	60			

The table 3.3.32 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Very easy to get new mobile connection', 'Post-paid bill payment is convenient' and 'Special care for post-paid customers' pertaining to the mobile service providers Idea and BSNL.

Table 3.3.32

Mann - Whitney U test statistics based on customer support (product availability) of post-paid mobile telecom services of Idea and BSNL

Details	Very easy to get new mobile connection	Post-paid bill payment is convenient	Special care for post-paid customers
Mann-Whitney U	197.500	427.500	81.000
Wilcoxon W	522.500	752.500	406.000
Z	-4.188	-.166	-5.551
Asymp. Sig. (2-tailed)	.000	.868	.000
Grouping Variable: Mobile Service Provider			

The summary of Mann – Whitney test statistics shown in table 3.3.32 indicates that the observed significance value of the variables 'Very easy to get new mobile connection' and 'Special care for post-paid customers' are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Idea and BSNL. The value of mean ranking based on Mann-Whitney test given in

table 3.3.31 indicates that the mobile service provider Idea has significantly higher levels of values of the variables 'Very easy to get new mobile connection' and 'Special care for post-paid customers' than BSNL. So it can be concluded that Idea has positively differentiated the customer support services specifically 'Easiness to get new mobile connection' and 'Special care for the post-paid customers' from the mobile service provider BSNL. As the observed significance value of the variable 'Post-paid bill payment is convenient' is greater than 0.0167, the variable does not significantly differ between the mobile service providers Idea and BSNL.

2. The Vodafone compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Very easy to get new mobile connection', 'Post-paid bill payment is convenient' and 'Special care for post-paid customers' of the mobile service providers Vodafone and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.33.

Table 3.3.33

Mean ranking of customer support (product availability) of post-paid mobile telecom services of Vodafone and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank		
		Very easy to get new mobile connection	Post-paid bill payment is convenient	Special care for post-paid customers
Vodafone	29	35.36	32.12	38.41
BSNL	25	18.38	22.14	14.84
Total	54			

The table 3.3.34 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Very easy to get new mobile connection', 'Post-paid bill payment is convenient' and 'Special care for post-paid customers' pertaining to the mobile service providers Vodafone and BSNL.

Table 3.3.34

Mann - Whitney U test statistics based on customer support (product availability) of post-paid mobile telecom services of Vodafone and BSNL

Details	Very easy to get new mobile connection	Post-paid bill payment is convenient	Special care for post-paid customers
Mann-Whitney U	134.500	228.500	46.000
Wilcoxon W	459.500	553.500	371.000
Z	-4.497	-2.752	-5.674
Asymp. Sig. (2-tailed)	.000	.006	.000
Grouping Variable: Mobile Service Provider			

The summary of Mann – Whitney test statistics shown in table 3.3.34 indicates that the observed significance values of the variables 'Very easy to get new mobile connection', 'Post-paid bill payment is convenient' and 'Special care for post-paid customers' are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Vodafone and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.3.33 indicates that the mobile service provider Vodafone has significantly higher levels of values for these variables than BSNL. So it can be concluded that Vodafone has positively differentiated the customer support services specifically 'Easiness to get new mobile connection', 'Convenience of payment of post-paid bills' and 'Special care for the post-paid customers' from the mobile service provider BSNL.

3. The Airtel compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Very easy to get new mobile connection', 'Post-paid bill payment is convenient' and 'Special care for post-paid customers' of the mobile service providers Airtel and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.35.

Table 3.3.35

Mean ranking of customer support (product availability) of post-paid mobile telecom services of Airtel and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank		
		Very easy to get new mobile connection	Post-paid bill payment is convenient	Special care for post-paid customers
BSNL	25	15.76	21.36	13.58
Airtel	15	28.40	19.07	32.03
Total	40			

The table 3.3.36 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Very easy to get new mobile connection', 'Post-paid bill payment is convenient' and 'Special care for post-paid customers' pertaining to the mobile service providers Airtel and BSNL.

Table 3.3.36

Mann - Whitney U test statistics based on customer support (product availability) of post-paid mobile telecom services of Airtel and BSNL

Details	Very easy to get new mobile connection	Post-paid bill payment is convenient	Special care for post-paid customers
Mann-Whitney U	69.000	166.000	14.500
Wilcoxon W	394.000	286.000	339.500
Z	-3.730	-.690	-5.125
Asymp. Sig. (2-tailed)	.000	.490	.000
Grouping Variable: Mobile Service Provider			

The summary of Mann – Whitney test statistics shown in table 3.3.36 indicates that the observed significance values of the variables 'Very easy to get new mobile connection' and 'Special care for post-paid customers' are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Airtel and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.3.35 indicates that the mobile service provider Airtel has significantly higher

levels of values of the variables ‘Very easy to get new mobile connection’ and ‘Special care for post-paid customers’ than BSNL. So it can be concluded that Airtel has positively differentiated the customer support services specifically ‘Easiness to get new mobile connection’ and ‘Special care for the post-paid customers’ from the mobile service provider BSNL. As the observed significance value of the variable ‘Post-paid bill payment is convenient’ is greater than 0.0167, the variable does not significantly differ between the mobile service providers Airtel and BSNL.

3.3.5 Customer care services of mobile telecom service providers

The variable considered for the analysis is the customer care services of mobile telecom service providers. The items used to measure the variable are: ‘Activation of additional services can be done very easily’, ‘Deactivation of additional services, if required, can be done very easily’, ‘It is very easy to access customer care helpline’, ‘It is easy to get the right customer care person on the phone’, and ‘The ability to solve problems at customer care is excellent’.

Hypothesis 1.5

The customer care services specifically easiness to activate additional services, easiness to deactivate additional services - if required, easiness to access customer care helpline, easiness to get the right customer care person on the phone and ability to solve problems at customer care significantly differ between BSNL and private sector mobile telecom service providers in Kerala.

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of variables ‘Very easy to activate additional services’, ‘Very easy to deactivate additional services-if required’, ‘Very easy to access customer care helpline’, ‘Very easy to get the right customer care person on the phone’, and ‘Ability to solve problems at customer care’ pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variables 'Very easy to activate additional services', 'Very easy to deactivate additional services-if required', 'Very easy to access customer care helpline', 'Very easy to get the right customer care person on the phone', and 'Ability to solve problems at customer care' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that the variances of the groups have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the Hypothesis 1.5. The Mann-Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variables 'Very easy to activate additional services', 'Very easy to deactivate additional services-if required', 'Very easy to access customer care helpline', 'Very easy to get the right customer care person on the phone', and 'Ability to solve problems at customer care' of the mobile service providers Idea, BSNL, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 3.3.37.

Table 3.3.37

Mean ranking of customer care services of mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean rank				
		Very easy to activate additional services	Very easy to deactivate additional services, if required	Very easy to access customer care helpline	Very easy to get the right customer care person on the phone	Solve problems at customer care
Idea	264	463.60	385.55	443.64	398.42	424.14
BSNL	255	350.18	451.31	367.67	450.93	429.26
Vodafone	229	494.11	460.62	474.40	417.40	443.29
Airtel	122	443.02	463.38	486.65	517.48	458.51
Total	870					

The table 3.3.38 shows the test statistic for the Kruskal-Wallis test based on customer care services of the mobile service providers, the associated degrees of freedom and the significance. As the number of mobile service providers considered for analysis is four, the degrees of freedom will be three.

Table 3.3.38

Kruskal-Wallis test statistics based on customer care services of mobile service providers

Details	Very easy to activate additional services	Very easy to deactivate additional services, if required	Very easy to access customer care helpline	Very easy to get the right customer care person on the phone	Solve problems at customer care
Chi-Square	57.029	17.828	33.514	24.722	2.306
df	3	3	3	3	3
Asymp. Sig.	.000	.000	.000	.000	.511
Grouping Variable: Mobile Service Provider					

The table 3.3.39 shows the descriptive statistics of the variables 'Very easy to activate additional services', 'Very easy to deactivate additional services-if required', 'Very easy to access customer care helpline', 'Very easy to get the right customer care person on the phone', and 'Ability to solve problems at customer care' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel.

Table 3.3.39

Descriptive statistics of customer care services of mobile service providers

Mobile Service Provider	N	Very easy to activate additional services *		Very easy to deactivate additional services-if required *		Very easy to access customer care helpline *		Very easy to get the right customer care person on the phone *		Ability to solve problems at customer care *	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Idea	264	4.27	.663	3.20	.873	3.55	.966	3.54	.849	3.50	.915
BSNL	255	3.91	.716	3.46	.757	3.19	1.097	3.71	.974	3.50	.967
Vodafone	229	4.36	.596	3.47	.809	3.69	.967	3.61	.875	3.58	.883
Airtel	122	4.20	.667	3.46	1.022	3.71	1.032	3.98	.876	3.58	1.090
Total	870	4.18	.685	3.39	.854	3.50	1.035	3.67	.907	3.53	.948

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Kruskal-Wallis test statistics shown in table 3.3.38 indicates that the significance value is 0.000 for the variables 'Very easy to activate additional services', 'Very easy to deactivate additional services-if required', 'Very easy to access customer care helpline', and 'Very easy to get the right customer care person on the phone'. These values are less than 0.05. Therefore, it can be concluded that the customer care services specifically easiness to activate additional services, easiness to deactivate additional services - if required, easiness to access customer care helpline, and easiness to get the right customer care person on the phone significantly differ between BSNL and private sector telecom service providers in Kerala. The significance value is 0.511 for the variable 'Ability to solve problems at customer care'. As it is greater than 0.05, it can be concluded that the customer care services specifically 'Ability to solve problems at customer care' doesn't significantly differ between BSNL and private sector telecom service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 3.3.37 indicates that the private sector telecom service providers have significantly higher levels in the values of the variables 'Very easy to activate additional services', and 'Very easy to access customer care helpline' than BSNL. The value of mean ranking also indicates that mobile telecom service providers BSNL, Vodafone and Airtel have significantly higher levels in the values of the variable 'Very easy to deactivate additional services-if required' than the mobile telecom service provider Idea. It can also be observed that the value of mean ranking is significantly higher for the service providers Airtel and BSNL in respect of the variable 'Very easy to get the right customer care person on the phone' than the mobile telecom service providers Vodafone and Idea. The descriptive statistics of the variables given in the table 3.3.39 also agrees to these findings.

The Kruskal-Wallis test results shows that a difference exists; it doesn't show where the difference lie. Hence Mann-Whitney test has done for post hoc procedures for the Kruskal-Wallis test. As the study is focused on the comparative study of marketing strategies of private sector telecom service providers and BSNL, a concise set of comparison would be, to compare each private sector mobile service provider against BSNL.

Customer care services of mobile telecom service providers: post hoc procedures for the Kruskal-Wallis test.

The Kruskal-Wallis test results shows that the customer care services specifically easiness to activate additional services, easiness to deactivate additional services - if required, easiness to access customer care helpline, easiness to get the right customer care person on the phone and ability to solve problems at customer care significantly differ between BSNL and private sector telecom service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test has done for post hoc procedures for the Kruskal-Wallis test. As the study is focused on the comparative study of marketing strategies of private sector telecom service providers and BSNL, a concise set of comparison would be, to compare each private sector mobile service provider against BSNL. The post hoc procedures for the comparative study are:

(1) Post hoc test 1: The Idea compared to the BSNL

(2) Post hoc test 2: The Vodafone compared to the BSNL

(3) Post hoc test 3: The Airtel compared to the BSNL

As three Mann-Whitney U tests are suggested for the post hoc analysis, in order to reduce the Type I error, Bonferroni correction[7] is applied and the critical value of significance is computed as 0.0167.

1. The Idea compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Very easy to activate additional services', 'Very easy to deactivate additional services-if required', 'Very easy to access customer care helpline', 'Very easy to get the right customer care person on the phone', and 'Ability to solve problems at customer care' of the mobile service providers Idea and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.40.

[7] Andy Field. (2009). Discovering Statistics Using SPSS, (3rd ed.). Sage Publications India Pvt. Ltd., New Delhi, p. 565.

Table 3.3.40

Mean ranking of customer care services of Idea and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank				
		Very easy to activate additional services	Very easy to deactivate additional services, if required	Very easy to access customer care helpline	Very easy to get the right customer care person on the phone	Solve problems at customer care
Idea	264	293.05	239.73	282.88	244.73	258.46
BSNL	255	225.78	280.98	236.32	275.81	261.60
Total	519					

The table 3.3.41 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Very easy to activate additional services', 'Very easy to deactivate additional services-if required', 'Very easy to access customer care helpline', 'Very easy to get the right customer care person on the phone', and 'Ability to solve problems at customer care' pertaining to the mobile service providers Idea and BSNL.

Table 3.3.41

Mann - Whitney U test statistics based on customer care services of Idea and BSNL

Details	Very easy to activate additional services	Very easy to deactivate additional services, if required	Very easy to access customer care helpline	Very easy to get the right customer care person on the phone	Solve problems at customer care
Mann-Whitney U	24934.000	28310.000	27621.000	29627.500	33252.500
Wilcoxon W	57574.000	63290.000	60261.000	64607.500	68232.500
Z	-5.730	-3.368	-3.774	-2.574	-.261
Asymp. Sig. (2-tailed)	.000	.001	.000	.010	.794
Grouping Variable: Mobile Service Provider					

The summary of Mann – Whitney test statistics shown in table 3.3.41 indicates that the observed significance values of the variables 'Very easy to activate additional services', 'Very easy to deactivate additional services-if required', 'Very easy to access customer care helpline' and 'Very easy to get the right customer care person on the phone' are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Idea and BSNL.

The value of mean ranking based on Mann-Whitney test given in table 3.3.40 indicates that the mobile service provider Idea has significantly higher levels of values of the variables 'Very easy to activate additional services' and 'Very easy to access customer care helpline' than BSNL. The mobile service provider BSNL has significantly higher levels of values of mean ranking of the variables 'Very easy to deactivate additional services, if required' and 'Very easy to get the right customer care person on the phone' than the Idea. So it can be concluded that Idea has positively differentiated the customer care services specifically 'Easiness to activate additional services' and 'Easiness to access customer care helpline' from the mobile service provider BSNL. Same time BSNL has positively differentiated the customer care services specifically 'Easiness to deactivate additional services - if required' and 'Easiness to get the right customer care person on the phone' from the mobile service provider Idea.

The significance value is 0.794 for the variable 'Ability to solve problems at customer care'. As the value is greater than 0.0167, it can be concluded that the customer care services specifically 'Ability to solve problems at customer care' doesn't significantly differ between BSNL and Idea.

2. The Vodafone compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Very easy to activate additional services', 'Very easy to deactivate additional services-if required', 'Very easy to access customer care helpline', 'Very easy to get the right customer care person on the phone', and 'Ability to solve problems at customer care' of the mobile service providers Vodafone and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.42.

Table 3.3.42

Mean ranking of customer care services of Vodafone and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank				
		Very easy to activate additional services	Very easy to deactivate additional services, if required	Very easy to access customer care helpline	Very easy to get the right customer care person on the phone	Solve problems at customer care
Vodafone	229	284.80	245.87	273.65	232.73	246.60
BSNL	255	204.51	239.47	214.53	251.28	238.82
Total	484					

The table 3.3.43 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Very easy to activate additional services', 'Very easy to deactivate additional services-if required', 'Very easy to access customer care helpline', 'Very easy to get the right customer care person on the phone', and 'Ability to solve problems at customer care' pertaining to the mobile service providers Vodafone and BSNL.

Table 3.3.43

Mann - Whitney U test statistics based on customer care services of Vodafone and BSNL

Details	Very easy to activate additional services	Very easy to deactivate additional services, if required	Very easy to access customer care helpline	Very easy to get the right customer care person on the phone	Solve problems at customer care
Mann-Whitney U	19511.000	28426.000	22064.000	26959.500	28259.500
Wilcoxon W	52151.000	61066.000	54704.000	53294.500	60899.500
Z	-7.100	-.554	-4.917	-1.581	-.670
Asymp. Sig. (2-tailed)	.000	.579	.000	.114	.503
Grouping Variable: Mobile Service Provider					

The summary of Mann – Whitney test statistics shown in table 3.3.43 indicates that the observed significance values of the variables 'Very easy to activate additional services' and 'Very easy to access customer care helpline' are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Vodafone and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.3.42 indicates that the mobile service provider Vodafone has significantly higher levels of values for these variables than BSNL. So it can be concluded that Vodafone has positively differentiated the customer care services specifically 'Easiness to activate additional services' and 'Easiness to access customer care helpline' from the mobile service provider BSNL.

The significance values are 0.579 for the variable 'Very easy to deactivate additional services - if required', 0.114 for the variable 'Very easy to get the right customer care person on the phone, and 0.503 for the variable 'Solve problems at customer care'. As these values are greater than 0.0167, it can be concluded that the customer care services specifically 'Easiness to deactivate additional services - if required', 'Easiness to get the right customer care person on the phone' and 'Ability to solve problems at customer care' do not significantly differ between BSNL and Vodafone.

3. The Airtel compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Very easy to activate additional services', 'Very easy to deactivate additional services-if required', 'Very easy to access customer care helpline', 'Very easy to get the right customer care person on the phone', and 'Ability to solve problems at customer care' of the mobile service providers Airtel and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.44.

Table 3.3.44

Mean ranking of customer care services of Airtel and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank				
		Very easy to activate additional services	Very easy to deactivate additional services, if required	Very easy to access customer care helpline	Very easy to get the right customer care person on the phone	Solve problems at customer care
BSNL	255	175.89	186.86	172.82	179.84	184.84
Airtel	122	216.41	193.48	222.81	208.16	197.70
Total	377					

The table 3.3.45 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Very easy to activate additional services', 'Very easy to deactivate additional services-if required', 'Very easy to access customer care helpline', 'Very easy to get the right customer care person on the phone', and 'Ability to solve problems at customer care' pertaining to mobile service providers Airtel and BSNL.

Table 3.3.45

Mann - Whitney U test statistics based on customer care services of Airtel and BSNL

Details	Very easy to activate additional services	Very easy to deactivate additional services, if required	Very easy to access customer care helpline	Very easy to get the right customer care person on the phone	Solve problems at customer care
Mann-Whitney U	12211.000	15008.500	11430.000	13218.000	14493.500
Wilcoxon W	44851.000	47648.500	44070.000	45858.000	47133.500
Z	-3.836	-.599	-4.403	-2.543	-1.166
Asymp. Sig. (2-tailed)	.000	.549	.000	.011	.243
Grouping Variable: Mobile Service Provider					

The summary of Mann – Whitney test statistics shown in table 3.3.45 indicates that the observed significance values of the variables 'Very easy to activate additional services', 'Very easy to access customer care helpline' and 'Very easy to get the right customer care person on the phone' are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Airtel and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.3.44 indicates that the mobile service provider Airtel has significantly higher levels of values for these variables than BSNL. So it can be concluded that Airtel has positively differentiated the customer care services specifically 'Easiness to activate additional services', 'Easiness to access customer care helpline' and 'Easiness to get the right customer care person on the phone' from the mobile service provider BSNL.

The significance values are 0.549 for the variable 'Very easy to deactivate additional services, if required', and 0.243 for the variable 'Solve problems at customer care'. As these values are greater than 0.0167, it can be concluded that the customer care services specifically 'Easiness to deactivate additional services - if required', and 'Ability to solve problems at customer care' do not significantly differ between BSNL and Airtel.

3.3.6 Quality of service of mobile telecom service providers

The variable considered for the analysis is the quality of service of mobile telecom service providers. It is measured by the 22-item SERVQUAL scale developed by Parasuraman A. et al. (1991)[8]. The items in SERVQUAL scale is grouped into the five distinct dimensions: Tangibility, Reliability, Responsiveness, Assurance and Empathy. In the guidelines for usage of this scale, it is suggested that, since the SERVQUAL is the basic skeleton underlying service quality, it should be used in its entirety as much as possible, but minor modifications in the wording of items to adapt them to a specific setting are appropriate. The items modified to the specific settings of mobile telecom services, grouped under the five dimensions are given below.

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[8] Parasuraman A, Valarie A. Zeithaml, and Leonard L. Berry. (1991). Refinement and Reassessment of The SERVQUAL Scale. Journal of Retailing, Volume 67, Number 4. Elsevier Science Publishing Company Inc., pp. 420-450.

Tangibility

1. My service provider has modern Facilities for the customers.
2. The physical facilities provided by the service provider are visually appealing.
3. The employees of my service provider have a neat and professional appearance.
4. Pamphlets, brochures, materials associated with the services are visually appealing.

Reliability

5. My service provider fulfills its promises.
6. When you have problems, the service provider is sympathetic and reassuring.
7. My service provider is dependable.
8. My service provider provides the services at the time it promises to do so.
9. My service provider keeps its records accurately.

Responsiveness

10. Employees of the service provider will intimate the customers exactly when services will be performed.
11. Employees will provide prompt services to the customers.
12. Employees are always willing to help the customers.
13. Employees are always ready to respond to the customers' requests.

Assurance

14. Customers can trust employees of the service provider.
15. Customers feel comfortable interacting with employees.
16. The employees are polite to the customers.
17. Employees have knowledge to answer customers' queries.

Empathy

18. My service provider gives individual attention to the customers.

19. The employees give personal attention to the customers.

20. The employees of service provider do understand the needs of the customers.

21. Having the customers' best interest at heart.

22. My service provider has operating hours convenient to the customers.

All items are measured by Likert Scale with five anchor points, specifically Strongly Agree, Agree, Uncertain, Disagree and Strongly Disagree. Equal weightage is given for all items to compute the mean value of respective dimensions of service quality.

Hypothesis 1.6

The dimensions of quality of service, specifically tangibility, reliability, responsiveness, assurance and empathy significantly differ between BSNL and private sector mobile telecom service providers in Kerala.

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of variables 'Tangibility', 'Reliability', 'Responsiveness', 'Assurance' and 'Empathy' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variables 'Tangibility', 'Reliability', 'Responsiveness', 'Assurance' and 'Empathy' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that the variances of the groups have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the Hypothesis 1.6. The Mann-Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variables 'Tangibility', 'Reliability', 'Responsiveness', 'Assurance' and 'Empathy' of the mobile service providers Idea, BSNL, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 3.3.46.

Table 3.3.46

Mean ranking of quality of service of mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean rank				
		Quality of service - Tangibility	Quality of service - Reliability	Quality of service - Responsiveness	Quality of service - Assurance	Quality of service - Empathy
Idea	264	439.36	405.53	440.29	428.25	411.65
BSNL	255	354.31	454.02	361.14	420.54	409.66
Vodafone	229	508.25	451.01	489.97	474.81	474.71
Airtel	122	460.30	432.52	478.32	408.68	467.53
Total	870					

The table 3.3.47 shows the test statistic for the Kruskal-Wallis test based on quality of service of the mobile service providers, the associated degrees of freedom and the significance. As the number of mobile service providers considered for analysis is four, the degrees of freedom will be three.

Table 3.3.47

Kruskal-Wallis test statistics based on quality of service of mobile service providers

Details	Quality of service - Tangibility	Quality of service - Reliability	Quality of service - Responsiveness	Quality of service - Assurance	Quality of service - Empathy
Chi-Square	48.095	6.127	37.346	8.352	12.758
df	3	3	3	3	3
Asymp. Sig.	.000	.106	.000	.039	.005
Grouping Variable: Mobile Service Provider					

The table 3.3.48 shows the descriptive statistics of variables 'Tangibility', 'Reliability', 'Responsiveness', 'Assurance' and 'Empathy' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel.

Table 3.3.48

Descriptive statistics of quality of service of mobile service providers

Mobile Service Provider	N	Tangibility *		Reliability *		Responsiveness*		Assurance *		Empathy *	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Idea	264	3.80	.506	3.69	.608	3.76	.654	3.85	.580	3.50	.628
BSNL	255	3.69	.527	3.82	.549	3.55	.717	3.82	.635	3.49	.676
Vodafone	229	4.00	.598	3.76	.616	3.87	.725	3.94	.635	3.66	.662
Airtel	122	3.89	.525	3.76	.582	3.87	.622	3.82	.562	3.65	.588
Total	870	3.85	.553	3.76	.591	3.74	.700	3.86	.610	3.56	.650

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Kruskal-Wallis test statistics shown in table 3.3.47 indicates that the significance value is 0.000 for the variables Tangibility and Responsiveness, 0.039 for the variable Assurance and 0.005 for the variable Empathy. These values are less than 0.05. Therefore, it can be concluded that the factors of quality of service specifically tangibility, responsiveness, assurance and empathy significantly differ between BSNL and private sector telecom service providers in Kerala. The significance value of the variable Reliability is 0.106. As this value is greater than 0.05, it can be concluded that the Reliability factor of quality of service does not significantly differ between BSNL and private sector telecom service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 3.3.46 indicates that the private sector telecom service providers have significantly higher levels in the values of the variables Tangibility and Responsiveness than BSNL. The value of mean ranking also indicates that quality of service factor assurance is more for Vodafone than other telecom service providers. The mean ranking of values of the variable empathy is higher for Vodafone and Airtel than Idea and BSNL. The descriptive statistics of the variables given in the table 3.3.48 also agrees to these findings.

Quality of service of mobile telecom service providers: post hoc procedures for the Kruskal-Wallis test.

The Kruskal-Wallis test results shows that the factors of quality of service, specifically tangibility, reliability, responsiveness, assurance and empathy significantly differ between BSNL and private sector telecom service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test has done for post hoc procedures for the Kruskal-Wallis test. As the study is focused on the comparative study of marketing strategies of private sector telecom service providers and BSNL, a concise set of comparison would be, to compare each private sector mobile service provider against BSNL. The post hoc procedures for the comparative study are:

(1) Post hoc test 1: The Idea compared to the BSNL

(2) Post hoc test 2: The Vodafone compared to the BSNL

(3) Post hoc test 3: The Airtel compared to the BSNL

As three Mann-Whitney U tests are suggested for the post hoc analysis, in order to reduce the Type I error, Bonferroni correction[9] is applied and the critical value of significance is computed as 0.0167.

1. The Idea compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables tangibility, reliability, responsiveness, assurance and empathy of the mobile service providers Idea and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.49.

[9] Andy Field. (2009). Discovering Statistics Using SPSS, (3rd ed.). Sage Publications India Pvt. Ltd., New Delhi, p. 565.

Table 3.3.49

Mean ranking of quality of service of Idea and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank				
		Quality of service - Tangibility	Quality of service - Reliability	Quality of service - Responsiveness	Quality of service - Assurance	Quality of service - Empathy
Idea	264	286.45	245.81	284.24	262.47	261.32
BSNL	255	232.61	274.69	234.90	257.44	258.64
Total	519					

The table 3.3.50 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables tangibility, reliability, responsiveness, assurance and empathy pertaining to the mobile service providers Idea and BSNL.

Table 3.3.50

Mann - Whitney U test statistics based on quality of service of Idea and BSNL

Details	Quality of service - Tangibility	Quality of service - Reliability	Quality of service - Responsiveness	Quality of service - Assurance	Quality of service - Empathy
Mann-Whitney U	26676.000	29914.500	27260.000	33007.000	33312.000
Wilcoxon W	59316.000	64894.500	59900.000	65647.000	65952.000
Z	-4.137	-2.210	-3.781	-.388	-.205
Asymp. Sig. (2-tailed)	.000	.027	.000	.698	.838
Grouping Variable: Mobile Service Provider					

The summary of Mann – Whitney test statistics shown in table 3.3.50 indicates that the observed significance values of the variables Tangibility and Responsiveness are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Idea and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.3.49 indicates that the mobile service provider Idea has significantly higher levels of values of the variables Tangibility and Responsiveness than BSNL. The significance value of the variables Reliability,

Assurance and Empathy are greater than 0.0167. Therefore it can be concluded that the quality of service factors specifically Reliability, Assurance, and Empathy do not significantly differ between BSNL and Idea.

2. The Vodafone compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables, reliability, responsiveness, assurance and empathy of the mobile service providers Vodafone and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.51

Table 3.3.51

Mean ranking of quality of service of Vodafone and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank				
		Quality of service - Tangibility	Quality of service - Reliability	Quality of service - Responsiveness	Quality of service - Assurance	Quality of service - Empathy
Vodafone	229	285.83	241.81	278.74	257.76	260.57
BSNL	255	203.59	243.12	209.95	228.79	226.27
Total	484					

The table 3.3.52 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables tangibility, reliability, responsiveness, assurance and empathy pertaining to the mobile service providers Vodafone and BSNL.

Table 3.3.52

Mann - Whitney U test statistics based on quality of service of Vodafone and BSNL

Details	Quality of service - Tangibility	Quality of service - Reliability	Quality of service -Responsiveness	Quality of service - Assurance	Quality of service - Empathy
Mann-Whitney U	19275.500	29039.000	20898.000	25702.500	25059.500
Wilcoxon W	51915.500	55374.000	53538.000	58342.500	57699.500
Z	-6.523	-.104	-5.442	-2.297	-2.707
Asymp. Sig. (2-tailed)	.000	.917	.000	.022	.007
Grouping Variable: Mobile Service Provider					

The summary of Mann – Whitney test statistics shown in table 3.3.52 indicates that the observed significance values of the variables Tangibility, Responsiveness and Empathy are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Vodafone and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.3.51 indicates that the mobile service provider Vodafone has significantly higher levels of values of the variables Tangibility, Responsiveness and Empathy than BSNL. The significance value of the variables Reliability and Assurance are greater than 0.0167. Therefore it can be concluded that the quality of service factors specifically Reliability and Assurance, do not significantly differ between BSNL and Vodafone.

3. The Airtel compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables tangibility, reliability, responsiveness, assurance and empathy of the mobile service providers Airtel and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.53.

Table 3.3.53

Mean ranking of quality of service of Airtel and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank				
		Quality of service - Tangibility	Quality of service - Reliability	Quality of service - Responsiveness	Quality of service - Assurance	Quality of service - Empathy
Airtel	122	220.13	182.28	223.95	186.27	206.24
BSNL	255	174.11	192.21	172.28	190.31	180.75
Total	377					

The table 3.3.54 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables tangibility, reliability, responsiveness, assurance and empathy pertaining to the mobile service providers Airtel and BSNL.

Table 3.3.54

Mann - Whitney U test statistics based on quality of service of Airtel and BSNL

Details	Quality of service - Tangibility	Quality of service - Reliability	Quality of service - Responsiveness	Quality of - service Assurance	Quality of service - Empathy
Mann-Whitney U	11757.000	14735.500	11291.500	15222.000	13451.500
Wilcoxon W	44397.000	22238.500	43931.500	22725.000	46091.500
Z	-3.878	-.834	-4.343	-.340	-2.135
Asymp. Sig. (2-tailed)	.000	.405	.000	.734	.033
Grouping Variable: Mobile Service Provider					

The summary of Mann – Whitney test statistics shown in table 3.3.54 indicates that the observed significance values of the variables Tangibility and Responsiveness are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Airtel and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.3.53 indicates that the mobile service provider Airtel has significantly higher levels in the values of the variables Tangibility and Responsiveness than BSNL. The significance value of the variables Reliability, Assurance, and Empathy are greater than 0.0167. Therefore it can be concluded that the quality of service factors specifically Reliability, Assurance and Empathy, do not significantly differ between BSNL and Airtel.

3.3.7 Brand value of mobile telecom service providers

The brand value of mobile telecom service providers are measured by Young and Rubicam's Brand Asset Valuator (BAV). As cited by Kevin Lane Keller (2008)[10], BAV measures brands on five fundamental measures of equity value and in terms of a broad array of perceptual dimensions. The five key components in BAV are: (i) Differentiation - measures the degree to which a brand is seen as

[10] Kevin Lane Keller. (2008). Strategic Brand Management - Building, Measuring and Managing Brand Equity. Pearson Education Inc., New Delhi, pp. 415-416.

different from others. (ii) Energy - measures the brand's ability to meet future consumer needs and attract new customers. (iii) Relevance - measures the breadth of a brands' appeal, but not necessarily its profitability. (iv) Esteem - measures how well the brand is regarded and respected – in short, how well it's liked. (v) Knowledge - measures how familiar and intimate consumers are with brand. Based on BAV model following items are formulated to measure the brand value.

1. My service provider established a brand which is distinctive from other operators.
2. My service provider established a brand which always making the difference relevant from other operators.
3. My service provider established a brand which is popularly regarded and respected.
4. My service provider established a brand which is well-known and reflected as a successful outcome.

All items are measured by Likert Scale with five anchor points, specifically Strongly Agree, Agree, Uncertain, Disagree and Strongly Disagree. Equal weightage is given for all items to compute the mean score of brand value.

Hypothesis 1.7

The brand value significantly differs between BSNL and private sector mobile telecom service providers in Kerala.

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of variable 'Brand value' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variable 'Brand value' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that the variances of the groups have

homogeneous variances. Even though the groups have homogeneous variances, the data are not normally distributed. Therefore the Kruskal-Wallis test is used to test the Hypothesis 1.7. The Mann-Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variable 'Brand value' of the mobile service providers Idea, BSNL, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 3.3.55.

Table 3.3.55

Mean ranking of brand value of mobile service providers based on Kruskal-Wallis test

Variable	Mobile Service Provider	N	Mean Rank
Brand value	Idea	264	396.30
	BSNL	255	476.03
	Vodafone	229	471.77
	Airtel	122	367.52
	Total	870	

The table 3.3.56 shows the test statistic for the Kruskal-Wallis test based on the brand value of the mobile service providers, the associated degrees of freedom and the significance. As the number of mobile service providers considered for analysis is four, the degrees of freedom will be three.

Table 3.3.56

Kruskal-Wallis test statistics based on brand value of mobile service providers

Details	Brand value
Chi-Square	27.257
df	3
Asymp. Sig.	.000
Grouping Variable: Mobile Service Provider	

The table 3.3.57 shows the descriptive statistics of the variable 'Brand value' related to the mobile service providers Idea, BSNL, Vodafone and Airtel.

Table 3.3.57

Descriptive statistics of the variable - brand value

Mobile Service Provider	Mean*	N	Std. Dev.
Idea	3.93	264	.709
BSNL	4.17	255	.626
Vodafone	4.12	229	.736
Airtel	3.90	122	.661
Total	4.05	870	.695

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Kruskal-Wallis test statistics shown in table 3.3.56 indicates that the significance value of the variable 'Brand value' is 0.000. The value is less than 0.05. Therefore, it can be concluded that the brand value significantly differs between BSNL and private sector telecom service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 3.3.55 indicates that the BSNL and Vodafone have significantly higher levels in the rating of brand value than Idea and Airtel. The descriptive statistics of the variable given in the table 3.357 also agrees to this finding.

Brand value of mobile telecom service providers: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results shows that the brand value significantly differ between BSNL and private sector telecom service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test has done for post hoc procedures for the Kruskal-Wallis test. As the study is focused on the comparative study of marketing strategies of private sector telecom service providers and BSNL, a concise set of comparison would be, to compare each private sector mobile service provider against BSNL. The post hoc procedures for the comparative study are:

(1) Post hoc test 1: The Idea compared to the BSNL

(2) Post hoc test 2: The Vodafone compared to the BSNL

(3) Post hoc test 3: The Airtel compared to the BSNL

As three Mann-Whitney U tests are suggested for the post hoc analysis, in order to reduce the Type I error, Bonferroni correction[11] is applied and the critical value of significance is computed as 0.0167.

1. The Idea compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variable 'Brand value' of the mobile service providers Idea and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.58.

Table 3.3.58

Mean ranking of brand value of Idea and BSNL based on Mann-Whitney U test

Variable	Mobile Service Provider	N	Mean rank
Brand value	Idea	264	236.38
	BSNL	255	284.46
	Total	519	

The table 3.3.59 shows the test statistic for the Mann- Whitney test on the focused comparison of the variable 'Brand value' pertaining to the mobile service providers Idea and BSNL.

Table 3.3.59

Mann - Whitney U test statistics based on brand value of Idea and BSNL

Details	Brand value
Mann-Whitney U	27423.500
Wilcoxon W	62403.500
Z	-3.689
Asymp. Sig. (2-tailed)	.000
Grouping Variable: Mobile Service Provider	

[11] Andy Field. (2009). Discovering Statistics Using SPSS, (3rd ed.). Sage Publications India Pvt. Ltd., New Delhi, p. 565.

The summary of Mann – Whitney test statistics shown in table 3.3.59 indicates that the observed significance value of the variable 'Brand value' is less than 0.0167. Therefore brand value significantly differs between the mobile service providers Idea and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.3.58 indicates that the mobile service provider BSNL has significantly higher levels in the rating of brand value than Idea.

2. The Vodafone compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variable brand value of the mobile service providers Vodafone and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.60.

Table 3.3.60

Mean ranking of brand value of Vodafone and BSNL based on Mann-Whitney U test

Variables	Mobile Service Provider	N	Mean rank
Brand value	BSNL	255	242.99
	Vodafone	229	241.96
	Total	484	

The table 3.3.61 shows the test statistic for the Mann- Whitney test on the focused comparison of the variable 'Brand value' pertaining to the mobile service providers Vodafone and BSNL.

Table 3.3.61

Mann - Whitney U test statistics based on brand value of Vodafone and BSNL

Details	Brand value
Mann-Whitney U	29073.500
Wilcoxon W	55408.500
Z	-.081
Asymp. Sig. (2-tailed)	.935
Grouping Variable: Mobile Service Provider	

The summary of Mann – Whitney test statistics shown in table 3.3.61 indicates that the observed significance value of the variable 'Brand value' is greater than 0.0167. Therefore brand value does not significantly differ between BSNL and Vodafone.

3. The Airtel compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variable 'Brand value' of the mobile service providers Airtel and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.3.62.

Table 3.3.62

Mean ranking of brand value of Airtel and BSNL based on Mann-Whitney U test

Variables	Mobile Service Provider	N	Mean rank
Brand value	BSNL	255	204.59
	Airtel	122	156.42
	Total	377	

The table 3.3.63 shows the test statistic for the Mann- Whitney test on the focused comparison of the variable 'Brand value' pertaining to the mobile service providers Airtel and BSNL.

Table 3.3.63

Mann - Whitney U test statistics based on brand value of Airtel and BSNL

Details	Brand value
Mann-Whitney U	11580.500
Wilcoxon W	19083.500
Z	-4.071
Asymp. Sig. (2-tailed)	.000
Grouping Variable: Mobile Service Provider	

The summary of Mann – Whitney test statistics shown in table 3.3.63 indicates that the observed significance values of the variable brand value is less

than 0.0167. Therefore brand value significantly differs between the mobile service providers Airtel and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.3.62 indicates that the brand value of BSNL is significantly higher than that of Airtel.

3.4 Analysis of pricing strategies of BSNL and private sector mobile telecom service providers in Kerala

Hypothesis 2

There is significant difference between the pricing strategies of BSNL and private sector mobile telecom service providers in Kerala.

Variables considered for the analysis of pricing strategies

The variables considered for the analysis of pricing strategies of mobile telecom service providers in Kerala are: tariff variety, competitive pricing and ethical pricing practices.

The tariff variety is measured by the items 'Variety of tariff plans', 'Easiness to switch between tariff plans', 'Convenient recharge options for prepaid customers', and 'Advise suitable tariff plans'. The competitive pricing is measured by the items: 'Better pricing as compared to others', 'Better offers as compared to others' and 'Value for money spends'. The variable ethical pricing practices comprises of 'Transparent billing and no hidden charges, 'Ethical pricing practices', and 'Easiness to deactivate additional services - if required'

All items of the variables are measured by Likert Scale with five anchor points, specifically Strongly Agree, Agree, Uncertain, Disagree and Strongly Disagree.

All the variables considered for the analysis of pricing strategies of mobile telecom service providers are separately tested with following hypotheses.

3.4.1 Tariff variety offered to prepaid customers

The variable considered for the analysis is the tariff variety offered to prepaid customers of mobile telecom service providers. The items used to measure the variable are: 'Attractive varieties of tariff plans are offered by the mobile service

provider', 'It is very easy to switchover from existing tariff plan to any other tariff plan', 'Recharge facility available for convenient options' and 'The mobile service provider advises suitable tariff plans to the customers' .

Hypothesis 2.1

The pricing strategies associated with Tariff variety offered to pre-paid customers specifically 'Variety of tariff plans', 'Easiness to switch between tariff plans', 'Convenient recharge options', and 'Advise suitable tariff plans' significantly differ between BSNL and private sector mobile telecom service providers in Kerala.

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of variables 'Variety of tariff plans', 'Easy to switch between tariff plans', 'Convenient recharge options, and 'Advise suitable tariff plans' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variables 'Variety of tariff plans', 'Easy to switch between tariff plans', 'Convenient recharge options, and 'Advise suitable tariff plans' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that the variances of the groups have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the Hypothesis 2.1. The Mann-Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variables 'Variety of tariff plans', 'Easy to switch between tariff plans', 'Convenient recharge options, and 'Advise suitable tariff plans' of the mobile service providers Idea, BSNL, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 3.4.1.

Table 3.4.1

Mean ranking of tariff variety offered to prepaid customers by mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean rank			
		Variety of tariff plans	Easy to switch over tariff plans	Convenient recharge options available	Advises suitable tariff plans
Idea	229	378.53	371.49	398.27	435.12
BSNL	230	403.86	430.52	324.50	251.20
Vodafone	200	359.78	341.88	418.84	444.88
Airtel	107	394.72	385.93	412.66	442.68
Total	766				

The table 3.4.2 shows the test statistic for the Kruskal-Wallis test based on tariff variety offered to prepaid customers by the mobile service providers, the associated degrees of freedom and the significance. As the number of the mobile service providers considered for analysis is four, the degrees of freedom will be three.

Table 3.4.2

Kruskal-Wallis test statistics based on tariff variety offered to prepaid customers by mobile service providers

Details	Variety of tariff plans	Easy to switch over tariff plans	Convenient recharge options available	Advises suitable tariff plans
Chi-Square	6.146	23.822	29.860	129.809
df	3	3	3	3
Asymp. Sig.	.105	.000	.000	.000
Grouping Variable: Mobile Service Provider				

The table 3.4.3 shows the descriptive statistics of the variables ‘Variety of tariff plans’, ‘Easy to switch between tariff plans’, ‘Convenient recharge options, and ‘Advise suitable tariff plans’ pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel.

Table 3.4.3

Descriptive statistics of tariff variety offered to prepaid customers by mobile service providers

Mobile Service Provider	N	Variety of tariff plans*		Easy to switch between tariff plans *		Convenient recharge options *		Advise of suitable tariff plans *	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Idea	229	3.95	.717	3.77	.684	4.25	.678	3.65	.828
BSNL	230	4.01	.796	3.97	.686	3.85	1.009	2.69	1.081
Vodafone	200	3.88	.761	3.64	.729	4.31	.697	3.68	.912
Airtel	107	3.99	.759	3.80	.758	4.28	.724	3.67	1.044
Total	766	3.96	.759	3.80	.717	4.15	.824	3.37	1.059

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Kruskal-Wallis test statistics shown in table 3.4.2 indicates that the significance value is 0.000 for the variables 'Easy to switch between tariff plans', 'Convenient recharge options, and 'Advise of suitable tariff plans'. These values are less than 0.05. Therefore, it can be concluded that the pricing strategies associated with variety of tariff plans offered to prepaid customers specifically 'Easy to switch between tariff plans', 'Convenient recharge options', and 'Advise suitable tariff plans' significantly differ between BSNL and private sector telecom service providers in Kerala. The significance value is 0.105 for the variable 'Variety of tariff plans'. As the value is greater than 0.05, it can be concluded that the 'Variety of tariff plans' does not significantly differ between BSNL and private sector telecom service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 3.4.1 indicates that BSNL has significantly higher level in the value of the variable 'Easy to switch over tariff plans'. The private sector telecom service providers have significantly higher levels in the values of the variables 'Convenient recharge options available', 'and 'Advise suitable tariff plans' than BSNL. The descriptive statistics of the variables given in the table 3.4.3 also agrees to these findings.

Variety of tariff plans offered to prepaid customers: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results shows that the variety of tariff plans offered to pre-paid customers specifically 'Variety of tariff plans', 'Easy to switch between tariff plans', 'Convenient recharge options', and 'Advise suitable tariff plans' significantly differ between BSNL and private sector telecom service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test has done for post hoc procedures for the Kruskal-Wallis test. As the study is focused on the comparative study of marketing strategies of private sector telecom service providers and BSNL, a concise set of comparison would be, to compare each private sector mobile service provider against BSNL. The post hoc procedures for the comparative study are:

(1) Post hoc test 1: The Idea compared to the BSNL

(2) Post hoc test 2: The Vodafone compared to the BSNL

(3) Post hoc test 3: The Airtel compared to the BSNL

As three Mann-Whitney U tests are suggested for the post hoc analysis, in order to reduce the Type I error, Bonferroni correction[12] is applied and the critical value of significance is computed as 0.0167.

1. The Idea compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Variety of tariff plans', 'Easy to switch between tariff plans', 'Convenient recharge options', and 'Advise of suitable tariff plans' of the mobile service providers Idea and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.4.4.

[12] Andy Field. (2009). Discovering Statistics Using SPSS, (3rd ed.). Sage Publications India Pvt. Ltd., New Delhi, p. 565.

Table 3.4.4

Mean ranking of tariff variety offered to prepaid customers by Idea and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank			
		Variety of tariff plans	Easy to switch over tariff plans	Convenient recharge options available	Advises suitable tariff plans
Idea	229	222.23	212.00	252.56	287.41
BSNL	230	237.73	247.92	207.54	172.84
Total	459				

The table 3.4.5 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Variety of tariff plans, 'Easy to switch between tariff plans', 'Convenient recharge options', and 'Advise of suitable tariff plans' pertaining to the mobile service providers Idea and BSNL.

Table 3.4.5

Mann - Whitney U test statistics based on tariff variety offered to prepaid customers by Idea and BSNL

Details	Variety of tariff plans	Easy to switch over tariff plans	Convenient recharge options available	Advises suitable tariff plans
Mann-Whitney U	24556.000	22213.000	21169.000	13187.500
Wilcoxon W	50891.000	48548.000	47734.000	39752.500
Z	-1.455	-3.347	-4.015	-9.650
Asymp. Sig. (2-tailed)	.146	.001	.000	.000
Grouping Variable: Mobile Service Provider				

The summary of Mann – Whitney test statistics shown in table 3.4.5 indicates that the observed significance values of the variables 'Easy to switch between tariff plans', 'Convenient recharge options', and 'Advise of suitable tariff plans' are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Idea and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.4.4 indicates that the mobile service provider

Idea has significantly higher levels of values of the variables, 'Convenient recharge options', and 'Advise of suitable tariff plans' than BSNL. The mobile service provider BSNL has significantly higher level in the value of mean ranking of the variable 'Easy to switch between tariff plans' than Idea.

The significance value of the variable 'Variety of tariff plans' is 0.146. As the value is greater than 0.0167, it can be concluded that 'Variety of tariff plans' does not significantly differ between BSNL and Idea.

2. The Vodafone compared to the BSNL: Mann-Whitney U test.

The summary of ranked data corresponding to the variables 'Variety of tariff plans', 'Easy to switch between tariff plans', 'Convenient recharge options', and 'Advise of suitable tariff plans' of the mobile service providers Vodafone and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.4.6.

Table 3.4.6

Mean ranking of tariff variety offered to prepaid customers by Vodafone and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank			
		Variety of tariff plans	Easy to switch over tariff plans	Convenient recharge options available	Advises suitable tariff plans
Vodafone	200	202.54	189.02	243.44	272.92
BSNL	230	226.77	238.53	191.20	165.57
Total	430				

The table 3.4.7 shows the test statistic for the Mann-Whitney test on the focused comparison of the variables 'Variety of tariff plans', 'Easy to switch between tariff plans', 'Convenient recharge options', and 'Advise of suitable tariff plans' pertaining to the mobile service providers Vodafone and BSNL.

Table 3.4.7

Mann - Whitney U test statistics based on tariff variety offered to prepaid customers by Vodafone and BSNL

Details	Variety of tariff plans	Easy to switch over tariff plans	Convenient recharge options available	Advises suitable tariff plans
Mann-Whitney U	20408.500	17703.500	17412.000	11515.000
Wilcoxon W	40508.500	37803.500	43977.000	38080.000
Z	-2.284	-4.719	-4.744	-9.289
Asymp. Sig. (2-tailed)	.022	.000	.000	.000
Grouping Variable: Mobile Service Provider				

The summary of Mann – Whitney test statistics shown in table 3.4.7 indicates that the observed significance values of the variables 'Easy to switch between tariff plans', 'Convenient recharge options', and 'Advise of suitable tariff plans' are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Vodafone and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.4.6 indicates that the mobile service provider Vodafone has significantly higher levels of values of the variables, 'Convenient recharge options', and 'Advise of suitable tariff plans' than BSNL. The mean ranking indicates that BSNL has significantly higher levels of values of the variable 'Easy to switch between tariff plans'.

The significance value of the variable 'Variety of tariff plans', is greater than 0.0167. Hence it can be concluded that the variable 'Variety of tariff plans' doesn't significantly differ between BSNL and Vodafone.

3. The Airtel compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Variety of tariff plans', 'Easy to switch between tariff plans', 'Convenient recharge options', and 'Advise of suitable tariff plans' of the mobile service providers Airtel and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.4.8.

Table 3.4.8

Mean ranking of tariff variety offered to prepaid customers by Airtel and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank			
		Variety of tariff plans	Easy to switch over tariff plans	Convenient recharge options available	Advises suitable tariff plans
Airtel	107	166.09	155.94	195.31	223.17
BSNL	230	170.35	175.07	156.76	143.80
Total	337				

The table 3.4.9 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Variety of tariff plans', 'Easy to switch between tariff plans', 'Convenient recharge options', and 'Advise of suitable tariff plans' pertaining to the mobile service providers Airtel and BSNL.

Table 3.4.9

Mann - Whitney U test statistics based on tariff variety offered to prepaid customers by Airtel and BSNL

Details	Variety of tariff plans	Easy to switch over tariff plans	Convenient recharge options available (Prepaid)	Advises suitable tariff plans
Mann-Whitney U	11993.500	10908.000	9490.000	6509.000
Wilcoxon W	17771.500	16686.000	36055.000	33074.000
Z	-.432	-1.923	-3.716	-7.203
Asymp. Sig. (2-tailed)	.665	.054	.000	.000
Grouping Variable: Mobile Service Provider				

The summary of Mann – Whitney test statistics shown in table 3.4.9 indicates that the observed significance values of the variables 'Convenient recharge options', and 'Advise of suitable tariff plans' are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Airtel and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.4.8

indicates that the mobile service provider Airtel has significantly higher levels of values for these variables than BSNL.

The significance values of are 0.054 for the variable 'Easy to switch between tariff plans', and 0.665 for the variable 'Variety of tariff plans'. As these values are greater than 0.0167, it can be concluded that the variables 'Variety of tariff plans', and 'Easy to switch between tariff plans' do not significantly differ between BSNL and Airtel.

3.4.2 Tariff variety offered to post-paid customers

The variable considered for the analysis is the tariff variety offered to post-paid customers of mobile telecom service providers. The items used to measure the variable are: 'Attractive varieties of tariff plans are offered by the mobile service provider', 'It is very easy to switchover from existing tariff plan to any other tariff plan', and 'The mobile service provider advises suitable tariff plans to the customers'.

Hypothesis 2.2

The pricing strategies associated with Tariff variety offered to post-paid customers specifically 'Tariff variety', 'Easiness to switch between tariff plans', and 'Advise of suitable tariff plans' significantly differ between BSNL and private sector mobile telecom service providers in Kerala.

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of variables 'Variety of tariff plans', 'Easy to switch between tariff plans', and 'Advise suitable tariff plans' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variables 'Variety of tariff plans', 'Easy to switch between tariff plans', and 'Advise suitable tariff plans' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that the variances of the groups have

heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the Hypothesis 2.2. The Mann-Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variables 'Variety of tariff plans', 'Easy to switch between tariff plans', and 'Advise suitable tariff plans' of the mobile service providers Idea, BSNL, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 3.4.10.

Table 3.4.10

Mean ranking of tariff variety offered to post-paid customers by mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean rank		
		Variety of tariff plans	Easy to switch over tariff plans	Advises suitable tariff plans
Idea	35	43.54	47.53	60.13
BSNL	25	55.48	52.22	28.04
Vodafone	29	53.57	56.03	67.93
Airtel	15	66.37	57.73	45.63
Total	104			

The table 3.4.11 shows the test statistic for the Kruskal-Wallis test based on tariff variety offered to post-paid customers by the mobile service providers, the associated degrees of freedom and the significance. As the number of the mobile service providers considered for analysis is four, the degrees of freedom will be three.

Table 3.4.11

Kruskal-Wallis test statistics based on tariff variety offered to post-paid customers by mobile service providers

Details	Variety of tariff plans	Easy to switch over tariff plans	Advises suitable tariff plans
Chi-Square	9.060	2.258	29.636
df	3	3	3
Asymp. Sig.	.029	.521	.000
Grouping Variable: Mobile Service Provider			

The table 3.4.12 shows the descriptive statistics of the variables 'Variety of tariff plans', 'Easy to switch between tariff plans', and 'Advise suitable tariff plans' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel

Table 3.4.12

Descriptive statistics of tariff variety offered to post-paid customers by mobile service providers

Mobile Service Provider	N	Variety of tariff plans*		Easy to switch between tariff plans*		Advise of suitable tariff plans*	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Idea	35	3.80	.584	3.66	.639	3.74	.886
BSNL	25	4.08	.493	3.76	.663	2.64	.757
Vodafone	29	4.03	.626	3.90	.724	4.00	.802
Airtel	15	4.33	.617	3.93	.704	3.20	.941
Total	104	4.01	.599	3.79	.678	3.47	.985

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Kruskal-Wallis test statistics shown in table 3.4.11 indicates that the significance value is 0.000 for the variable 'Advise of suitable tariff plans' and 0.029 for the variable 'Variety of tariff plans'. These values are less than 0.05. Therefore, it can be concluded that the pricing strategies associated with the tariff variety offered to post-paid customers specifically 'Variety of tariff plans' and 'Advise suitable tariff plans' significantly differ between BSNL and private sector telecom service providers in Kerala. The significance value is 0.521 for the variable 'Easy to switch between tariff plans'. As the value is greater than 0.05, it can be concluded that the 'Easy to switch between tariff plans' does not significantly differ between BSNL and private sector telecom service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 3.4.10 indicates that the service provider Airtel has comparatively higher level in the value of the variable 'Variety of tariff plans' than other service providers. The private sector telecom service providers have significantly higher levels in the values of the

variables ‘Advises suitable tariff plans’ than BSNL. The descriptive statistics of the variables given in the table 3.4.12 also agrees to these findings.

Variety of tariff plans offered to post-paid customers: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results show that the variety of tariff plans offered to post-paid customers specifically ‘Variety of tariff plans’, ‘Easy to switch between tariff plans’, and ‘Advise suitable tariff plans’ significantly differ between BSNL and private sector telecom service providers in Kerala. But it doesn’t show where the difference lie. Hence Mann-Whitney U test has done for post hoc procedures for the Kruskal-Wallis test. As the study is focused on the comparative study of marketing strategies of private sector telecom service providers and BSNL, a concise set of comparison would be, to compare each private sector mobile service provider against BSNL. The post hoc procedures for the comparative study are:

(1) Post hoc test 1: The Idea compared to the BSNL
(2) Post hoc test 2: The Vodafone compared to the BSNL
(3) Post hoc test 3: The Airtel compared to the BSNL

As three Mann-Whitney U tests are suggested for the post hoc analysis, in order to reduce the Type I error, Bonferroni correction[13] is applied and the critical value of significance is computed as 0.0167.

1. The Idea compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables ‘Variety of tariff plans’, ‘Easy to switch between tariff plans’, and ‘Advise of suitable tariff plans’ of the mobile service providers Idea and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.4.13.

[13] Andy Field. (2009). Discovering Statistics Using SPSS, (3rd ed.). Sage Publications India Pvt. Ltd., New Delhi, p. 565.

Table 3.4.13

Mean ranking of tariff variety offered to post-paid customers by Idea and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank		
		Variety of tariff plans	Easy to switch over tariff plans	Advises suitable tariff plans
Idea	35	27.49	29.33	38.27
BSNL	25	34.72	32.14	19.62
Total	60			

The table 3.4.14 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Variety of tariff plans, 'Easy to switch between tariff plans', and 'Advise of suitable tariff plans' pertaining to mobile service providers Idea and BSNL.

Table 3.4.14

Mann - Whitney U test statistics based on tariff variety offered to post-paid customers by Idea and BSNL

Details	Variety of tariff plans	Easy to switch over tariff plans	Advises suitable tariff plans
Mann-Whitney U	332.000	396.500	165.500
Wilcoxon W	962.000	1026.500	490.500
Z	-1.930	-.707	-4.250
Asymp. Sig. (2-tailed)	.054	.480	.000
Grouping Variable: Mobile Service Provider			

The summary of Mann – Whitney test statistics shown in table 3.4.14 indicates that the observed significance values of the variables 'Advise of suitable tariff plans' is less than 0.0167. Therefore this variable significantly differs between the mobile service providers Idea and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.4.13 indicates that the mobile service provider Idea has significantly higher level in the value of the variable, 'Advise of suitable tariff plans' than BSNL. The significance values of the variables 'Variety of tariff

plans' and 'Easy to switch over tariff plans' are greater than 0.0167, it can be concluded these variables do not significantly differ between BSNL and Idea.

2. The Vodafone compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Variety of tariff plans', 'Easy to switch between tariff plans', and 'Advise of suitable tariff plans' of the mobile service providers Vodafone and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.4.15.

Table 3.4.15

Mean ranking of tariff variety offered to post-paid customers by Vodafone and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank		
		Variety of tariff plans	Easy to switch over tariff plans	Advises suitable tariff plans
Vodafone	29	27.07	28.45	36.74
BSNL	25	28.00	26.40	16.78
Total	54			

The table 3.4.16 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Variety of tariff plans, 'Easy to switch between tariff plans', and 'Advise of suitable tariff plans' pertaining to the mobile service providers Vodafone and BSNL.

Table 3.4.16

Mann - Whitney U test statistics based on tariff variety offered to post-paid customers by Vodafone and BSNL

Details	Variety of tariff plans	Easy to switch over tariff plans	Advises suitable tariff plans
Mann-Whitney U	350.000	335.000	94.500
Wilcoxon W	785.000	660.000	419.500
Z	-.265	-.532	-4.834
Asymp. Sig. (2-tailed)	.791	.595	.000
Grouping Variable: Mobile Service Provider			

The summary of Mann – Whitney test statistics shown in table 3.4.16 indicates that the observed significance values of the variable 'Advise of suitable tariff plans' is less than 0.0167. Therefore this variable significantly differs between the mobile service providers Vodafone and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.4.15 indicates that the mobile service provider Vodafone has significantly higher level in the value of the variable, 'Advise of suitable tariff plans' than BSNL. The significance values of the variables 'Variety of tariff plans' and 'Easy to switch over tariff plans' are greater than 0.0167, it can be concluded these variables do not significantly differ between BSNL and Vodafone.

3. The Airtel Compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Variety of tariff plans', 'Easy to switch between tariff plans', and 'Advise of suitable tariff plans' of the mobile service providers Airtel and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.4.17.

Table 3.4.17

Mean ranking of tariff variety offered to post-paid customers by Airtel and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank		
		Variety of tariff plans	Easy to switch over tariff plans	Advises suitable tariff plans
Airtel	15	23.40	21.87	25.27
BSNL	25	18.76	19.68	17.64
Total	40			

The table 3.4.18 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Variety of tariff plans, 'Easy to switch between tariff plans', and 'Advise of suitable tariff plans' pertaining to the mobile service providers Airtel and BSNL.

Table 3.4.18

Mann - Whitney U test statistics based on tariff variety offered to post-paid customers by Airtel and BSNL

Details	Variety of tariff plans	Easy to switch over tariff plans	Advises suitable tariff plans
Mann-Whitney U	144.000	167.000	116.000
Wilcoxon W	469.000	492.000	441.000
Z	-1.477	-.654	-2.114
Asymp. Sig. (2-tailed)	.140	.513	.035
Grouping Variable: Mobile Service Provider			

The summary of Mann – Whitney test statistics shown in table 3.4.18 indicates that the observed significance values of the variables 'Easy to switch between tariff plans', 'Variety of tariff plans', and 'Advises suitable tariff plans' are greater than 0.0167. So it can be concluded that these variables do not significantly differ between BSNL and Airtel.

3.4.3 Competitive pricing offered by mobile service providers

The variable considered for the analysis is the competitive pricing of mobile telecom service providers. The items used to measure the variable are: 'The pricing of the mobile services are better as compared to other providers', 'The offers are attractive as compared to competition mobile services' and 'The mobile services deliver the real value for money spend on it'.

Hypothesis 2.3

The competitive pricing strategies specifically 'Better pricing as compared to others', 'Better offers as compared to others' and 'Value for Money Spends' significantly differ between BSNL and private sector mobile telecom service providers in Kerala.

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of variables 'Better pricing as compared to others', 'Better

offers as compared to others' and 'Value for money spends' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variables 'Better pricing as compared to others', 'Better offers as compared to others' and 'Value for money spends' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The groups have homogeneous variances of the variables 'Better offers as compared to others' and 'Value for money spends' and heterogeneous variances of the variable 'Better pricing as compared to others'. Therefore the Kruskal-Wallis test is used to test the Hypothesis 2.3. The Mann-Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variables 'Better pricing as compared to others', 'Better offers as compared to others' and 'Value for Money Spend' of the mobile service providers Idea, BSNL, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 3.4.19.

Table 3.4.19

Mean ranking of competitive pricing offered by mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean rank		
		Better pricing as compared to others	Better offers as compared to others	Value for money spends
Idea	264	371.09	440.98	367.44
BSNL	255	537.65	403.10	541.15
Vodafone	229	412.43	444.03	406.48
Airtel	122	404.68	475.36	416.44
Total	870			

The table 3.4.20 shows the test statistic for the Kruskal-Wallis test based on competitive pricing offered by the mobile service providers, the associated degrees

of freedom and the significance. As the number of mobile service providers considered for analysis is four, the degrees of freedom will be three.

Table 3.4.20

Kruskal-Wallis test statistics based on competitive pricing offered by mobile service providers

Details	Better pricing as compared to others	Better offers as compared to others	Value for money spends
Chi-Square	71.794	8.940	84.292
df	3	3	3
Asymp. Sig.	.000	.030	.000
Grouping Variable: Mobile Service Provider			

The table 3.4.21 shows the descriptive statistics of the variables 'Better pricing as compared to others', 'Better offers as compared to others' and 'Value for money spends' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel.

Table 3.4.21

Descriptive statistics of competitive pricing offered by mobile service providers

Mobile Service Provider	N	Better pricing as compared to others'*		Better offers as compared to others*		Value for money Spends*	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Idea	264	3.31	.864	3.53	.867	3.44	.815
BSNL	255	3.92	.961	3.35	1.111	4.05	.787
Vodafone	229	3.45	.905	3.54	.808	3.57	.843
Airtel	122	3.43	.944	3.67	.876	3.61	.914
Total	870	3.54	.947	3.50	.937	3.68	.865

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Kruskal-Wallis test statistics shown in table 3.4.20 indicates that the significance value is less than 0.05 for the variables 'Better pricing as

compared to others', 'Value for money spends' and 'Better offers as compared to others'. Therefore, it can be concluded that these variables significantly differ between BSNL and private sector telecom service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 3.4.19 indicates that BSNL has significantly higher levels in the values of the variables 'Better pricing as compared to others', and 'Value for money spends'. The private sector telecom service providers have significantly higher levels in the values of the variable 'Better offers as compared to others'. The descriptive statistics of the variables given in the table 3.4.21 also agrees to these findings

Competitive pricing offered by mobile service providers: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results shows that the competitive pricing strategies specifically 'Better pricing as compared to others', 'Better offers as compared to others' and 'Value for Money Spends' significantly differ between BSNL and private sector telecom service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test has done for post hoc procedures for the Kruskal-Wallis test. As the study is focused on the comparative study of marketing strategies of private sector telecom service providers and BSNL, a concise set of comparison would be, to compare each private sector mobile service provider against BSNL. The post hoc procedures for the comparative study are:

(1) Post hoc test 1: The Idea compared to the BSNL
(2) Post hoc test 2: The Vodafone compared to the BSNL
(3) Post hoc test 3: The Airtel compared to the BSNL

As three Mann-Whitney U tests are suggested for the post hoc analysis, in order to reduce the Type I error, Bonferroni correction[14] is applied and the critical value of significance is computed as 0.0167.

[14] Andy Field. (2009). Discovering Statistics Using SPSS, (3rd ed.). Sage Publications India Pvt. Ltd., New Delhi, p. 565.

1. The Idea compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Better pricing as compared to others', 'Better offers as compared to others' and 'Value for money spends' of the mobile service providers Idea and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.4.22

Table 3.4.22

Mean ranking of competitive pricing offered by Idea and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank		
		Better pricing as compared to others	Better offers as compared to others	Value for money spends
Idea	264	211.54	271.31	208.97
BSNL	255	310.17	248.29	312.83
Total	519			

The table 3.4.23 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Better pricing as compared to others', 'Better offers as compared to others' and 'Value for money spends' pertaining to the mobile service providers Idea and BSNL.

Table 3.4.23

Mann - Whitney U test statistics based on competitive pricing offered by Idea and BSNL

Details	Better pricing as compared to others	Better offers as compared to others	Value for money spends
Mann-Whitney U	20866.500	30673.000	20189.000
Wilcoxon W	55846.500	63313.000	55169.000
Z	-7.965	-1.852	-8.790
Asymp. Sig. (2-tailed)	.000	.064	.000
Grouping Variable: Mobile Service Provider			

The summary of Mann – Whitney test statistics shown in table 3.4.23 indicates that the observed significance values of the variables 'Better pricing as compared to others', and 'Value for money spends' are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Idea and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.4.22 indicates that the mobile service provider BSNL has significantly higher levels of values of the variables, 'Better pricing as compared to others', and 'Value for money spends' than Idea. The significance value of the variable 'Better offers as compared to others' and it is greater than 0.0167. Therefore it can be concluded that 'Better offers as compared to others' doesn't significantly differ between BSNL and Idea.

2. The Vodafone compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Better pricing as compared to others', 'Better offers as compared to others' and 'Value for Money Spend' of the mobile service providers Vodafone and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.4.24.

Table 3.4.24

Mean ranking of competitive pricing offered by Vodafone and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank		
		Better pricing as compared to others	Better offers as compared to others	Value for money spends
Vodafone	229	205.21	254.60	278.20
BSNL	255	275.98	231.63	202.75
Total	484			

The table 3.4.25 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Better pricing as compared to others', 'Better offers as compared to others' and 'Value for money spends' pertaining to the mobile service providers Vodafone and BSNL.

Table 3.4.25

Mann - Whitney U test statistics based on competitive pricing offered by Vodafone and BSNL

Details	Better pricing as compared to others	Better offers as compared to others	Value for money spends
Mann-Whitney U	20659.000	26425.500	20094.000
Wilcoxon W	46994.000	59065.500	46429.000
Z	-5.969	-1.929	-6.646
Asymp. Sig. (2-tailed)	.000	.054	.000
Grouping Variable: Mobile Service Provider			

The summary of Mann – Whitney test statistics shown in table 3.4.25 indicates that the observed significance values of the variables 'Better pricing as compared to others', and 'Value for Money Spends' are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Vodafone and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.4.24 indicates that the mobile service provider BSNL has significantly higher levels of values of the variables, 'Better pricing as compared to others', and 'Value for money spends' than Vodafone. The significance value of the variable 'Better offers as compared to others' and it is greater than 0.0167. Therefore it can be concluded that 'Better offers as compared to others' doesn't significantly differ between BSNL and Vodafone.

3. The Airtel compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables 'Better pricing as compared to others', 'Better offers as compared to others' and 'Value for money spends' of the mobile service providers Airtel and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.4.26.

Table 3.4.26

Mean ranking of competitive pricing offered by Airtel and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank		
		Better pricing as compared to others	Better offers as compared to others	Value for money spends
Airtel	122	150.34	209.52	153.22
BSNL	255	207.50	179.18	206.12
Total	377			

The table 3.4.27 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Better pricing as compared to others', 'Better offers as compared to others' and 'Value for money spends' pertaining to the mobile service providers Airtel and BSNL.

Table 3.4.27

Mann - Whitney U test statistics based on competitive pricing offered by Airtel and BSNL

Details	Better pricing as compared to others	Better offers as compared to others	Value for money spends
Mann-Whitney U	10838.500	13052.000	11190.000
Wilcoxon W	18341.500	45692.000	18693.000
Z	-5.087	-2.649	-4.883
Asymp. Sig. (2-tailed)	.000	.008	.000
Grouping Variable: Mobile Service Provider			

The summary of Mann – Whitney test statistics shown in table 3.4.27 indicates that the observed significance values of the variables 'Better pricing as compared to others', 'Better offers as compared to others' and 'Value for money spends' are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Airtel and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.4.26 indicates that the mobile service provider BSNL has significantly higher levels of values of the variables 'Better pricing as compared to others' and 'Value for money spends' than Airtel. The mean raking

shows that Airtel has significantly higher level in the value of the variable 'Better offers as compared to others' than BSNL.

3.4.4 Ethical pricing practices of mobile service providers

The variable considered for the analysis is the ethical pricing practices of mobile telecom service providers. The items used to measure the variable are: 'The charging for services are transparent and there are no hidden charges', 'The service provider didn't play unethical pricing practices', and 'Deactivation of additional services, if required, can be done very easily in the mobile connection'.

Hypothesis 2.4

The ethical pricing practices specifically 'Transparent billing and no hidden charges, 'Ethical pricing practices', and 'Easiness to deactivate additional services - if required' significantly differ between BSNL and private sector telecom service providers in Kerala.

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of variables 'Transparent billing and no hidden charges, 'Ethical pricing practices', and 'Easiness to deactivate additional services - if required' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variables 'Transparent billing and no hidden charges, 'Ethical pricing practices', and 'Easiness to deactivate additional services - if required' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that the variances of the groups have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the Hypothesis 2.4. The Mann-Whitney U test is used for the non-parametric post hoc procedures.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variables 'Transparent billing and no hidden charges, 'Ethical pricing practices', and 'Easiness to deactivate additional services - if required' of the mobile service providers Idea, BSNL, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 3.4.28.

Table 3.4.28

Mean ranking of ethical pricing practices of mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean rank		
		Transparent billing and no hidden charges	Ethical pricing practices	Easiness to deactivate additional services - if required
Idea	264	325.12	289.84	385.55
BSNL	255	593.37	618.37	451.31
Vodafone	229	408.00	400.62	460.62
Airtel	122	396.02	433.94	463.38
Total	870			

The table 3.4.29 shows the test statistic for the Kruskal-Wallis test based on ethical pricing practices of the mobile service providers, the associated degrees of freedom and the significance. As the number of mobile service providers considered for analysis is four, the degrees of freedom will be three.

Table 3.4.29

Kruskal-Wallis test statistics based on ethical pricing practices of mobile service providers

Details	Transparent billing and no hidden charges	Ethical pricing practices	Easiness to deactivate additional services - if required
Chi-Square	180.388	249.901	17.828
df	3	3	3
Asymp. Sig.	.000	.000	.000
Grouping Variable: Mobile Service Provider			

The table 3.4.30 shows the descriptive statistics of the variables 'Transparent billing and no hidden charges, 'Ethical pricing practices', and 'Easiness to deactivate additional services - if required' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel.

Table 3.4.30

Descriptive statistics of ethical pricing practices of mobile service providers

Mobile Service Provider	N	Transparent billing and no hidden charges *		Ethical pricing practices *		Easiness to deactivate additional services – if required*	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Idea	264	3.13	.982	2.82	.916	3.20	.873
BSNL	255	4.20	.769	4.18	.774	3.46	.757
Vodafone	229	3.49	.814	3.30	.868	3.47	.809
Airtel	122	3.42	.978	3.44	.919	3.46	1.022
Total	870	3.58	.975	3.43	1.014	3.39	.854

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Kruskal-Wallis test statistics shown in table 3.4.29 indicates that the significance value is less than 0.05 for the variables 'Transparent billing and no hidden charges, 'Ethical pricing practices', and 'Easiness to deactivate additional services - if required'. Therefore, it can be concluded that the ethical pricing practices specifically 'Transparent billing and no hidden charges, 'Ethical pricing practices', and 'Easiness to deactivate additional services - if required' significantly differ between BSNL and private sector telecom service providers in Kerala. The value of mean ranking based on Kruskal-Wallis test given in table 3.4.28 indicates that BSNL has significantly higher level in the values of the variables 'Transparent billing and no hidden charges, and 'Ethical pricing practices'. The mean ranking of the variable 'Easiness to deactivate additional services - if required' shows comparatively low value for Idea than other telecom service providers. The descriptive statistics of the variables given in the table 3.4.30 also agrees to these findings.

Ethical pricing practices of mobile service providers: post hoc procedures for the Kruskal-Wallis test

The Kruskal-Wallis test results shows that the ethical pricing practices specifically 'Transparent billing and no hidden charges, 'Ethical pricing practices', and 'Easiness to deactivate additional services - if required' significantly differ between BSNL and private sector telecom service providers in Kerala. But it doesn't show where the difference lie. Hence Mann-Whitney U test has done for post hoc procedures for the Kruskal-Wallis test. As the study is focused on the comparative study of marketing strategies of private sector telecom service providers and BSNL, a concise set of comparison would be, to compare each private sector mobile service provider against BSNL. The post hoc procedures for the comparative study are:

(1) Post hoc test 1: The Idea compared to the BSNL
(2) Post hoc test 2: The Vodafone compared to the BSNL
(3) Post hoc test 3: The Airtel compared to the BSNL

As three Mann-Whitney U tests are suggested for the post hoc analysis, in order to reduce the Type I error, Bonferroni correction[15] is applied and the critical value of significance is computed as 0.0167.

1. The Idea compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables Transparent billing and no hidden charges, 'Ethical pricing practices', and 'Easiness to deactivate additional services - if required' of the mobile service providers Idea and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.4.31.

[15] Andy Field. (2009). Discovering Statistics Using SPSS, (3rd ed.). Sage Publications India Pvt. Ltd., New Delhi, p. 565.

Table 3.4.31

Mean ranking of ethical pricing practices of Idea and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank		
		Transparent billing and no hidden charges	Ethical pricing practices	Easiness to deactivate additional services - if required
Idea	264	184.56	168.25	239.73
BSNL	255	338.11	354.99	280.98
Total	519			

The table 3.4.32 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Transparent billing and no hidden charges, 'Ethical pricing practices', and 'Easiness to deactivate additional services - if required' pertaining to the mobile service providers Idea and BSNL.

Table 3.4.32

Mann - Whitney U test statistics based on ethical pricing practices of Idea and BSNL

Details	Transparent billing and no hidden charges	Ethical pricing practices	Easiness to deactivate additional services - if required
Mann-Whitney U	13743.000	9437.500	28310.000
Wilcoxon W	48723.000	44417.500	63290.000
Z	-12.316	-14.724	-3.368
Asymp. Sig. (2-tailed)	.000	.000	.001
Grouping Variable: Mobile Service Provider			

The summary of Mann – Whitney test statistics shown in table 3.4.32 indicates that the observed significance values of the variables 'Transparent billing and no hidden charges, 'Ethical pricing practices', and 'Easiness to deactivate additional services - if required' are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Idea and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.4.31 indicates that the mobile service provider BSNL has significantly higher levels of values for these variables than Idea.

2. The Vodafone compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables Transparent billing and no hidden charges', 'Ethical pricing practices', and 'Easiness to deactivate additional services - if required' of the mobile service providers Vodafone and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.4.33.

Table 3.4.33

Mean ranking of ethical pricing practices of Vodafone and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank		
		Transparent billing and no hidden charges	Ethical pricing practices	Easiness to deactivate additional services - if required
Vodafone	229	184.50	175.04	245.87
BSNL	255	294.58	303.08	239.47
Total	484			

The table 3.4.34 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Transparent billing and no hidden charges, 'Ethical pricing practices', and 'Easiness to deactivate additional services - if required' pertaining to the mobile service providers Vodafone and BSNL.

Table 3.4.34

Mann - Whitney U test statistics based on ethical pricing practices of Vodafone and BSNL

Details	Transparent billing and no hidden charges	Ethical pricing practices	Easiness to deactivate additional services - if required
Mann-Whitney U	15916.000	13750.000	28426.000
Wilcoxon W	42251.000	40085.000	61066.000
Z	-9.505	-10.708	-.554
Asymp. Sig. (2-tailed)	.000	.000	.579
Grouping Variable: Mobile Service Provider			

The summary of Mann – Whitney test statistics shown in table 3.4.34 indicates that the observed significance values of the variables 'Transparent billing and no hidden charges' and 'Ethical pricing practices' are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Vodafone and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.4.33 indicates that the mobile service provider BSNL has significantly higher levels of values for these variables than Vodafone. The significance values of the variable 'Easiness to deactivate additional services - if required' is greater than 0.0167. Therefore it can be concluded that 'Easiness to deactivate additional services - if required' doesn't significantly differ between BSNL and Vodafone.

3. The Airtel compared to the BSNL: Mann-Whitney U test

The summary of ranked data corresponding to the variables Transparent billing and no hidden charges', 'Ethical pricing practices', and 'Easiness to deactivate additional services - if required' of the mobile service providers Airtel and BSNL has been computed with Mann-Whitney U test. The test results are given in the table 3.4.35.

Table 3.4.35

Mean ranking of ethical pricing practices of Airtel and BSNL based on Mann-Whitney U test

Mobile Service Provider	N	Mean rank		
		Transparent billing and no hidden charges	Ethical pricing practices	Easiness to deactivate additional services - if required
Airtel	122	131.15	131.93	193.48
BSNL	255	216.68	216.30	186.86
Total	377			

The table 3.4.36 shows the test statistic for the Mann- Whitney test on the focused comparison of the variables 'Transparent billing and no hidden charges, 'Ethical pricing practices', and 'Easiness to deactivate additional services - if required' pertaining to the mobile service providers Airtel and BSNL.

Table 3.4.36

Mann - Whitney U test statistics based on ethical pricing practices of Airtel and BSNL

Details	Transparent billing and no hidden charges	Ethical pricing practices	Easiness to deactivate additional services - if required
Mann-Whitney U	8497.500	8592.500	15008.500
Wilcoxon W	16000.500	16095.500	47648.500
Z	-7.716	-7.503	-.599
Asymp. Sig. (2-tailed)	.000	.000	.549
Grouping Variable: Mobile Service Provider			

The summary of Mann – Whitney test statistics shown in table 3.4.36 indicates that the observed significance values of the variables 'Transparent billing and no hidden charges' and 'Ethical pricing practices' are less than 0.0167. Therefore these variables significantly differ between the mobile service providers Airtel and BSNL. The value of mean ranking based on Mann-Whitney test given in table 3.4.35 indicates that the mobile service provider BSNL has significantly higher levels of values for these variables than Airtel. The significance values of the variable 'Easiness to deactivate additional services - if required' is greater than 0.0167. Therefore it can be concluded that 'Easiness to deactivate additional services - if required' doesn't significantly differ between BSNL and Airtel.

3.5 Analysis of promotion strategies of BSNL and private sector mobile telecom service providers in Kerala.

Hypothesis 3

There is significant difference between the promotion strategies of BSNL and private sector mobile telecom service providers in Kerala.

Variables considered for the analysis of promotion strategies

The variables considered for the analysis of promotion strategies of mobile telecom service providers in Kerala are: effectiveness of advertisements, attractiveness of website of mobile telecom service providers, attractiveness of price reduction offers, attractiveness of free trial offers, attractiveness of free add-on SIM card offer, attractiveness of extra talk time offer, attractiveness of SMS package offer, attractiveness of internet package offer, attractiveness of call at zero balance offer for prepaid customers, attractiveness of getting the service at bill not paid status (post-paid customers) of mobile telecom service providers, attractiveness of displays and demonstrations at point of sales, attractiveness of customized offers, and the opinion of respondents about promotional phone calls of mobile telecom service providers.

The effectiveness of advertisements of the mobile service providers are measured based on the model for predictive measurements of advertising effectiveness proposed by Robert J. Lavidge and Grey A. Steiner (1961). The attractiveness of website and promotional offers are measured by a dichotomous question to verify whether the customer has visited the website of the service provider or received any offer, followed by five point Likert scale to test the attractiveness of the offer.

3.5.1 Effectiveness of advertisements of mobile telecom service providers

The effectiveness of advertisements of mobile telecom service providers is measured based on the model for predictive measurements of advertising effectiveness proposed by Robert J. Lavidge and Grey A. Steiner (1961) as cited by Philip Kotler (2009)[16] to explain the hierarchy of effects of advertisements. Referring to this model the suggested advertisements tasks are: (i) to build awareness about the products and knowledge as regards to the brand (ii) to create liking, preference and faith for the service provider (iii) to act as reminder to stimulate repeat association with the service provider and (iv) to convince customer that the decision to continue with the service provider is a right choice. Rooted in

[16] Philip Kotler, Kevin Lane Keller, Abraham Koshy and Mithileshwar Jha. (2009). Marketing Management-A South Asian Perspective, (13th ed.). Pearson Education, New Delhi, pp. 462-463.

this model following items are formulated to measure the effectiveness of advertisements of mobile telecom service providers.

1. The messages conveyed through the advertisements are highly informative.
2. The advertisements create liking, preference and faith for the service provider.
3. The advertisements act as reminder to stimulate repeat association with the service provider.
4. The advertisements convince me that my decision to continue with the service provider is a right choice.

All items are measured by Likert Scale with five anchor points, specifically Strongly Agree, Agree, Uncertain, Disagree and Strongly Disagree. Equal weightage is given for all items to compute the mean score of effectiveness of advertisements.

Hypothesis 3.1

The effectiveness of advertisements significantly differs between BSNL and private sector mobile telecom service providers in Kerala.

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of variable 'Effectiveness of advertisements' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variable 'Effectiveness of advertisements' pertaining to the mobile service providers Idea, BSNL, Vodafone and Airtel. The test results showed that the variances of the groups have homogeneous variances. Even though the groups have homogeneous variances, the data are not normally distributed. Therefore the Kruskal-Wallis test is used to test the Hypothesis 3.1.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variable 'Effectiveness of advertisements' of the mobile service providers Idea, BSNL, Vodafone and Airtel has been computed with Kruskal-Wallis test. The test results are given in the table 3.5.1.

Table 3.5.1

Mean ranking of effectiveness of advertisements of mobile service providers based on Kruskal-Wallis test

Variable	Mobile Service Provider	N	Mean Rank
Effectiveness of advertisements	Idea	264	524.91
	BSNL	255	214.66
	Vodafone	229	567.58
	Airtel	122	455.70
	Total	870	

The table 3.5.2 shows the test statistic for the Kruskal-Wallis test based on the effectiveness of advertisements of the mobile service providers, the associated degrees of freedom and the significance. As the number of mobile service providers considered for analysis is four, the degrees of freedom will be three.

Table 3.5.2

Kruskal-Wallis test statistics based on effectiveness of advertisements of mobile service providers

Details	Effectiveness of Advertisements
Chi-Square	296.558
df	3
Asymp. Sig.	.000
Grouping Variable: Mobile Service Provider	

The table 3.5.3 shows the descriptive statistics of the variable effectiveness of advertisements related to the mobile service providers Idea, BSNL, Vodafone and Airtel.

Table 3.5.3

Descriptive statistics of the variable - effectiveness of advertisements

Mobile Service Provider	Mean*	N	Std. Dev.
Idea	3.87	264	.768
BSNL	2.72	255	.743
Vodafone	4.03	229	.805
Airtel	3.65	122	.706
Total	3.54	870	.935

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Kruskal-Wallis test statistics shown in table 3.5.2 indicates that the significance value of the variable 'Effectiveness of advertisements' is less than 0.05. Therefore, it can be concluded that the effectiveness of advertisements significantly differs between BSNL and private sector telecom service providers in Kerala. The value of mean ranking based on Kruskal-Wallis test given in table 3.5.1 indicates that the most effective advertisements are from private sector telecom service providers. The rating in the effectiveness of advertisements is the highest for the Vodafone and it is followed by the service providers Idea and Airtel. The rating is the lowest for the BSNL. The descriptive statistics of the variable given in the table 3.5.3 also agrees to this finding.

3.5.2 Attractiveness of website of mobile telecom service providers

The website of service providers are one of the key elements in integrated marketing communication. But the majority of the respondents do not depend on websites of their mobile operators to get the information. The attractiveness of website is measured by a dichotomous question to verify whether the customer has visited the website, followed by five point Likert scale to test the attractiveness of the offer. The attractiveness of websites of the mobile service providers are

compared with two variables: 'Website is a dependable source of information' and 'Website is user friendly'. The percentage of respondents visited the websites of service providers and the frequency descriptive analysis of attractiveness of the websites is shown in table 3.5.4.

Table 3.5.4

The attractiveness of websites of the mobile service providers: frequency descriptive analysis

Mobile Service Provider	Visited the Website of the Service Provider		Total	Web site is a dependable source of information *		Website is user friendly*	
	Yes	No		Mean	Std. Dev.	Mean	Std. Dev.
Idea	74 (28.0%)	190 (72.0%)	264 (100%)	3.80	.776	3.59	.875
BSNL	84 (32.9%)	171 (67.1%)	255 (100%)	4.00	.836	3.82	.984
Vodafone	60 (26.2%)	169 (73.8%)	229 (100%)	3.95	.649	3.73	.733
Airtel	44 (36.1%)	78 (63.9%)	122 (100%)	4.07	.587	4.09	.520
Total	262 (30.1%)	608 (69.9%)	870 (100%)	3.94	.743	3.78	.846

* Measured on a 5-point Likert Scale, Strongly Disagree = 1, Disagree = 2, Uncertain = 3, Agree = 4, Strongly Agree = 5; Mean Value of the Scale = 3.

The respondents visited the websites of the service providers are on an average 30.1%. The values in the table show that the variations in this percentage are minimal between the telecom service providers. The mean value and standard deviation of the variables 'Web site is a dependable source of information' and 'Website is user friendly' show that the websites of all the service providers are fairly attractive. The service provider Airtel has comparatively more attractive website than other service providers.

3.5.3 Attractiveness of price reduction offers of mobile telecom service providers

Occasionally mobile telecom service providers offer rebates or price reduction to their customers. The attractiveness of price reduction offers is measured by a dichotomous question to verify whether the customer has received the offer, followed by five point Likert scale to test the attractiveness of the offer. The frequency descriptive analysis of attractiveness of price reduction offers of mobile telecom service providers are given in table 3.5.5.

Table 3.5.5

Attractiveness of price reduction offers of mobile telecom service providers: frequency descriptive analysis

Mobile Service Provider	Rebate / Price reduction offer received		Total	Rebate / Price reduction offers are attractive *	
	Yes	No		Mean	Std. Dev.
Idea	134 (50.8%)	130 (49.2%)	264 (100%)	3.73	.695
BSNL	90 (35.3%)	165 (64.7%)	255 (100%)	3.97	.726
Vodafone	125 (54.6%)	104 (45.4%)	229 (100%)	3.67	.738
Airtel	57 (46.7%)	65 (53.3%)	122 (100%)	4.18	.468
Total	406 (46.7%)	464 (53.3%)	870 (100%)	3.83	.710

* Measured on a 5-point Likert Scale, Strongly Disagree = 1, Disagree = 2, Uncertain = 3, Agree = 4, Strongly Agree = 5; Mean Value of the Scale = 3.

The respondents received price reduction offers from the service providers are on an average 46.7%. It can be seen that private telecom service providers especially Vodafone and Idea are keen in offering and communicating price reductions to customers than BSNL. The price reduction offer is generally attractive among the customers. The most attractive offers are from Airtel followed by BSNL.

Although the price reduction offers of BSNL are attractive, it is not properly communicated to the customers.

3.5.4 Attractiveness of free trial offers of mobile telecom service providers

The free trail offer is a marketing strategy to get existing customers familiarized about the newly introduced services. The free trail for a specific period is an opportunity for the service providers to project the benefits of the services to the customers. If the free trail is successful, the customers became regular subscribers of the services they experienced. The attractiveness of free trial offers is measured by a dichotomous question to verify whether the customer has received the offer, followed by five point Likert scale to test the attractiveness of the offer. The frequency descriptive analysis of attractiveness of free trial offers of mobile telecom service providers are given in table 3.5.6.

Table 3.5.6

Attractiveness of free trial offers of mobile telecom service providers: frequency descriptive analysis

Mobile Service Provider	Free trial offer received		Total	Free trial offers are attractive*	
	Yes	No		Mean	Std. Dev.
Idea	69 (26.1%)	195 (73.9%)	264 (100%)	3.54	.833
BSNL	33 (12.9%)	222 (87.1%)	255 (100%)	4.06	.496
Vodafone	64 (27.9%)	165 (72.1%)	229 (100%)	3.73	.782
Airtel	31 (25.4%)	91 (74.6%)	122 (100%)	4.06	.772
Total	197 (22.6%)	673 (77.4%)	870 (100%)	3.77	.785

* Measured on a 5-point Likert Scale, Strongly Disagree = 1, Disagree = 2, Uncertain = 3, Agree = 4, Strongly Agree = 5; Mean Value of the Scale = 3.

It can be observed that among private sector telecom service providers more than 25% of respondents received free trail offers from their service providers. For

BSNL it is only 12.9%. The free trail offers of all the service providers are fairly attractive. The mean scores show that the most attractive free trail offers are from Airtel and BSNL. From the data it can be inferred that the free trail offers of BSNL are not reaching majority of their customers.

3.5.5 Attractiveness of free add-on SIM card offer of mobile telecom service providers

In the market development stage the telecom service providers experimented free add-on SIM (Subscriber Identity Module) card offer to the customers. This is as equivalent as a new connection, helped operators to widen their reach through existing customers. The attractiveness of free add-on SIM card offers is measured by a dichotomous question to verify whether the customer has received the offer, followed by five point Likert scale to test the attractiveness of the offer. The frequency descriptive analysis shown in table 3.5.7 indicates that BSNL was successful in implementing free add-on SIM card offer.

Table 3.5.7

Attractiveness of free add-on SIM card offer of mobile telecom service providers: frequency descriptive analysis

Mobile Service Provider	Free add on SIM offer received		Total	Free add-on SIM offer is attractive*	
	Yes	No		Mean	Std. Dev.
Idea	23 (8.7%)	241 (91.3%)	264 (100%)	3.78	.600
BSNL	61 (23.9%)	194 (76.1%)	255 (100%)	4.08	.458
Vodafone	21 (9.2%)	208 (90.8%)	229 (100%)	3.86	.573
Airtel	14 (11.5%)	108 (88.5%)	122 (100%)	3.93	.730
Total	119 (13.7%)	751 (86.3%)	870 (100%)	3.97	.551

* Measured on a 5-point Likert Scale, Strongly Disagree = 1, Disagree = 2, Uncertain = 3, Agree = 4, Strongly Agree = 5; Mean Value of the Scale = 3.

3.5.6 Attractiveness of extra talk time offer of mobile telecom service providers

The extra talk time offer is usually practiced by the service providers in festive seasons. The additional talk time the customers received free of cost especially in festive seasons stimulated them to talk more. The 'talk more' nature may continue even after the withdrawal of the offer. Ultimately this scheme will be beneficial for the telecom companies in long run. The attractiveness of extra talk time offer is measured by a dichotomous question to verify whether the customer has received the offer, followed by five point Likert scale to test the attractiveness of the offer. The BSNL and all the private telecom service providers equally successful in promoting the extra talk time offer. The offer is fairly attractive for all the service providers. In the opinion of respondents the most attractive extra talk time offers are from Airtel and BSNL. The frequency descriptive analysis of extra talk time offer of mobile service providers are shown in table 3.5.8.

Table 3.5.8

Attractiveness of extra talk time offer of mobile telecom service providers: frequency descriptive analysis

Mobile Service Provider	Extra talk time offer received		Total	Extra talk time offer is attractive*	
	Yes	No		Mean	Std. Dev.
Idea	170 (64.4%)	94 (35.6%)	264 (100%)	3.87	.667
BSNL	161 (63.1%)	94 (36.9%)	255 (100%)	4.06	.451
Vodafone	145 (63.3%)	84 (36.7%)	229 (100%)	3.72	.788
Airtel	81 (66.4%)	41 (33.6%)	122 (100%)	4.12	.509
Total	557 (64.0%)	313 (36.0%)	870 (100%)	3.92	.644

* Measured on a 5-point Likert Scale, Strongly Disagree = 1, Disagree = 2, Uncertain = 3, Agree = 4, Strongly Agree = 5; Mean Value of the Scale = 3.

3.5.7 Attractiveness of SMS package offer of mobile telecom service providers

The SMS package offers are mainly targeted for youngsters especially students. The SMS communication is more popular among this segment due to its peculiar characteristics and relatively low pricing as compared to phone calls. The attractiveness of SMS package offers is measured by a dichotomous question to verify whether the customer has received the offer, followed by five point Likert scale to test the attractiveness of the offer. The frequency descriptive analysis of SMS package offer is shown in table 3.5.9.

Table 3.5.9

Attractiveness of SMS package offer of mobile telecom service providers: frequency descriptive analysis

Mobile Service Provider	SMS package offer received		Total	SMS package offer is attractive	
	Yes	No		Mean	Std. Dev.
Idea	74 (28.0%)	190 (72.0%)	264 (100%)	3.70	.591
BSNL	46 (18.0%)	209 (82.0%)	255 (100%)	4.09	.463
Vodafone	77 (33.6%)	152 (66.4%)	229 (100%)	3.73	.737
Airtel	50 (41.0%)	72 (59.0%)	122 (100%)	4.04	.605
Total	247 (28.4%)	623 (71.6%)	870 (100%)	3.85	.642

* Measured on a 5-point Likert Scale, Strongly Disagree = 1, Disagree = 2, Uncertain = 3, Agree = 4, Strongly Agree = 5; Mean Value of the Scale = 3.

The SMS package offers of all the service providers are fairly attractive. The offers of Airtel and BSNL are more attractive than other service providers. Although the offers of BSNL are comparatively more attractive, it doesn't reach the customers.

3.5.8 Attractiveness of internet package offer of mobile telecom service providers

The internet savvy customers always search for attractive internet packages. The youths and the practitioners of m-commerce are belonging to this segment. In order to attract this segment the service providers are offering various internet packages. The attractiveness of internet package offers is measured by a dichotomous question to verify whether the customer has received the offer, followed by five point Likert scale to test the attractiveness of the offer. The frequency descriptive analysis of internet package offer is shown in table 3.5.10

Table 3.5.10

Attractiveness of internet package offer of mobile telecom service providers: frequency descriptive analysis

Mobile Service Provider	Internet package offer received		Total	Internet package offer is attractive*	
	Yes	No		Mean	Std. Dev.
Idea	109 (41.3%)	155 (58.7%)	264 (100%)	3.72	.780
BSNL	61 (23.9%)	194 (76.1%)	255 (100%)	3.82	.742
Vodafone	93 (40.6%)	136 (59.4%)	229 (100%)	3.78	.883
Airtel	69 (56.6%)	53 (43.4%)	122 (100%)	4.32	.866
Total	332 (38.2%)	538 (61.8%)	870 (100%)	3.88	.849

* Measured on a 5-point Likert Scale, Strongly Disagree = 1, Disagree = 2, Uncertain = 3, Agree = 4, Strongly Agree = 5; Mean Value of the Scale = 3.

The internet package offers of all the service providers are moderately attractive. The most attractive offers are from Airtel. The Airtel is forefront in designing and communicating attractive internet packages for the customers than its rivals. Although the internet packages of BSNL are attractive, BSNL has an inadequacy in communicating the same to the customers.

3.5.9 Attractiveness of *call at zero balance* offer for prepaid customers of mobile telecom service providers

The *call at zero balance* offer allows customers to make calls even at zero balance for a limited amount. In BSNL the customers can make calls up to Rs 10/- at zero balance and the facility is offered free of cost. Even though Idea and Vodafone also have this offer, the customers have to pay facility activation charges. The activation charges are varying from time to time. The amount in debit of the customer will be adjusted in the subsequent recharge. The Airtel doesn't have such an offer. The attractiveness of *call at zero balance* offer for prepaid customers is measured by a dichotomous question to verify whether the customer has received the offer, followed by five point Likert scale to test the attractiveness of the offer. The frequency descriptive analysis of *call at zero balance* offer is given in table 3.5.11.

Table 3.5.11

Attractiveness of *call at zero balance* offer of mobile telecom service providers: frequency descriptive analysis

Mobile Service Provider	*Call at zero balance* offer (For prepaid customers)		Total	*Call at zero balance* offers is attractive (For prepaid customers)*	
	Yes	No		Mean	Std. Dev.
Idea	106 (46.3%)	123 53.7%)	229 (100%)	2.92	.953
BSNL	177 (77.0%)	53 23.0%)	230 (100%)	4.59	.504
Vodafone	114 (57.0%)	86 43.0%)	200 (100%)	3.30	.931
Airtel	0 (0%)	107 (100%)	107 (100%)	0	0
Total	397 (51.8%)	369 48.2%)	766 (100%)	3.78	1.077

* Measured on a 5-point Likert Scale, Strongly Disagree = 1, Disagree = 2, Uncertain = 3, Agree = 4, Strongly Agree = 5; Mean Value of the Scale = 3.

It can be observed that the offer is quite popular among BSNL customers and it is highly attractive. The offer is moderately attractive for Vodafone respondents and comparatively less attractive for Idea respondents.

3.5.10 Attractiveness of getting the service at *bill not paid status* of post-paid customers of mobile telecom service providers

The post-paid customers are considered as the premium segment as they are high paying group and very less in numbers (approximately 3% of mobile customer base)[17] as compared to prepaid customers. As part of special care to this premium segment the private telecom service provider Idea extends continued service to almost all of their post-paid customers even at non-payment of bills due to delay or oversight. The service provider Airtel and Vodafone extend this facility only to their selected post-paid customers. The public sector provider BSNL doesn't practice this strategy. The attractiveness of getting the service at *bill not paid* status of post-paid customers of mobile telecom service providers is measured by a dichotomous question to verify whether the customer has received the offer, followed by five point Likert scale to test the attractiveness of the offer. The frequency descriptive analysis of the offer of getting the service at *bill not paid* status (post-paid customers) of mobile telecom service providers is shown in table 3.5.12.

[17] The report on Indian Telecom Services Performance Indicators, March 2013. Telecom Regulatory Authority of India, p. 37.

Table 3.5.12

Attractiveness of getting the service at *bill not paid* status (post-paid customers) of mobile telecom service providers: frequency descriptive analysis

Mobile Service Provider	Getting the service at *bill not paid status* (post-paid customers)		Total	Getting the service at *bill not paid status* is attractive*	
	Yes	No		Mean	Std. Dev.
Idea	32 (91.4%)	3 (8.6%)	35 (100%)	4.25	.508
BSNL	0 (0%)	25 (100%)	25 (100%)	0	0
Vodafone	7 (24.1%)	22 (75.9%)	29 (100%)	4.00	.000
Airtel	7 (46.7%)	8 (53.3%)	15 (100%)	4.14	.378
Total	46 (44.2%)	58 (55.8%)	104 (100%)	4.20	.453

* Measured on a 5-point Likert Scale, Strongly Disagree = 1, Disagree = 2, Uncertain = 3, Agree = 4, Strongly Agree = 5; Mean Value of the Scale = 3.

The customers found this facility highly attractive. The rating of attractiveness of this facility is the highest for the telecom service provider Idea and it is followed by the Airtel.

3.5.11 Attractiveness of displays and demonstrations at point of sales of mobile telecom service providers

The displays and demonstrations at point of sales are the invitation to the customers to avail the services. The newly introduced value added services and third generation mobile telecom services definitely require demonstrations before the prospects. It serves the purpose of customer training and popularity about the services being offered by the service provider. The attractiveness of displays and demonstrations at point of sales of mobile telecom service providers is measured by a dichotomous question to verify whether the customer has listened to them, followed by five point Likert scale to test the attractiveness of the displays and demonstrations.

The frequency descriptive analysis of attractiveness of displays and demonstrations at point of sales of mobile telecom service providers is shown in table 3.5.13.

Table 3.5.13

Attractiveness of displays and demonstrations at point of sales of mobile telecom service providers: frequency descriptive analysis

Mobile Service Provider	Attracted to displays and demonstrations at point of sales		Total	Displays and demonstrations at point of sales are attractive*	
	Yes	No		Mean	Std. Dev.
Idea	53 (20.1%)	211 (79.9%)	264 (100%)	3.77	.577
BSNL	25 (9.8%)	230 (90.2%)	255 (100%)	3.88	.600
Vodafone	63 (27.5%)	166 (72.5%)	229 (100%)	3.83	.555
Airtel	25 (20.5%)	97 (79.5%)	122 (100%)	4.12	.440
Total	166 (19.1%)	704 (80.9%)	870 (100%)	3.86	.560

* Measured on a 5-point Likert Scale, Strongly Disagree = 1, Disagree = 2, Uncertain = 3, Agree = 4, Strongly Agree = 5; Mean Value of the Scale = 3.

The private sector service providers are forefront in promoting the services through POS (Point of Sales) displays and demonstrations than BSNL. Although the POS displays and demonstrations of all the above service providers are attractive, the most attractive among them are from Airtel.

3.5.12 Attractiveness of customized offers of mobile telecom service providers

The customization of offers at individual customer level is relatively a new trend in mobile telecom services marketing. The private telecom service providers are extremely successful in this promotional strategy. The attractiveness of customized offers of mobile telecom service providers is measured by a dichotomous question to verify whether the customer has received the offer, followed by five point Likert scale to test the attractiveness of the offer. The frequency descriptive analysis of customized offers of service providers are shown in table 3.5.14.

Table 3.5.14

Attractiveness of customized offers of mobile telecom service providers: frequency descriptive analysis

Mobile Service Provider	Customized offers received		Total	Customized offers are attractive*	
	Yes	No		Mean	Std. Dev.
Idea	190 (72.0%)	74 (28.0%)	264 (100%)	3.88	.871
BSNL	0 (0%)	255 (100%)	255 (100%)	0	0
Vodafone	171 (74.7%)	58 (25.3%)	229 (100%)	3.99	.861
Airtel	81 (66.4%)	41 (33.6%)	122 (100%)	4.26	.703
Total	442 (50.8%)	428 (49.2%)	870 (100%)	3.99	.848

* Measured on a 5-point Likert Scale, Strongly Disagree = 1, Disagree = 2, Uncertain = 3, Agree = 4, Strongly Agree = 5; Mean Value of the Scale = 3.

The private service providers are so aggressive in promoting their services through customization. It can be seen that 74.7% of Vodafone respondents, 72% of Idea respondents and 66.4% of Airtel respondents are received customized offers from their service providers. Irrespective of the service providers, the respondents who received customized offers opined that customized offers are highly attractive. The most attractive offers are from the service provider Airtel. The BSNL doesn't practice such a promotional strategy.

3.5.13 Opinion of respondents about the promotional phone calls of mobile telecom service providers

The telecom service providers often call the customers and detailed about various promotional offers, value added services, its' advantages and benefits. Most often the recipients are not in a mood to respond to these marketing calls. Even though the customers can deactivate the unsolicited calls and messages, majority of the customers do not practice it. The opinion of respondents about the promotional phone calls of mobile telecom service providers is assessed by a dichotomous

question to verify whether the customer has received such calls, followed by five point Likert scale to test the convenience of customers to receive such calls. The frequency descriptive analysis of opinion of respondents about promotional phone calls is given in the table 3.5.15.

Table 3.5.15

Opinion of respondents about promotional phone calls of mobile telecom service providers: frequency descriptive analysis

Mobile Service Provider	Promotional calls received		Total	Promotional calls are inconvenient*	
	Yes	No		Mean	Std. Dev.
Idea	212 (80.3%)	52 (19.7%)	264 (100%)	2.04	.808
BSNL	20 (7.8%)	235 (92.2%)	255 (100%)	2.35	.671
Vodafone	161 (70.3%)	68 (29.7%)	229 (100%)	2.11	.747
Airtel	92 (75.4%)	30 (24.6%)	122 (100%)	2.15	.740
Total	485 (55.7%)	385 (44.3%)	870 (100%)	2.09	.771

* Measured on a 5-point Likert Scale, Strongly Agree =1, Agree = 2, Uncertain = 3, Disagree = 4, Strongly Disagree = 5; Mean Value of the Scale = 3.

The private service providers are so aggressive in promoting the services through phone calls. It can be seen that Idea is highly aggressive in this promotional activity. The BSNL is reluctant to make promotional calls to the customer. While 80.3% of Idea respondents received promotional calls, the corresponding BSNL proportion is only 7.8%. The mean score values shows that the customers do not like this promotional activity of telecom service providers in general.

3.6 The effect of service related factors on customer satisfaction and customer loyalty of customers of mobile telecommunication services

The major service related factors which directly affect customer satisfaction of customers of mobile telecom services are service benefits, customer support services, quality of service, competitive pricing, tariff variety and unethical practices of the mobile telecom service providers.

The service benefits are the basic core service benefits measured by the items voice clarity, geographical network coverage, and easiness to get connected to the network. The customer support services comprises of easiness to get new mobile connection, availability of recharge facility at convenient locations and retailer support for the prepaid customers, convenience of payment of post-paid bills and special care for the post-paid customers, easiness to activate additional services, easiness to deactivate additional services - if required, easiness to access customer care helpline, easiness to get the right customer care person on the phone and ability to solve problems at customer care touch points.

The service quality of mobile phone services are measured by the 22-item SERVQUAL scale developed by Parasuraman A. et al. (1991)[18]. The competitive pricing is measured by using the items 'Better pricing as compared to others', 'Better offers as compared to others' and 'Value for money spends'. The tariff variety is measured by the items 'Variety of tariff plans', 'Easiness to switch between tariff plans', 'Convenient recharge options (for prepaid customers)', and 'Advise suitable tariff plans'. The ethical pricing practices are assessed by the items 'Transparent billing and no hidden charges, 'Ethical pricing practices', and 'Easiness to deactivate additional services - if required'.

The items identified to measure the variable customer satisfaction of customers of mobile telecom services are: really satisfied with my service provider, service provider is competent enough to fulfill the expectations and choice to associate with the service provider is a wise decision.

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[18] Parasuraman A, Valarie A. Zeithaml, and Leonard L. Berry. (1991). Refinement and Reassessment of The SERVQUAL Scale. Journal of Retailing, Volume 67, Number 4. Elsevier Science Publishing Company Inc., pp. 420-450.

All items of the variables are measured by using Likert Scale with five anchor points, specifically Strongly Agree, Agree, Uncertain, Disagree and Strongly Disagree. Equal weightage is given for all items to compute the mean value of the respective variables.

Hypothesis 4

There is significant relationship between the service related factors specifically service benefits, customer support services, quality of service, competitive pricing, tariff variety and unethical practices in mobile telecom services sector and customer satisfaction.

Testing of hypothesis: Logistic regression analysis

The logistic regression analysis was performed to find out the predictors of customer satisfaction. The customer satisfaction is taken as the dependent variable. The independent variables taken are service benefits, customer support services, quality of service, competitive pricing, tariff variety and unethical practices of the mobile telecom service providers. In order to identify the effect of demographic characteristics of the respondents on customer satisfaction, the variables age, education and income are also included as independent variables in the logistic regression analysis. The test results are presented in the table 3.6.1.

Table 3.6.1

The results of logistic regression analysis on the predictors of customer satisfaction of mobile telecom services

Variables	Odds Ratio	95% CI*	P value
Age group (in years)			
<30	Reference	0.75-1.43	0.832
>=30	1.04		
Education			
Below graduation	Reference	0.71-1.56	0.802
Graduation and above	1.05		
Income			
Low	Reference	0.96-2.11	0.072
High	1.42		
Service Benefits			
Low	Reference	2.15-4.10	0.000
High	2.97		
Customer Support Services			0.000
Low	Reference	1.42-2.84	
High	2.01		
Quality of Service			
Low	Reference	2.17-4.34	0.000
High	3.07		
Competitive pricing			
Low	Reference	2.70-5.39	0.000
High	3.82		
Tariff variety			
Low	Reference	0.89-1.80	0.184
High	1.27		
Unethical practices			
High	Reference	1.88-3.85	0.000
Low	2.68		

*CI: Confidence Interval.

The service benefits, customer support services, quality of service, competitive pricing, and unethical practices are significantly associated with customer satisfaction. The service related factor tariff variety and the demographic

variables of respondents' age, education and income are not significantly associated with customer satisfaction.

The delivery of high level of service benefits by the mobile service providers to the customers was found to be three times higher chance to have better customer satisfaction compared to the low level delivery of service benefits. The customer satisfaction was found to be two times higher for high level of customer support services compared to the low level of customer support services. The high level of quality of service contributes to three times more customer satisfaction than that of low level of quality of service. The customer satisfaction was 3.8 times higher for high level of competitive pricing compared to its low level. The low level of unethical practice was found have three times higher chance to generate better customer satisfaction as compared to high level of unethical practices of mobile telecom service providers.

3.6.1 Customer Satisfaction and customer loyalty of mobile telecom services

The customer satisfaction of customers of mobile telecom services are measured with three items. The items are: really satisfied with my service provider, service provider is competent enough to fulfill the expectations, and choice to associate with the service provider is a wise decision. The customer loyalty is also measured by three items. The items used to measure the customer loyalty are: strong intention to remain as a customer of the service provider, would recommend the services of the mobile service provider to friends / colleagues, and the emotional attachment with my service provider. All items are measured by Likert Scale with five anchor points, specifically Strongly Agree, Agree, Uncertain, Disagree and Strongly Disagree. Equal weightage is given for all items to compute the mean value of customer satisfaction and customer loyalty.

Hypothesis 4.1

There is significant relationship between customer satisfaction and customer loyalty among the customers of mobile telecom services.

Testing of hypothesis: Correlation analysis

The correlation analysis is performed to identify the extent to which two or more things are related to one another. The correlation coefficient varies from -1.0 to +1.0. The value of -1.0 indicates a perfect negative correlation and +1.0 indicates a perfect positive correlation. A correlation coefficient zero means there is no relationship between the variables. As the distribution of the variables customer satisfaction and customer loyalty are significantly non normal, the non-parametric correlation analysis, Spearman's rho is used is ascertain the relationship between the variables. The test results are shown in table 3.6.2.

Table 3.6.2

Customer satisfaction and customer loyalty of mobile telecom services: correlation analysis

Correlations - Spearman's rho			
Details		**Customer satisfaction**	**Customer loyalty**
Customer satisfaction	Correlation Coefficient	1.000	.773**
	Sig. (2-tailed)	.	.000
	N	1080	1080
Customer loyalty	Correlation Coefficient	.773**	1.000
	Sig. (2-tailed)	.000	.
	N	1080	1080
**. Correlation is significant at the 0.01 level (2-tailed).			

The test results indicate that the correlation is significant and the customer satisfaction of customers of mobile telecom services has high positive correlation (correlation coefficient 0.773) with customer loyalty.

3.7 Third generation (3G) mobile telecommunication services: Analysis of marketing strategies of BSNL and private sector mobile telecom service providers in Kerala

In the comparative study of marketing strategies related to the third generation (3G) mobile telecommunication services in Kerala, the major 3G mobile

telecom service providers: Idea, BSNL, Vodafone, Airtel and Tata Docomo are primarily considered. The mobile subscriber base in Kerala as on March 2013 is 306.89 lakhs. More than 80% of market share of mobile telecom services in Kerala are maintained by the service providers Idea (25.81 %), BSNL (25.17%), Vodafone (20.21%) and Airtel (11.41%). These service providers uphold first, second, third and fourth positions respectively in the mobile telecom services market in Kerala[19]. The Tata Docomo shares a significant role in 3G mobile telecom services sector in Kerala along with these prominent players. In total of 1080 respondents in the survey, 254 of them are customers of 3G mobile telecom services. The distribution of most preferred 3G service providers of sample respondents is given in the table 3.7.1. It can be seen that 90% of 3G users among the respondents belonging to the service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo.

Table 3.7.1

Distribution of most preferred 3G mobile service providers of sample respondents

Mobile Service Provider	Frequency	Percent	Cumulative percent
Idea	61	24	24
BSNL	50	19.7	43.7
Vodafone	41	16.1	59.8
Airtel	34	13.4	73.2
Tata Docomo	42	16.5	89.7
Reliance	11	4.3	94
Aircel	7	2.8	96.8
MTS	8	3.1	100
Total	254	100	

Source: Primary Survey.

Hypothesis 5

There is significant difference between the marketing strategies related to the third generation (3G) mobile telecommunication services of BSNL and private sector mobile telecom service providers in Kerala.

[19] Press releases on subscriber data, March 2013. Telecom Regulatory Authority of India. www.trai.gov.in

Variables considered for the analysis

The variables considered for the analysis of marketing strategies related to the third generation (3G) mobile telecommunication services of mobile telecom service providers in Kerala are: basic service benefits of 3G mobile telecom services, quality of service, pricing strategies and promotion strategies.

The basic service benefits of 3G mobile telecom services are measured by the items easiness to get connected, mobile 3G network coverage, easiness of handset settings, speed of downloading, 3G roaming facility and service support. The quality of service is measured based on the five distinct dimensions of quality of service specifically tangibility, reliability, responsiveness, assurance and empathy. The items set to measure the variable quality of service are: **'**Modern facilities for customers', 'Services are dependable', 'Ready to respond to the customer needs', 'Employees are knowledgeable and polite' and 'Understand the needs and give personal attention to them'. The pricing strategies are measured by the items: **'**Variety of tariff plans', 'Transparent billing', 'Value for money' and 'Better pricing'. The promotion strategies of 3G mobile service providers are studied based on three important variables specifically attractiveness of 3G price reduction offers, attractiveness of 3G free trial offer and attractiveness of displays and demonstrations at point of sales.

All items of the variables are measured by Likert Scale with five anchor points, specifically Strongly Agree, Agree, Uncertain, Disagree and Strongly Disagree.

All the variables considered for the analysis of marketing strategies related to the third generation (3G) mobile telecommunication services of mobile telecom service providers are separately tested with following hypotheses.

3.7.1 Basic service benefits of 3G mobile telecom services

The variable considered for the analysis is basic service benefits of 3G mobile telecom services. The items used to measure the variable are: 'It is very easy to get connected to the 3G mobile telecom services', 'The network provides good geographical coverage for 3G mobile telecom services', 'The handset settings for

the mobile internet is really user-friendly', 'The speed of downloading is very high', 'The Roaming facility for 3G mobile telecom services is excellent', and 'The service provider extends excellent service support for 3G mobile telecom services'.

Hypothesis 5.1

The basic service benefits of 3G mobile telecom services specifically easiness to get connected, mobile 3G network coverage, easiness of handset settings, speed of downloading, 3G roaming facility and service support significantly differ between BSNL and private sector telecom service providers in Kerala.

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of variables specifically **'**Easiness to get connected', 'mobile 3G network coverage', 'Easiness of handset settings', 'Speed of downloading', '3G roaming facility' and 'Service support' pertaining to the mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo. The test results showed that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variables **'**Easiness to get connected', 'mobile 3G network coverage', 'Easiness of handset settings', 'Speed of downloading', '3G roaming facility' and 'Service support' pertaining to the mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo. The test results showed that the variances of the groups have homogeneous variances. Even though the groups have homogeneous variances, as the data are not normally distributed, the Kruskal-Wallis test is used to test the Hypothesis 5.1.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variables 'Easiness to get connected', 'mobile 3G network coverage', 'Easiness of handset settings', 'Speed of downloading', '3G roaming facility' and 'Service support' of the mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo has been computed with Kruskal-Wallis test. The test results are given in the table 3.7.2.

Table 3.7.2

Mean ranking of basic benefits delivered by 3G mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean rank					
		Easy to get connected to the 3G mobile network	Excellent Geographical 3G Network Coverage	Mobile 3G handset settings are easy	Mobile 3G downloading speed high	Mobile 3G Roaming facility is excellent	Mobile 3G service support is excellent
Idea	61	115.34	128.49	109.19	114.97	113.84	129.53
BSNL	50	94.63	116.81	95.25	102.39	120.61	83.75
Vodafone	41	124.71	134.41	131.66	120.60	131.23	120.60
Airtel	34	118.38	127.76	122.15	113.21	124.81	127.07
Tata Docomo	42	123.83	61.25	122.19	123.33	83.51	113.14
Total	228						

The table 3.7.3 shows the test statistic for the Kruskal-Wallis test based on basic benefits delivered by the 3G mobile service providers, the associated degrees of freedom and the significance. As the number of mobile service providers considered for analysis is five, the degrees of freedom will be four.

Table 3.7.3

Kruskal-Wallis test statistics based on basic benefits delivered by 3G mobile service providers

Details	Easy to get connected to the 3G mobile network	Excellent Geographical 3G Network Coverage	Mobile 3G handset settings are easy	Mobile 3G downloading speed high	Mobile 3G Roaming facility is excellent	Mobile 3G service support is excellent
Chi-Square	8.376	38.442	10.926	3.488	14.692	19.404
df	4	4	4	4	4	4
Asymp. Sig.	.079	.000	.027	.480	.005	.001
Grouping variable: Mobile 3G service provider						

The descriptive statistics of the variables 'Easy to get connected to the 3G mobile network', 'Excellent geographical 3G network coverage', and 'Mobile 3G handset settings are easy' is shown in the table 3.7.4 and descriptive statistics of the variables 'Mobile 3G downloading speed high', 'Mobile 3G roaming facility is excellent' and 'Mobile 3G handset settings are easy' is shown in the table 3.7.5.

Table 3.7.4

Descriptive statistics of basic benefits delivered by 3G mobile service providers

Mobile Service Provider	N	Easy to get connected to the 3G mobile network*		Excellent geographical 3G network coverage*		Mobile 3G handset settings are easy*	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Idea	61	4.18	.785	3.64	1.065	4.18	.719
BSNL	50	3.90	.886	3.44	1.053	3.92	.966
Vodafone	41	4.34	.575	3.76	.860	4.46	.505
Airtel	34	4.21	.808	3.62	1.181	4.35	.597
Tata Docomo	42	4.33	.570	2.48	.804	4.36	.577
Total	228	4.18	.756	3.40	1.092	4.23	.729

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

Table 3.7.5

Descriptive statistics of basic benefits delivered by 3G mobile service providers

Mobile Service Provider	N	Mobile 3G downloading speed high*		Mobile 3G roaming facility is excellent*		Mobile 3G service support is excellent*	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Idea	61	3.92	.936	3.43	.921	4.11	.819
BSNL	50	3.72	1.031	3.50	.974	3.46	.930
Vodafone	41	4.05	.773	3.63	.942	3.93	.985
Airtel	34	3.88	.977	3.56	.960	4.09	.753
Tata Docomo	42	4.07	.778	2.98	.780	3.95	.623
Total	228	3.92	.911	3.42	.937	3.90	.865

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Kruskal-Wallis test statistics shown in table 3.7.3 indicates that the significance value is less than 0.05 for the variables 'Excellent Geographical 3G Network Coverage', 'Mobile 3G handset settings are easy', 'Mobile 3G Roaming facility is excellent', and 'Mobile 3G service support is excellent'. Therefore, it can be concluded these variables significantly differ between BSNL and private sector telecom service providers in Kerala. The significance value of the Kruskal-Wallis test is more than 0.05 for the variables 'Easy to get connected to the 3G mobile network', and 'Mobile 3G downloading speed high'. Therefore, it can be concluded these variables do not significantly differ between BSNL and private sector telecom service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 3.7.2 and indicates that Idea, BSNL, Vodafone and Airtel have significantly higher levels in the value of the variable 'Excellent Geographical 3G Network Coverage'. The descriptive statistics of the variable 'Excellent Geographical 3G Network Coverage' given in the table 3.7.4 also indicate comparatively high value of mean score for these telecom service providers. The ranking value, mean score and standard deviation shows that Vodafone is the best performer in respect of 3G geographical network coverage. The value of mean ranking of the variable 'Excellent Geographical 3G Network Coverage' is the lowest for the service provider Tata Docomo.

The value of mean ranking also indicates that, Vodafone, Tata Docomo and Airtel have significantly higher level in the value of the variable 'Mobile 3G handset settings are easy' than the service providers Idea and BSNL. The descriptive statistics of the variable 'Mobile 3G handset settings are easy' given in the table 3.7.4 also agrees to this findings. The ranking value, mean score and standard deviation shows that Vodafone is the best in offering easy 3G handset setting for the customers.

The value of mean ranking based on Kruskal-Wallis also indicates that Idea, BSNL, Vodafone and Airtel have significantly higher level in the value of the variable 'Mobile 3G Roaming facility is excellent'. The descriptive statistics of the variable 'Mobile 3G Roaming facility is excellent' given in the table 3.7.5 also

indicate comparatively high value of mean score for these telecom service providers. The ranking value, mean score and standard deviation shows that Vodafone is the best performer with respect to 3G roaming facility. The value of the variable 'Mobile 3G roaming facility is excellent' is the lowest for the service provider Tata Docomo.

The value of mean ranking based on Kruskal-Wallis test indicates that, Idea, Vodafone, Tata Docomo and Airtel have significantly higher level in the value of the variable 'Mobile 3G service support is excellent'. The descriptive statistics of the variable 'Mobile 3G service support is excellent' given in the table 3.7.5 also indicate comparatively high value of mean score for these telecom service providers. The ranking value, mean score and standard deviation shows that Idea and Airtel are at the top performers in providing excellent service support to their mobile 3G the customers. The value of the variable 'Mobile 3G service support is excellent' is the lowest for the service provider BSNL.

3.7.2 Quality of service of 3G mobile telecom service providers

The variable considered for the analysis is quality of service of 3G mobile telecom services. The items used to measure the variable are: 'The service provider has modern Facilities for the customers', 'The 3G mobile telecom services are dependable', 'The service provider responds to the customer needs on time', 'The employees are knowledgeable and polite to the customers', 'The employees of service provider do understand the needs of their customers and give personal attention to them'.

Hypothesis 5.2

The quality of service of 3G Mobile Services specifically **'**Modern facilities for customers', 'Services are dependable', 'Ready to respond to the customer needs', 'Employees are knowledgeable and polite' and 'Understand the needs and give personal attention to them' significantly differ between BSNL and private sector telecom service providers in Kerala.

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of variables specifically **'**Modern facilities for customers', 'Services are dependable', 'Ready to respond to the customer needs', 'Employees are knowledgeable and polite' and 'Understand the needs and give personal attention to them' pertaining to the mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo. The test results showed that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variables **'**Modern facilities for customers', 'Services are dependable', 'Ready to respond to the customer needs', 'Employees are knowledgeable and polite' and 'Understand the needs and give personal attention to them' pertaining to the mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo. The test results showed that the majority of the variables have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the Hypothesis 5.2.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variables **'**Modern facilities for customers', 'Services are dependable', 'Ready to respond to the customer needs', 'Employees are knowledgeable and polite' and 'Understand the needs and give personal attention to them' of the mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo has been computed with Kruskal-Wallis test. The test results are given in the table 3.7.6.

Table 3.7.6

Mean ranking of quality of service of 3G mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean rank				
		Modern facilities for customers	Services are dependable	Ready to respond to the customer needs	Employees are knowledgeable and polite	Understand the needs and give personal attention to them
Idea	61	126.80	120.43	119.43	119.38	124.00
BSNL	50	97.90	104.33	81.57	96.27	87.02
Vodafone	41	118.48	121.76	136.67	119.20	119.39
Airtel	34	118.49	132.63	124.43	129.90	126.59
Tata Docomo	42	109.30	96.24	116.87	112.07	118.86
Total	228					

The table 3.7.7 shows the test statistic for the Kruskal-Wallis test based on quality of service of 3G mobile service providers, the associated degrees of freedom and the significance. As the number of mobile service providers considered for analysis is five, the degrees of freedom will be four.

Table 3.7.7

Kruskal-Wallis test statistics based on quality of service of 3G mobile service providers

Details	Modern facilities for customers	Services are dependable	Ready to respond to the customer needs	Employees are knowledgeable and polite	Understand the needs and give personal attention to them
Chi-Square	8.721	10.813	22.358	9.048	15.596
df	4	4	4	4	4
Asymp. Sig.	.068	.029	.000	.060	.004
Grouping variable: Mobile 3G service provider					

The table 3.7.8 shows the descriptive statistics of the variables **'**Modern facilities for customers', 'Services are dependable', 'Ready to respond to the customer needs', 'Employees are knowledgeable and polite' and 'Understand the needs and give personal attention to them' pertaining to the 3G mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo.

Table 3.7.8

Descriptive statistics of quality of service of 3G mobile service providers

Mobile Service Provider	N	Modern facilities for customers*		Services are dependable*		Ready to respond to the customer needs*		Employees are knowledgeable and polite*		Understand the needs and give personal attention to them*	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Idea	61	4.10	.651	3.90	.831	3.82	.827	3.90	.569	3.92	.737
BSNL	50	3.74	.694	3.66	.872	3.26	.899	3.46	1.014	3.36	.942
Vodafone	41	4.02	.570	3.98	.570	4.07	.685	3.88	.714	3.83	.738
Airtel	34	4.00	.739	4.03	.870	3.85	.989	3.91	.965	3.94	.776
Tata Docomo	42	3.93	.407	3.62	.661	3.83	.660	3.83	.490	3.86	.608
Total	228	3.96	.632	3.83	.786	3.75	.857	3.79	.779	3.77	.797

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Kruskal-Wallis test statistics shown in table 3.7.7 indicates that the significance value is less than 0.05 for the variables 'Services are dependable', 'Ready to respond to the customer needs', and 'Understand the needs and give personal attention to them'. Therefore, it can be concluded these variables significantly differ between BSNL and private sector telecom service providers in Kerala.

The significance value of the Kruskal-Wallis test is more than 0.05 for the variables **'**Modern facilities for customers', and 'Employees are knowledgeable and polite'. Therefore, it can be concluded these variables do not significantly differ between BSNL and private sector telecom service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 3.7.6 indicates that Idea, Vodafone and Airtel have significantly higher level in the value of the variable 'Services are dependable'. The descriptive statistics of the variable 'Services are dependable' given in the table 3.7.8 also indicate comparatively high value of mean score for these telecom service providers. The values of mean ranking of the variable 'Services are dependable' are comparatively lesser for the service providers BSNL and Tata Docomo than other service providers.

The value of mean ranking based on Kruskal-Wallis test also indicates that, Idea, Vodafone, Tata Docomo and Airtel have significantly higher level in the value of the variable 'Ready to respond to the customer needs'. The descriptive statistics of the variable 'Ready to respond to the customer needs' given in the table 3.7.8 also indicates comparatively high value of mean score for these telecom service providers. The ranking value, mean score and standard deviation show that Vodafone is at the top with respect to the value of the variable 'Ready to respond to the customer needs'. The lowest rating in the value of this variable is for the service provider BSNL.

The value of mean ranking also indicates that, Idea, Vodafone, Tata Docomo and Airtel have significantly higher levels in the values of the variable 'Understand the needs and give personal attention to them'. The descriptive statistics of the variable also indicate comparatively high value of mean score for these service providers. The lowest rating in the value of this variable is for the service provider BSNL.

3.7.3 Pricing strategies of 3G mobile telecom service providers

The variable considered for the analysis is pricing strategies of 3G mobile telecom service providers. The items used to measure the variable are: 'Attractive varieties of tariff plans are offered in the 3G mobile telecom services', 'The charging is transparent and there are no hidden charges', 'The 3G mobile telecom services deliver the real value for money spend on it', and 'The pricing of my 3G mobile telecom services are better as compared to competition service providers'.

Hypothesis 5.3

The pricing strategies of 3G Mobile Services specifically **'**Variety of tariff plans', 'Transparent billing', 'Value for money' and 'Better pricing' significantly differ between BSNL and private sector telecom service providers in Kerala.

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of variables specifically **'**Variety of Tariff plans', 'Transparent billing', 'Value for money' and 'Better pricing' pertaining to the mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo. The test results showed that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variables **'**Variety of tariff plans', 'Transparent billing', 'Value for money' and 'Better pricing' pertaining to the mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo. The test results showed that the majority of the variables have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the Hypothesis 5.3.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variables **'**Variety of Tariff plans', 'Transparent billing', 'Value for money' and 'Better pricing' of the mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo has been computed with Kruskal-Wallis test. The test results are given in the table 3.7.9.

Table 3.7.9

Mean ranking of pricing strategies of 3G mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean rank			
		Variety of tariff plans in 3G services	Transparent billing and no hidden charges in 3G services	Value for money in 3G services	Better pricing for 3G services as compared to others
Idea	61	96.60	84.90	100.73	95.04
BSNL	50	112.41	138.53	113.96	109.86
Vodafone	41	104.32	121.41	119.57	108.24
Airtel	34	129.06	125.94	110.32	112.00
Tata Docomo	42	141.14	112.87	133.57	156.42
Total	228				

The table 3.7.10 shows the test statistic for the Kruskal-Wallis test based on pricing strategies of 3G mobile service providers, the associated degrees of freedom and the significance. As the number of mobile service providers considered for analysis is five, the degrees of freedom will be four.

Table 3.7.10

Kruskal-Wallis test statistics based on the pricing strategies of 3G mobile service providers

Details	Variety of tariff plans in 3G services	Transparent billing and no hidden charges in 3G services	Value for money in 3G services	Better pricing for 3G services as compared to others
Chi-Square	18.829	26.039	8.445	26.952
df	4	4	4	4
Asymp. Sig.	.001	.000	.077	.000
Grouping variable: Mobile 3G service provider				

The table 3.7.11 shows the descriptive statistics of the variables **'**Variety of tariff plans', 'Transparent billing', 'Value for money' and 'Better pricing'

pertaining to the 3G mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo.

Table 3.7.11

Descriptive statistics of pricing strategies of 3G mobile service providers

Mobile Service Provider	N	Variety of Tariff plans*		Transparent Billing*		Value for Money*		Better Pricing*	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Idea	61	3.54	.787	3.33	.831	3.52	.829	3.36	.837
BSNL	50	3.70	.814	3.98	.654	3.68	.957	3.56	.951
Vodafone	41	3.63	.767	3.76	.734	3.78	.791	3.56	.838
Airtel	34	3.94	.814	3.79	.914	3.56	1.133	3.56	1.021
Tata Docomo	42	4.12	.550	3.69	.517	4.00	.383	4.21	.520
Total	228	3.76	.779	3.68	.772	3.70	.855	3.63	.889

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Kruskal-Wallis test statistics shown in table 3.7.10 indicates that the significance value is less are than 0.05 for the variables ‘Variety of tariff plans’, ‘Transparent billing’, and ‘Better pricing’. Therefore, it can be concluded these variables significantly differ between BSNL and private sector telecom service providers in Kerala.

The significance value of the Kruskal-Wallis test is more than 0.05 for the variable ‘Value for money’. Therefore, it can be concluded this variables do not significantly differ between BSNL and private sector telecom service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 3.7.9 indicates that Tata Docomo and Airtel have significantly higher level in the value of the variable ‘Variety of tariff plans in 3G services’. The values are comparatively low for Idea, BSNL, and Vodafone. The descriptive statistics of the variable ‘Variety of tariff plans in 3G services’ given in the table 3.7.11 also agrees to these results.

The value of mean ranking also indicates that, BSNL, Vodafone, Tata Docomo and Airtel have significantly higher level in the value of the variable

‘Transparent billing and no hidden charges in 3G services’. The value of ranking is the lowest for the service provider Idea. The descriptive statistics of the variable ‘Transparent billing and no hidden charges in 3G services’ also agrees to these results. The ranking value, mean score and standard deviation show that BSNL has the highest rating in the value of the variable ‘Transparent billing and no hidden charges in 3G services’.

The value of mean ranking based on Kruskal-Wallis also indicates that Tata Docomo has the highest level in the value of the variable ‘Better pricing for 3G services as compared to others’. The Service providers BSNL, Vodafone and Airtel show moderate ranking. The value of ranking of the variable is the lowest for the service provider Idea. The descriptive statistics of the variable ‘Better pricing for 3G services as compared to others’ also agrees to these results. The ranking value, mean score and standard deviation show that Tata Docomo is the best performer with respect to Better pricing for 3G services.

3.7.4 Promotion strategies of 3G mobile telecom service providers

The promotion strategies of 3G mobile service providers are studied based on three important variables specifically attractiveness of 3G price reduction offers, attractiveness of 3G free trial offer and attractiveness of displays and demonstrations at point of sales.

Attractiveness of price reduction offers of 3G mobile telecom service providers

The attractiveness of promotional offers of 3G mobile telecom service providers is measured by a dichotomous question to verify whether the customer has received the offers, followed by five point Likert scale to test the attractiveness of the offers. The frequency descriptive analysis of attractiveness of price reduction offers of mobile telecom service providers is given in table 3.7.12.

Table 3.7.12

Attractiveness of price reduction offers of 3G mobile telecom service providers

Mobile 3G service provider	Rebate / Price reduction offers received in 3G services		Total	Rebate / Price reduction offers are attractive in 3G services*	
	Yes	No		Mean	Std. Dev.
Idea	25 (41.0%)	36 (59.0%)	61 (100%)	3.92	.572
BSNL	8 (16.0%)	42 (84.0%)	50 (100%)	4.25	.463
Vodafone	16 (39.0%)	25 (61.0%)	41 (100%)	4.00	.365
Airtel	10 (29.4%)	24 (70.6%)	34 (100%)	4.60	.516
Tata Docomo	37 (88.1%)	5 (11.9%)	42 (100%)	4.03	.600
Total	96 (42.1%)	132 (57.9%)	228 (100%)	4.07	.567

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The 3G mobile service provider Tata Docomo is so aggressive in offering price reduction to most of its customers. The performance of other private providers is moderate in reaching their customers with this offer as compared to Tata Docomo. The BSNL reach among respondents with this offer is very less as compared all other private providers. Among the service providers the most attractive price reduction offer is from Airtel followed by BSNL.

Attractiveness of free trial offers of 3G mobile telecom service providers

The attractiveness of free trial offers of 3G mobile telecom service providers is measured by a dichotomous question to verify whether the customer has received the offers, followed by five point Likert scale to test the attractiveness of the offers. The frequency descriptive analysis of attractiveness of 3G free trial offers of mobile telecom service providers is shown in table 3.7.13.

Table 3.7.13

Attractiveness of free trial offers of 3G mobile telecom service providers

Mobile 3G service provider	Free trial offer received in 3G services		Total	Free trial offer is attractive in 3G services*	
	Yes	No		Mean	Std. Dev.
Idea	30 (49.2%)	31 (50.8%)	61 (100%)	4.00	.525
BSNL	8 (16.0%)	42 (84.0%)	50 (100%)	4.00	.535
Vodafone	26 (63.4%)	15 (36.6%)	41 (100%)	3.96	.344
Airtel	13 (38.2%)	21 (61.8%)	34 (100%)	4.23	.439
Tata Docomo	32 (76.2%)	10 (23.8%)	42 (100%)	4.13	.336
Total	109 (47.8%)	119 (52.2%)	228 (100%)	4.06	.427

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The service provider Tata Docomo is highly aggressive in the promotion of 3G services through free trial offers. The immediate follower is Vodafone. The offers of all the service providers are highly attractive. The most attractive 3G free trail offers are from Airtel and Tata Docomo. The private sector service providers are extremely successful in reaching their customers with this offer. The service provider BSNL seems to be a failure to reach the customers with their offers, even though the offers are attractive.

Attractiveness of displays and demonstrations at point of sales of 3G mobile telecom service providers

The attractiveness of displays and demonstrations at point of sales of 3G mobile telecom service providers is measured by a dichotomous question to verify whether the customer has listened to them, followed by five point Likert scale to test the attractiveness of the displays and demonstrations. The frequency descriptive

analysis of attractiveness of displays and demonstrations of 3G mobile telecom service providers at point of sales is shown in table 3.7.14.

Table 3.7.14

Attractiveness of displays and demonstrations at point of sales of 3G mobile telecom service providers

Mobile 3G service provider	Displays and demonstrations at point of sales(3G)		Total	Displays and demonstrations at point of sales are attractive (3G)*	
	Yes	No		Mean	Std. Dev.
Idea	14 (23.0%)	47 (77.0%)	61 (100%)	4.00	.392
BSNL	8 (16.0%)	42 (84.0%)	50 (100%)	3.62	1.188
Vodafone	10 (24.4%)	31 (75.6%)	41 (100%)	3.80	.422
Airtel	8 (23.5%)	26 (76.5%)	34 (100%)	4.62	.518
Tata Docomo	18 (42.9%)	24 (57.1%)	42 (100%)	4.00	.000
Total	58 (25.4%)	170 (74.6%)	228 (100%)	4.00	.592

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The service provider Tata Docomo is forefront in promoting the 3G services through the POS displays and demonstrations. The POS displays and demonstrations of all the service providers are attractive. The highest ranking with respect to the attractiveness of POS displays and demonstrations are for the service provider Airtel and the lowest rating is for BSNL.

Customer satisfaction of 3G mobile customers

The customer satisfaction of 3G mobile customers of is measured by three items. The items are: really satisfied with my 3G mobile telecom services, service provider is competent enough to fulfill the expectations, choice to associate with the service provider for 3G mobile telecom services is a wise decision and would recommend the services of the mobile service provider to others. All items of the variable are measured by using Likert Scale with five anchor points, specifically

Strongly Agree, Agree, Uncertain, Disagree and Strongly Disagree. Equal weightage is given for all items to compute the mean value of the variable.

Hypothesis 5.4

The customer satisfaction of 3G mobile customers significantly differ between BSNL and private sector telecom service providers in Kerala.

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of the variable s specifically **'**customer satisfaction of 3G mobile customers' pertaining to the mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo. The test results showed that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variable 'customer satisfaction of 3G mobile customers' pertaining to the mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo. The test results showed that the variable has heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the Hypothesis 5.4.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variable **'**customer satisfaction of 3G mobile customers' of the mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo has been computed with Kruskal-Wallis test. The test results are given in the table 3.7.15.

Table 3.7.15

Mean ranking of customer satisfaction of 3G mobile customers based on Kruskal-Wallis test

Variable	Mobile 3G service provider	N	Mean Rank
Customer satisfaction 3G mobile customers	Idea	61	107.35
	BSNL	50	113.83
	Vodafone	41	119.06
	Airtel	34	128.76
	Tata Docomo	42	109.68
	Total	228	

The table 3.7.16 shows the test statistic for the Kruskal-Wallis test based on customer satisfaction of 3G mobile customers, the associated degrees of freedom and the significance. As the number of mobile service providers considered for analysis is five, the degrees of freedom will be four.

Table 3.7.16

Kruskal-Wallis test statistics based on customer satisfaction 3G mobile customers

Details	Customer satisfaction
Chi-Square	2.831
df	4
Asymp. Sig.	.586
Grouping variable: Mobile 3G Provider	

The table 3.7.17 shows the descriptive statistics of the variable ‘customer satisfaction of 3G mobile customers’ pertaining to the 3G mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo.

Table 3.7.17

Descriptive statistics of customer satisfaction of 3G mobile customers

Mobile 3G service provider	Mean*	N	Std. Dev.
Idea	3.6393	61	.70048
BSNL	3.6650	50	.76866
Vodafone	3.7500	41	.61998
Airtel	3.8456	34	.81885
Tata Docomo	3.7500	42	.39043
Total	3.7160	228	.67458

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Kruskal-Wallis test statistics shown in table 3.7.16 indicates that the significance value is more than 0.05 for the variable 'customer satisfaction of 3G mobile customers'. Therefore, it can be concluded this variables do not significantly differ between BSNL and private sector telecom service providers in Kerala. The value of mean ranking based on Kruskal-Wallis test given in table 3.7.15 and the descriptive statistics of the variable 'customer satisfaction of 3G mobile customers' given in the table 3.7.17 also agrees to this result. The mean value shows that customers are moderately satisfied with their 3G service providers.

Customer satisfaction and service related factors of 3G mobile telecommunication services

The important service related factors which directly affect customer satisfaction of customers of 3G mobile telecom services are: 3G service benefits, quality of 3G services and pricing of 3G services. The 3G service benefits are measured using six items specifically easiness to get connected, geographical network coverage, user-friendliness of handset settings, speed of downloading, roaming facility and service support with respect to 3G mobile telecom services. The quality of 3G services are measured by five items consists of modern facilities for the customers, services are dependable, responds to the customer needs on time, the employees are knowledgeable and polite to the customers, and understand the

needs of the customers and give personal attention to them. The pricing of 3G services are measured using four items specifically attractive varieties of tariff plans, charging is transparent and there are no hidden charges, deliver the real value for money spend on it and pricing is better as compared to competition service providers.

All items of the variables are measured by using Likert Scale with five anchor points, specifically Strongly Agree, Agree, Uncertain, Disagree and Strongly Disagree. Equal weightage is given for all items to compute the mean value of the respective variables.

Hypothesis 5.5

There is significant relationship between the service related factors specifically service benefits, quality of service and pricing of 3G mobile telecommunication services and customer satisfaction.

Testing of hypothesis: Correlation analysis

The distribution of the variables customer satisfaction, 3G service benefits, quality of 3G services and pricing of 3G services are significantly non normal. Therefore the non-parametric correlation analysis, Spearman's rho is used is ascertain the relationship between the variables. The correlation coefficient varies from -1.0 to +1.0. The value of -1.0 indicates a perfect negative correlation and +1.0 indicates a perfect positive correlation. A correlation coefficient zero means there is no relationship between the variables. The test results are presented in the table 3.7.18.

Table 3.7.18

Customer satisfaction and service related factors of 3G mobile customers: correlation analysis

Correlations (Spearman's rho)					
Details		**Basic 3G benefits**	**Quality of 3G services**	**Pricing of 3G services**	**Customer satisfaction**
3G Service benefits	Correlation Coefficient	1.000	.601**	.329**	.650**
	Sig. (2-tailed)	.	.000	.000	.000
	N	254	254	254	254
Quality of 3G services	Correlation Coefficient	.601**	1.000	.293**	.514**
	Sig. (2-tailed)	.000	.	.000	.000
	N	254	254	254	254
Pricing of 3G services	Correlation Coefficient	.329**	.293**	1.000	.520**
	Sig. (2-tailed)	.000	.000	.	.000
	N	254	254	254	254
Customer satisfaction	Correlation Coefficient	.650**	.514**	.520**	1.000
	Sig. (2-tailed)	.000	.000	.000	.
	N	254	254	254	254
**. Correlation is significant at the 0.01 level (2-tailed).					

The test results indicate that the correlation is significant and the customer satisfaction of customers of 3G mobile telecom services has high positive correlation with basic service benefits (correlation coefficient 0.650), quality of service (correlation coefficient 0.514) and pricing of services (correlation coefficient 0.520).

3.7.5 Factors influenced to subscribe for the 3G mobile telecom services of a particular service provider

The suggested possible factors which influence to subscribe for 3G mobile telecom services of a particular service provider are:

i. Attractive offers as compared to other service providers.

ii. Attractive pricing as compared to other service providers.

iii. The friendly customer support services.

iv. The image and reputation of the service provider.

v. The advertisements of the service provider.

vi. The recommendation by Friends / Family members.

vii. The 3G mobile telecom services are essential for the customer.

All the factors mentioned above are measured by using Likert Scale with five anchor points, specifically Strongly Agree, Agree, Uncertain, Disagree and Strongly Disagree.

Hypothesis 5.6

The factors influenced to subscribe for the 3G mobile telecom services of a service provider specifically 'Attractive offers', 'Attractive pricing', 'Support services', 'Image of service provider' 'Advertisements', 'Recommendation by friends or family members', and 'Essential need for the services' significantly differ between BSNL and private sector telecom service providers in Kerala.

Normality of sample distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of variables specifically 'Attractive offers', 'Attractive pricing', 'Support services', 'Image of service provider' 'Advertisements', 'Recommendation by friends or family members', and 'Essential need for the services' pertaining to the mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo. The test results showed that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of sample distribution

The Levene's test is used to verify the homogeneity of variances of the variables 'Attractive offers', 'Attractive pricing', 'Support services', 'Image of service provider' 'Advertisements', 'Recommendation by friends or family members', and 'Essential need for the services' pertaining to the mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo. The test results showed that majority of the variables have heterogeneous variances. Therefore the Kruskal-Wallis test is used to test the Hypothesis 5.6.

Testing of hypothesis: Kruskal-Wallis test

The summary of ranked data corresponding to the variables 'Attractive offers', 'Attractive pricing', 'Support services', 'Image of service provider' 'Advertisements', 'Recommendation by friends or family members', and 'Essential need for the services' of the mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo has been computed with Kruskal-Wallis test. The test results are given in the table 3.7.19.

Table 3.7.19

Mean ranking of factors influenced to subscribe for the 3G services of mobile service providers based on Kruskal-Wallis test

Mobile Service Provider	N	Mean rank						
		Attractive offers	Attractive pricing	Friendly customer support services	Image and reputation of the service provider	Advert-isements	Recommen-dation by friends/ family members	Essential need for the services
Idea	61	100.58	93.52	116.37	103.34	107.30	99.58	108.13
BSNL	50	101.48	107.22	79.90	117.34	86.50	118.03	114.49
Vodafone	41	84.91	101.06	128.96	132.71	120.77	96.68	116.66
Airtel	34	131.85	123.46	136.41	125.53	135.96	134.56	136.43
Tata Docomo	42	165.05	159.50	121.12	100.63	134.80	133.12	103.90
Total	228							

The table 3.7.20 shows the test statistic for the Kruskal-Wallis test based on factors influenced to subscribe for 3G mobile telecom services of the 3G mobile service providers, the associated degrees of freedom and the significance. As the number of mobile service providers considered for analysis is five, the degrees of freedom will be four.

Table 3.7.20

Kruskal-Wallis test statistics based factors influenced to subscribe for the 3G services of mobile service providers

Details	Attractive offers	Attractive pricing	Friendly customer support services	Image and reputation of the service provider	Advert-isements	Recomme-ndation by friends/family members	Essential need for the services
Chi-Square	44.909	33.482	25.535	11.029	19.770	14.865	7.933
df	4	4	4	4	4	4	4
Asymp. Sig.	.000	.000	.000	.026	.001	.005	.094
Grouping variable: Mobile 3G service provider							

The descriptive statistics of the variables ‘Attractive offers’, ‘Attractive pricing’, and ‘Friendly customer support services’ is shown in the table 3.7.21. The descriptive statistics of the variables ‘Image and reputation of the service provider’ ‘Advertisements’, ‘Recommendation by friends or family members’, and ‘Essential need for the services’ is shown in the table 3.7.22. These variables are pertaining to the 3G mobile service providers Idea, BSNL, Vodafone, Airtel and Tata Docomo.

Table 3.7.21

Descriptive statistics of factors influenced to subscribe for the 3G services of mobile service providers

Mobile Service Provider	N	Attractive offers*		Attractive pricing*		Friendly customer support services*	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Idea	61	3.25	.994	3.34	.892	3.75	.699
BSNL	50	3.28	.904	3.54	.885	3.08	1.104
Vodafone	41	2.98	1.012	3.41	.974	3.88	.900
Airtel	34	3.71	1.219	3.74	1.136	3.97	.937
Tata Docomo	42	4.29	.508	4.31	.563	3.83	.621
Total	228	3.46	1.038	3.64	.954	3.68	.915

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

Table 3.7.22

Descriptive Statistics of factors influenced to subscribe for the 3G services of mobile service providers

Mobile Service Provider	N	Image and reputation of the service provider*		Advertisements*		Recommendation by friends/family members*		Essential need for the services*	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Idea	61	3.69	.765	3.18	.992	3.20	1.046	4.08	.759
BSNL	50	3.84	.889	2.84	.997	3.50	1.074	4.12	.849
Vodafone	41	4.10	.490	3.39	.945	3.15	1.062	4.24	.538
Airtel	34	3.97	.797	3.62	1.101	3.74	1.136	4.44	.504
Tata Docomo	42	3.69	.643	3.60	.767	3.79	.606	4.12	.504
Total	228	3.84	.748	3.29	.999	3.44	1.029	4.18	.676

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Kruskal-Wallis test statistics shown in table 3.7.20 indicates that the significance value is less than 0.05 for the variables 'Attractive offers', 'Attractive pricing', 'Support services', 'Image of service provider' 'Advertisements', and 'Recommendation by friends/family members'. Therefore, it can be concluded these variables significantly differ between BSNL and private sector telecom service providers in Kerala. The significance value of the Kruskal-Wallis test is more than 0.05 for the variable 'Essential need for the services'. Therefore, it can be concluded this variable do not significantly differ between BSNL and private sector telecom service providers in Kerala.

The value of mean ranking based on Kruskal-Wallis test given in table 3.7.19 indicates that Tata Docomo and Airtel have significantly higher level in the value of the variable 'Attractive offers'. The values are moderate for Idea and BSNL, but the value is low for Vodafone. The descriptive statistics of the variable 'Attractive offers' given in the table 3.7.21 also agrees to this result.

The value of mean ranking also indicates that Tata Docomo has significantly higher level in the value of the variable 'Attractive pricing'. The value is moderate for Airtel and comparatively low for Idea, vodafone and BSNL. The descriptive statistics of the variable 'Attractive pricing' also agrees to this result.

The value of mean ranking shows that private telecom service providers have significantly higher level in the values of the variable 'Friendly customer support services' than BSNL. The descriptive statistics of the variable 'Friendly customer support services' also agrees to this result.

The value of mean ranking also shows that Vodafone, Airtel, and BSNL have significantly higher level in the values of the variable 'Image and reputation of the service provider'. The values are comparatively low for Idea and Tata Docomo. The descriptive statistics of the variable 'Image and reputation of the service provider' given in the table 3.7.22 also agrees to this result.

The value of mean ranking indicates that private telecom service providers have significantly higher level in the values of the variable 'Advertisements' than BSNL. It can also be seen that Tata Docomo and Airtel have significantly higher level in the value of the variable 'Recommendation by friends/family members'. The

values are moderate for BSNL, and low for Vodafone and Idea. The descriptive statistics of these variables also agrees to these results.

The major factor which influenced to subscribe for the 3G mobile telecom services is the essential need of the customers for the services, irrespective of the service providers except Tata Docomo. The prime influencing factors with regard to Tata Docomo are attractive pricing and attractive offers. In general the factors, of the order of its weightage, which influenced the customers to subscribe for 3G services are: (i) Essential need for the services, (ii) Image and reputation of the service provider, (iii) Friendly customer support services, (iv) Attractive pricing, (v) Attractive offers, (vi) Recommendation by friends/family members, and (vii) Advertisements.

3.7.6 Adoption issues of 3G mobile internet services

The suggested possible reasons related to the adoption issues of 3G mobile internet services are:

i. Lack of network coverage of 3G mobile internet services.

ii. High pricing of 3G mobile internet services.

iii. High cost of 3G mobile handsets.

iv. Difficulty to learn the method of operation of 3G handsets.

v. The services are not essential for the customer

The adoption issues of 3G mobile internet services are different for customers of different demographic profiles. The demographic variables age, education and income of the respondents are considered for the analysis of adoption issues. Based on each of these demographic variables the respondents are grouped in to two categories. The categories are: (i) the respondents with *age - up to 30 years* and *age - above 30 years* (ii) the respondents with *educational profile - graduation and above*, and *educational profile - below graduation* (iii) the respondents with *annual income - up to 2 lakhs* and *annual income - more than 2 lakhs*.

The distribution of sample respondents by 3G mobile user status is given in the table 3.7.23. It shows that 23.5 % of the respondents are using 3G mobile telecom services.

Table 3.7.23

Distribution of sample respondents by 3G mobile user status

3G mobile user status	Frequency	Percent
3G mobile users	254	23.5
Non - 3G mobile users	826	76.5
Total	1080	100.0

Source: Primary Survey.

The distribution of awareness level of non-3G users of sample respondents is given in the table 3.7.24. Among non-3G mobile users more than 50% of sample respondents are aware of 3G mobile telecom services.

Table 3.7.24

Distribution of awareness level of non-3G mobile users of sample respondents

Awareness level	Frequency	Percent
Aware of 3G Services	426	51.6
Unaware of 3G Services	400	48.4
Total	826	100

Source: Primary Survey.

The distribution of age group of sample respondents who are aware but non-users of 3G mobile internet services are given in table 3.7.25. It can be seen that nearly 60% of this segment belonging to the age group up to 30 years.

Table 3.7.25

Distribution of age group of sample respondents who are aware but non- users of 3G mobile internet services

Age group (in years)	Frequency	Percent
≤ 30	253	59.4
> 30	173	40.6
Total	426	100.0

Source: Primary Survey.

The distribution of educational profile of sample respondents who are aware but non- users of 3G mobile internet services are given in table 3.7.26. It can be seen that 73 % of this segment belonging to the customers of high educational profile.

Table 3.7.26

Distribution of educational profile of sample respondents who are aware but non- users of 3G mobile internet services

Educational profile	Frequency	Percent
Below Graduation	114	26.8
Graduation and Above	312	73.2
Total	426	100.0

Source: Primary Survey.

The distribution of annual income of sample respondents who are aware but non- users of 3G mobile internet services are given in table 3.7.27. It can be seen that nearly 64% of this segment belonging to annual family income more than 2 lakhs.

Table 3.7.27

Distribution of annual family income of sample respondents who are aware but non- users of 3G mobile internet services

Annual family income (in lakhs of Rupees)	Frequency	Percent
≤ 2	151	35.4
> 2	275	64.6
Total	426	100.0

Source: Primary Survey.

In total of 1080 sample respondents, 254 of them are 3G users and among the remaining 826 non-3G users, 426 respondents are aware of 3G mobile internet services. The adoption issues are studied among the respondents who are aware of 3G mobile services but not using the services.

Hypothesis 5.7

The factors affecting adoption of 3G mobile internet services specifically 'Lack of network coverage of 3G mobile internet services', 'High pricing of 3G mobile internet services', 'High cost of 3G mobile handsets', 'Difficulty to learn the method of operation of 3G handsets' and 'The services are not essential for the customer' significantly differ in accordance with the demographic variables age, education and income of the respondents.

Normality of Sample Distribution

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to verify the normality of distribution of variables specifically 'Lack of network coverage of 3G mobile internet services', 'High pricing of 3G mobile internet services', 'High cost of 3G mobile handsets', 'Difficulty to learn the method of operation of 3G handsets' and 'The services are not essential for the customer' pertaining to the respondents who are aware of 3G mobile services but not using the services. The test results showed that sample distributions of the variables are significantly non-normal.

Homogeneity of variance of Sample Distribution

The Levene's test is used to verify the homogeneity of variances of the variables 'Lack of network coverage of 3G mobile internet services', 'High pricing of 3G mobile internet services', 'High cost of 3G mobile handsets', 'Difficulty to learn the method of operation of 3G handsets' and 'The services are not essential for the customer' pertaining to the respondents who are aware of 3G mobile services but not using the services. The test results showed that the variables have homogeneous variances. Even though the groups have homogeneous variances, as the data are not normally distributed, the Mann-Whitney U test is used to test the Hypothesis 5.7.

Testing of hypothesis: Mann-Whitney U test based on age group of the respondents

The summary of ranked data corresponding to the variables 'Lack of network coverage of 3G mobile internet services', 'High pricing of 3G mobile internet services', 'High cost of 3G mobile handsets', 'Difficulty to learn the method of operation of 3G handsets' and 'The services are not essential for the customer' pertaining to the respondents who are aware of 3G mobile services but not using the services has been computed with Mann-Whitney U test. The test results with respect to age group of the respondents are given in the table 3.7.28.

Table 3.7.28

Mean ranking of factors affecting adoption of 3G mobile internet services with respect to the age group of respondents based on Mann-Whitney U test

Details	N	Mean rank				
		Lack of 3G network coverage	High pricing of 3G services	High cost of 3G mobile handsets	Difficulty to learn the method of operation of 3G handsets	The 3G services are not essential
Age up to 30	253	221.89	237.95	232.18	183.18	185.31
Age Above 30	173	201.24	177.75	186.18	257.84	254.73
Total	426					

The table 3.7.29 shows the test statistic for the Mann- Whitney U test on the comparison of the variables 'Lack of network coverage of 3G mobile internet

services', 'High pricing of 3G mobile internet services', 'High cost of 3G mobile handsets', 'Difficulty to learn the method of operation of 3G handsets' and 'The services are not essential for the customer' pertaining to two groups of respondents: (i) age up to 30 years and (ii) age above 30 years.

Table 3.7.29

Factors affecting adoption of 3G mobile internet services: Mann - Whitney U test statistics based on the age group of respondents

Details	Lack of 3G network coverage	High pricing of 3G services	High cost of 3G mobile handsets	Difficulty to learn the method of operation of 3G handsets	The 3G services are not essential
Mann-Whitney U	19763.000	15699.000	17157.500	14214.000	14751.500
Wilcoxon W	34814.000	30750.000	32208.500	46345.000	46882.500
Z	-1.772	-5.156	-3.957	-6.701	-5.914
Asymp. Sig. (2-tailed)	.076	.000	.000	.000	.000
Grouping variable: Age Group					

The table 3.7.30 shows the descriptive statistics of the variables 'Lack of network coverage of 3G mobile internet services', 'High pricing of 3G mobile internet services', 'High cost of 3G mobile handsets', 'Difficulty to learn the method of operation of 3G handsets' and 'The services are not essential for the customer' pertaining to two groups of respondents: (i) age up to 30 years and (ii) age above 30 years.

Table 3.7.30

Descriptive statistics of factors affecting adoption of 3G mobile internet services with respect to the age group of respondents

Details	N	Lack of 3G network coverage*		High pricing of 3G services*		High cost of 3G mobile handsets*		Difficulty to learn the method of operation of 3G handsets*		The 3G services are not essential *	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age up to 30	253	3.42	1.031	3.60	1.014	3.48	1.041	2.22	.737	3.09	1.247
Age Above 30	173	3.24	.956	3.09	.958	3.11	.973	2.69	.750	3.81	1.138
Total	426	3.35	1.004	3.39	1.021	3.33	1.029	2.41	.778	3.38	1.254

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Mann- Whitney U test statistics shown in table 3.7.29 indicates that the significance value is less than 0.05 for the variables ‘High pricing of 3G mobile internet services’, ‘High cost of 3G mobile handsets’, ‘Difficulty to learn the method of operation of 3G handsets’ and ‘The services are not essential for the customer’. Therefore, it can be concluded that these variables significantly differ between two age groups two groups of respondents: (i) age up to 30 years and (ii) age above 30 years. As the significance value is more than 0.05 for the variable ‘Lack of network coverage of 3G mobile services’, it doesn’t significantly differ between the two age groups.

The value of mean ranking shown in table 3.7.28 and descriptive statistics shown in table 2.3.30 indicate that the major 3G adoption issues of youngsters are high pricing of 3G services, high cost of 3G mobile handsets followed by the lack of 3G network coverage. They don’t find any difficulty in learning the method of operation of 3G handsets. But the major 3G adoption issue of elders is that, they could not identify the need of the 3G mobile services. The 3G network coverage is also an issue. Even though the learning difficulty in the operation of 3G handsets is not a serious adoption issue among the mobile customers, the elders perceived more learning difficulty in the operation of 3G handsets than youngsters.

Testing of hypothesis: Mann-Whitney U test based on educational profile of the respondents

The summary of ranked data corresponding to the variables 'Lack of network coverage of 3G mobile internet services', 'High pricing of 3G mobile internet services', 'High cost of 3G mobile handsets', 'Difficulty to learn the method of operation of 3G handsets' and 'The services are not essential for the customer' pertaining to the respondents who are aware of 3G mobile services but not using the services has been computed with Mann-Whitney U test. The test results with respect to educational profile of the respondents are given in the table 3.7.31.

Table 3.7.31

Mean ranking of factors affecting adoption of 3G mobile internet services with respect to the educational profile of respondents based on Mann-Whitney U test

Educational profile	N	Mean rank				
		Lack of 3G network coverage	High pricing of 3G services	High cost of 3G mobile handsets	Difficulty to learn the method of operation of 3G handsets	The 3G services are not essential
Below Graduation	114	202.00	220.21	224.29	214.33	202.36
Graduation and Above	312	217.70	211.05	209.56	213.20	217.57
Total	426					

The table 3.7.32 shows the test statistic for the Mann- Whitney U test on the comparison of the variables 'Lack of network coverage of 3G mobile internet services', 'High pricing of 3G mobile internet services', 'High cost of 3G mobile handsets', 'Difficulty to learn the method of operation of 3G handsets' and 'The services are not essential for the customer' pertaining to two groups of respondents: (i) educational profile - graduation and above and (ii) educational profile - below graduation.

Table 3.7.32

Factors affecting adoption of 3G mobile internet services: Mann-Whitney U test statistics based on the educational profile of respondents

Details	Not using 3G services due to lack of coverage	Not using 3G services due to high price of services	Not using 3G services due to high cost of handset	Not using 3G services due to the difficulty in learning the method of operations	Not using 3G services due to no need
Mann-Whitney U	16472.500	17019.500	16553.500	17689.500	16514.000
Wilcoxon W	23027.500	65847.500	65381.500	66517.500	23069.000
Z	-1.216	-.707	-1.143	-.092	-1.168
Asymp. Sig. (2-tailed)	.224	.480	.253	.927	.243
Grouping variable: Educational Profile					

The table 3.7.33 shows the descriptive statistics of the variables 'Lack of network coverage of 3G mobile internet services', 'High pricing of 3G mobile internet services', 'High cost of 3G mobile handsets', 'Difficulty to learn the method of operation of 3G handsets' and 'The services are not essential for the customer' pertaining to two groups of respondents: (i) educational profile - graduation and above and (ii) educational profile - below graduation.

Table 3.7.33

Descriptive statistics of factors affecting adoption of 3G mobile internet services with respect to the educational profile of respondents

Details	N	Lack of 3G network coverage*		High pricing of 3G services*		High cost of 3G mobile handsets*		Difficulty to learn the method of operation of 3G handsets*		The 3G services are not essential*	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Below Graduation	114	3.25	.920	3.45	.987	3.43	.968	2.42	.751	3.28	1.194
Graduation and Above	312	3.38	1.033	3.37	1.034	3.29	1.049	2.41	.788	3.42	1.275
Total	426	3.35	1.004	3.39	1.021	3.33	1.029	2.41	.778	3.38	1.254

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Mann- Whitney U test statistics shown in table 3.7.32 indicates that the significance value is more than 0.05 for the variables 'Lack of network coverage of 3G mobile internet services', 'High pricing of 3G mobile internet services', 'High cost of 3G mobile handsets', 'Difficulty to learn the method of operation of 3G handsets' and 'The services are not essential for the customer'. Therefore, it can be concluded that these variables do not significantly differ between two groups of respondents: (i) educational profile - graduation and above and (ii) educational profile - below graduation. The descriptive statistics shown in table 3.7.33 indicate that the lack of 3G network coverage, pricing of 3G services and handset, and unrecognized needs are fairly relevant adoption issues.

Testing of hypothesis: Mann-Whitney U test based on the income of the respondents

The summary of ranked data corresponding to the variables 'Lack of network coverage of 3G mobile internet services', 'High pricing of 3G mobile internet services', 'High cost of 3G mobile handsets', 'Difficulty to learn the method of operation of 3G handsets' and 'The services are not essential for the customer' pertaining to the respondents who are aware of 3G mobile services but not using the

services has been computed with Mann-Whitney U test. The test results with respect to the income of the respondents are given in the table 3.7.34.

Table 3.7.34

Mean ranking of factors affecting adoption of 3G mobile internet services with respect to the income of respondents based on Mann-Whitney U test

Details	N	Mean rank				
		Lack of 3G network coverage	High pricing of 3G services	High cost of 3G mobile handsets	Difficulty to learn the method of operation of 3G handsets	The 3G services are not essential
Up to 2 lakhs	151	203.56	231.46	256.14	206.64	193.73
More than 2 lakhs	275	218.96	203.64	190.09	217.27	224.36
Total	426					

The table 3.7.35 shows the test statistic for the Mann- Whitney U test on the comparison of the variables 'Lack of network coverage of 3G mobile internet services', 'High pricing of 3G mobile internet services', 'High cost of 3G mobile handsets', 'Difficulty to learn the method of operation of 3G handsets' and 'The services are not essential for the customer' pertaining to two income groups of respondents: (i) annual income up to 2 lakhs and (ii) annual income more than 2 lakhs.

Table 3.7.35

Factors affecting adoption of 3G mobile internet services: Mann-Whitney U test statistics based on the income of respondents

Details	Not using 3G services due to lack of coverage	Not using 3G services due to high price of services	Not using 3G services due to high cost of handset	Not using 3G services due to the difficulty in learning the method of operations	Not using 3G services due to no need
Mann-Whitney U	19261.000	18050.000	14324.000	19726.500	17776.500
Wilcoxon W	30737.000	56000.000	52274.000	31202.500	29252.500
Z	-1.288	-2.321	-5.534	-.929	-2.542
Asymp. Sig. (2-tailed)	.198	.020	.000	.353	.011
Grouping variable: Annual Income					

The table 3.7.36 shows the descriptive statistics of the variables 'Lack of network coverage of 3G mobile internet services', 'High pricing of 3G mobile internet services', 'High cost of 3G mobile handsets', 'Difficulty to learn the method of operation of 3G handsets' and 'The services are not essential for the customer' pertaining to two income groups of respondents: (i) annual income up to 2 lakhs and (ii) annual income more than 2 lakhs.

Table 3.7.36

Descriptive statistics of factors affecting adoption of 3G mobile internet services with respect to the income of the respondents

Details	N	Lack of 3G network coverage*		High pricing of 3G services*		High cost of 3G mobile handsets*		Difficulty to learn the method of operation of 3G handsets*		The 3G services are not essential*	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Up to 2 lakhs	151	3.26	.934	3.54	1.018	3.68	.926	2.36	.753	3.19	1.187
More than 2 lakhs	275	3.40	1.039	3.31	1.016	3.13	1.032	2.44	.791	3.48	1.280
Total	426	3.35	1.004	3.39	1.021	3.33	1.029	2.41	.778	3.38	1.254

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The summary of Mann- Whitney U test statistics shown in table 3.7.35 indicates that the significance value is less than 0.05 for the variables 'High pricing of 3G mobile internet services', 'High cost of 3G mobile handsets', and 'The services are not essential for the customer'. Therefore, it can be concluded that these variables significantly differ between two income groups of respondents: (i) annual income up to 2 lakhs and (ii) annual income more than 2 lakhs.

As the significance value is more than 0.05 for the variable 'Lack of network coverage of 3G mobile services' and 'Difficulty to learn the method of operation of 3G handsets', these variables do not significantly differ between the two income groups.

The value of mean ranking shown in table 3.7.34 and descriptive statistics shown in table 3.7.36 indicate that the major 3G adoption issues of low income group are high cost of 3G mobile handsets and high pricing of 3G services followed by the lack of 3G network coverage and unrecognised needs. The major 3G adoption issues of high income group are unrecognised needs and lack of 3G network coverage followed by high pricing of 3G services.

Adoption issues of 3G mobile internet services: combined effect of demographic variables

The testing of hypothesis 5.7 proved that the variables related to the adoption issues of 3G mobile internet services 'High pricing of 3G mobile internet services', 'High cost of 3G mobile handsets', 'Difficulty to learn the method of operation of 3G handsets' and 'The services are not essential for the customer' significantly differ between two age groups: (i) age up to 30 years and (ii) age above 30 years. The variable 'Lack of network coverage of 3G mobile services' doesn't significantly differ between the two age groups. It is also proved that all the above mentioned variables do not significantly differ between two the groups based on their educational profile: (i) educational profile - graduation and above and (ii) educational profile - below graduation.

The variables 'High pricing of 3G mobile internet services', 'High cost of 3G mobile handsets', and 'The services are not essential for the customer' significantly differ between two income groups: (i) annual income up to 2 lakhs and

(ii) annual income more than 2 lakhs. But the variables 'Lack of network coverage of 3G mobile services' and 'Difficulty to learn the method of operation of 3G handsets' do not significantly differ between the two income groups.

Therefore a two way table is constructed with the variables 'High pricing of 3G mobile internet services', 'High cost of 3G mobile handsets', 'Difficulty to learn the method of operation of 3G handsets' and 'The services are not essential for the customer' to study the combined effect of demographic variables age and income of the respondents in the adoption issues of 3G mobile internet services. The results are presented in table 3.7.37.

Table 3.7.37

The combined effect of age and income of the sample respondents in the adoption issues of 3G mobile internet services

Adoption issues of 3G mobile internet services*	Annual income up to 2 lakhs		Annual income more than 2 lakhs.		Details
	Mean	Std. Dev.	Mean	Std. Dev.	
High pricing of 3G services	**3.63**	0.992	**3.57**	1.037	**Age up to 30 years**
High cost of 3G mobile handsets	**3.73**	0.929	**3.23**	1.086	
Difficulty to learn the method of operation of 3G handsets	2.31	0.734	2.13	0.733	
The 3G services are not essential	3.08	1.187	3.09	1.038	
High pricing of 3G services	3.11	1.05	3.08	0.943	**Age above 30 years.**
High cost of 3G mobile handsets	**3.44**	0.892	3.05	0.978	
Difficulty to learn the method of operation of 3G handsets	2.63	0.792	2.71	0.744	
The 3G services are not essential	**3.7**	1.068	**3.83**	1.153	
N (age up to 30 years and annual income up to 2 lakhs)=124 N (age up to 30 years and annual income more than 2 lakhs)=129 N (age above 30 years and annual income up to 2 lakhs)=27 N (age above 30 years and annual income more than 2 lakhs)=146					

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The descriptive statistics shown in table 3.7.37 indicate that the major 3G adoption issues of youngsters are high cost of 3G mobile handsets and high pricing

of 3G services. The issues are more prominent among youngsters belonging to low income group. Leaning difficulty is not at all an issue among youngsters irrespective of their income status. The elders in general perceive that 3G mobile services are not essential for them. The income level has not significant influence on this perception of this segment. The high cost of 3G mobile handsets is a restricting factor to the adoption of 3G service among the elders of low income group.

3.8 Analysis of demographic profile of sample respondents and preference for a particular mobile telecom service provider

The Chi-Square test is used for testing the relatedness or independence of demographic variables specifically age, gender, educational qualification, employment status, income, and locality of sample respondents and preference for a particular mobile telecom service provider.

3.8.1 Age of respondents and preference for a particular mobile telecom service provider

Hypothesis 6.1

Ho: The age of the respondents and preference for a particular mobile telecom service provider are independent of each other.

Ha: There is significant relationship between the age of the respondents and preference for a particular mobile telecom service provider.

Testing of hypothesis: The Chi-Square test

The Chi-Square test is used for testing the relatedness or independence of age group of sample respondents and preference for a particular mobile telecom service provider. The cross tabulation of age group of sample respondents and the most preferred mobile telecom service provider is presented in the table 3.8.1 and results of Chi-Square tests are presented in table 3.8.2.

Table 3.8.1

Cross tabulation - age and most preferred mobile service provider

Age group	Details	Mobile Service Provider - most preferred				Total
		Idea	BSNL	Vodafone	Airtel	
Less than 20 years	Count	22	11	29	5	67
	Expected Count	20.3	19.6	17.6	9.4	67.0
	% within Age	32.8%	16.4%	43.3%	7.5%	100.0%
	% within Mobile Service Provider - Most Preferred	8.3%	4.3%	12.7%	4.1%	7.7%
20 years to 30 years	Count	106	78	89	65	338
	Expected Count	102.6	99.1	89.0	47.4	338.0
	% within Age	31.4%	23.1%	26.3%	19.2%	100.0%
	% within Mobile Service Provider - Most Preferred	40.2%	30.6%	38.9%	53.3%	38.9%
30 years to 40 years	Count	61	63	71	36	231
	Expected Count	70.1	67.7	60.8	32.4	231.0
	% within Age	26.4%	27.3%	30.7%	15.6%	100.0%
	% within Mobile Service Provider - Most Preferred	23.1%	24.7%	31.0%	29.5%	26.6%
40 years to 50 years	Count	64	64	32	8	168
	Expected Count	51.0	49.2	44.2	23.6	168.0
	% within Age	38.1%	38.1%	19.0%	4.8%	100.0%
	% within Mobile Service Provider - Most Preferred	24.2%	25.1%	14.0%	6.6%	19.3%
More than 50 years	Count	11	39	8	8	66
	Expected Count	20.0	19.3	17.4	9.3	66.0
	% within Age	16.7%	59.1%	12.1%	12.1%	100.0%
	% within Mobile Service Provider - Most Preferred	4.2%	15.3%	3.5%	6.6%	7.6%
Total	Count	264	255	229	122	870
	Expected Count	264.0	255.0	229.0	122.0	870.0
	% within Age	30.3%	29.3%	26.3%	14.0%	100.0%
	% within Mobile Service Provider - Most Preferred	100.0%	100.0%	100.0%	100.0%	100.0%

Table 3.8.2

Age and most preferred mobile service provider: Chi-Square test results

Details	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	78.736[a]	12	.000
Likelihood Ratio	79.097	12	.000
Linear-by-Linear Association	5.250	1	.022
N of Valid Cases	870		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.26.			

Pearson Chi-Square has a value of 78.736 with a significance of 0.000. This significance value is well below the alpha level of 0.05 and is therefore significant. Hence the null hypothesis is rejected and the alternate hypothesis is accepted that, there is significant relationship between the age of the respondents and preference for a particular mobile telecom service provider, χ^2 (12, $\underline{N}$=870) =78.736, p<0.05.

The age group of the respondents is segmented in six categories. They are the respondents in age group less than 20 years, 20 years to 30 years, 30 years to 40 years, 40 years to 50 years, 50 years to 60years and more than 60 years. To do the Chi-Square tests for analysing the relatedness or independence between age of the respondents and preference for a particular mobile telecom service provider, the respondents belonging to the age group more than 60 years is combined with respondents belonging to the age group of 50 years to sixty years and named it as age group more than fifty years. This is due to the reason that one cell, the cell corresponding to the respondents of 'Mobile Service Provider Airtel' and 'Age group more than 60 years' has expected count less than 5, violating the main assumption of chi-square tests.

In examining the cell frequencies following observations and conclusions can be arrived.

1. The respondents belonging to the younger generation; the age group below 30 years prefer private sector mobile service providers to BSNL. From among the sample respondents, it can be seen that 48.5% of Idea customers, 51.6% of Vodafone customers and 57.4% of Airtel customers belonging to

the age group below 30 years. The BSNL representation in this category of age is only 34.9%. The marketing strategies of BSNL to attract younger segment may not be as effective as private sector telecom service providers. The total count of the age group below 30 years in the sample population is 405. Out of this 31.6% are Idea, 21.98% are BSNL, 29.14 are Vodafone, and 17.28% are Airtel customers.

2. The respondents belonging to the age group of 30 years to 40 years don't show much variation in their preference for a particular mobile service provider. However this category gives slightly more preference for Vodafone and Airtel than BSNL and Idea. From among the sample respondents, it can be seen that 31% of Vodafone customers, 29.5% of Airtel customers, 24.7% of BSNL customers, and 23.1% of Idea customers belonging to the age group of 30 years to 40 years. The total count of the age group '30 years to 40 years' in the sample population is 231. Out of this 26.4% are Idea, 27.3% are BSNL, 30.7% are Vodafone, and 15.6% are Airtel customers.

3. The respondents belonging to the age group above fourty years show clear inclination towards BSNL. It can be observed that, 28.4% of Idea customers, 17.5% of Vodafone customers and 13.2% of Airtel customers belonging to this age group while BSNL representation is 40.4%. The total count of the age group above 40 years in the sample population is 234. Out of this 32.05% are Idea, 44.02% are BSNL, 17.09% are Vodafone, and 6.84% are Airtel customers.

3.8.2 The gender of sample respondents and preference for a particular mobile telecom service provider

Hypothesis 6.2

Ho: The gender of the respondents and preference for a particular mobile telecom service provider are independent of each other.

Ha: There is significant relationship between the gender of the respondents and preference for a particular mobile telecom service provider.

Testing of hypothesis: The Chi-Square test

The Chi-Square test is used for testing the relatedness or independence of gender of sample respondents and preference for a particular mobile telecom service provider. The cross tabulation of gender of sample respondents and the most preferred mobile telecom service provider is presented in the table 3.8.3 and results of Chi-Square tests are presented in table 3.8.4.

Table 3.8.3

Cross tabulation - gender and most preferred mobile service provider

Gender	Details	Mobile Service Provider - most preferred				Total
		Idea	BSNL	Vodafone	Airtel	
Male	Count	171	146	144	70	531
	Expected Count	161.1	155.6	139.8	74.5	531.0
	% within Mobile Service Provider - Most Preferred	64.8%	57.3%	62.9%	57.4%	61.0%
Female	Count	93	109	85	52	339
	Expected Count	102.9	99.4	89.2	47.5	339.0
	% within Mobile Service Provider - Most Preferred	35.2%	42.7%	37.1%	42.6%	39.0%
Total	Count	264	255	229	122	870
	Expected Count	264.0	255.0	229.0	122.0	870.0
	% within Mobile Service Provider - Most Preferred	100.0%	100.0%	100.0%	100.0%	100.0%

Table 3.8.4

Gender and most preferred mobile service provider: Chi-Square test results

Details	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.098[a]	3	.251
Likelihood Ratio	4.097	3	.251
Linear-by-Linear Association	.957	1	.328
N of Valid Cases	870		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 47.54.

The Pearson Chi-Square has a value of 4.098 with a significance of 0.251. This significance value is much higher than the commonly accepted alpha level of 0.05. Therefore the null hypothesis is accepted and it can be concluded that there is no significant relationship between the gender of the respondents and preference for a particular mobile telecom service provider, χ^2 (3, N=870) =4.098, p>0.05.

3.8.3 The educational qualification of sample respondents and preference for a particular mobile telecom service provider

Hypothesis 6.3

Ho: The educational qualification of the respondents and preference for a particular mobile telecom service provider are independent of each other.

Ha: There is significant relationship between the educational qualification of the respondents and preference for a particular mobile telecom service provider.

Testing of hypothesis: The Chi-Square test

The Chi-Square test is used for testing the relatedness or independence of educational qualification of sample respondents and preference for a particular mobile telecom service provider. The cross tabulation of educational qualification of sample respondents and the most preferred mobile telecom service provider is presented in the table 3.8.5 and results of Chi-Square tests are presented in table 3.8.6.

Table 3.8.5

Cross tabulation - educational qualification and most preferred mobile service provider

Educational qualification	Details	Mobile Service Providers				Total
		Idea	BSNL	Vodafone	Airtel	
Below 10th standard	Count	39	12	29	4	84
	Expected Count	25.5	24.6	22.1	11.8	84
	% within Educational Qualification	46.4%	14.3%	34.5%	4.8%	100.0%
	% within Mobile Service Provider	14.8%	4.7%	12.7%	3.3%	9.7%
10th standard pass - Below graduation	Count	83	55	78	26	242
	Expected Count	73.4	70.9	63.7	33.9	242.0
	% within Educational Qualification	34.3%	22.7%	32.2%	10.7%	100.0%
	% within Mobile Service Provider	31.4%	21.6%	34.1%	21.3%	27.8%
Graduation and Above	Count	69	97	59	39	264
	Expected Count	80.1	77.4	69.5	37.0	264.0
	% within Educational Qualification	26.1%	36.7%	22.3%	14.8%	100.0%
	% within Mobile Service Provider	26.1%	38.0%	25.8%	32.0%	30.3%
Professional / Technical Degree	Count	73	91	63	53	280
	Expected Count	85.0	82.1	73.7	39.3	280.0
	% within Educational Qualification	26.1%	32.5%	22.5%	18.9%	100.0%
	% within Mobile Service Provider	27.7%	35.7%	27.5%	43.4%	32.2%
Total	Count	264	255	229	122	870
	Expected Count	264.0	255.0	229.0	122.0	870.0
	% within Educational Qualification	30.3%	29.3%	26.3%	14.0%	100.0%
	% within Mobile Service Provider	100%	100%	100%	100%	100%

Table 3.8.6

Educational qualification and most preferred mobile service provider: Chi-Square test results

Details	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	48.026[a]	9	.000
Likelihood Ratio	49.769	9	.000
Linear-by-Linear Association	7.899	1	.005
N of Valid Cases	870		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 11.78.

The Pearson Chi-Square has a value of 48.026 with a significance of 0.000. This significance value is well below the alpha level of 0.05. Hence the null hypothesis is rejected and the alternate hypothesis is accepted that, there is significant relationship between the educational qualification of the respondents and preference for a particular mobile telecom service provider, χ^2 (9, $\underline{N}$=870) =48.026, $p<0.05$.

The educational qualification of the respondents is segmented in four categories. They are the respondents with educational qualification below 10^{th} standard, 10^{th} standard pass- below graduation, graduation and above, and professional/technical degree.

In examining the cell frequencies following observations and conclusions can be arrived.

1. The respondents with the educational qualification below 10^{th} standard show a strong preference for Idea and Vodafone than BSNL and Airtel. From among the sample respondents, it can be observed that, 14.8% of Idea customers, 12.7% of Vodafone customers, 4.7% of BSNL customers and 3.3% of Airtel customers belonging to this category. The total count of respondents with the educational qualification below 10^{th} standard in the sample population is 84. Out of this 46.4% are Idea, 34.5% are Vodafone and 14.3% are BSNL and 4.8% are Airtel customers.

2. The respondents with the educational qualification above 10th standard but below graduation show strong preference for Vodafone and Idea than BSNL and Airtel. From among the sample respondents, it can be observed that 34.1% of Vodafone customers, 31.4% of Idea customers, 21.6% of BSNL customers and 21.3% of Airtel customers belonging to this category. The total count of respondents with the educational qualification above 10th standard but below graduation in the sample population is 242. Out of this 34.3% are Idea, 32.2% are Vodafone and 22.7% are BSNL and 10.7% are Airtel customers.

3. The respondents with the educational qualification above graduation show relatively more preference for BSNL and Airtel than Idea and Vodafone. From among the sample respondents, it can be observed that 38% of BSNL customers, 32% of Airtel customers, 26.1% of Idea customers and 25.8% of Vodafone customers belonging to this category. The total count of respondents with the educational qualification above graduation in the sample population is 264. Out of this 36.7% are BSNL, 26.1% are Idea, 22.3% are Vodafone and 14.8% are Airtel customers.

4. The respondents with the educational qualification as professional or technical degree show relatively more preference for Airtel and BSNL than Idea and Vodafone. From among the sample respondents, it can be observed that 43.4% of Airtel customers 35.7% of BSNL customers, 27.7% of Idea customers and 27.5% of Vodafone customers belonging to this category. The total count of respondents with the educational qualification as professional or technical degree in the sample population is 280. Out of this 32.5% are BSNL, 26.1% are Idea, 22.5% are Vodafone and 18.9% are Airtel customers.

In general the respondents belonging to segment of educationally low profile show more preference for the mobile telecom service providers Idea or Vodafone and educationally high profile give more preference the mobile telecom service providers BSNL or Airtel.

3.8.4 The employment status of sample respondents and preference for a particular mobile telecom service provider

Hypothesis 6.4

Ho: The employment status of the respondents and preference for a particular mobile telecom service provider are independent of each other.

Ha: There is significant relationship between the employment status of the respondents and preference for a particular mobile telecom service provider.

Testing of hypothesis: The Chi-Square test

The Chi-Square test is used for testing the relatedness or independence of Employment Status of sample respondents and preference for a particular mobile telecom service provider. The cross tabulation of employment status of sample respondents and the most preferred mobile telecom service provider is presented in the table 3.8.7 and results of Chi-Square tests are presented in table 3.8.8.

Table 3.8.7

Cross tabulation - employment status and most preferred mobile service provider

Employment status	Details	Mobile Service Provider - most preferred				Total
		Idea	BSNL	Vodafone	Airtel	
Government Service	Count	21	70	16	5	112
	Expected Count	34.7	31.2	30.0	16.2	112.0
	% within Employment Status	18.8%	62.5%	14.3%	4.5%	100.0%
	% within Mobile Service Provider - Most Preferred	8.1%	30.0%	7.1%	4.1%	13.4%
Private Sector	Count	46	29	41	39	155
	Expected Count	48.0	43.1	41.5	22.4	155.0
	% within Employment Status	29.7%	18.7%	26.5%	25.2%	100.0%
	% within Mobile Service Provider - Most Preferred	17.8%	12.4%	18.3%	32.2%	18.5%

Business	Count	36	21	30	15	102
	Expected Count	31.6	28.4	27.3	14.7	102.0
	% within Employment Status	35.3%	20.6%	29.4%	14.7%	100.0%
	% within Mobile Service Provider - Most Preferred	13.9%	9.0%	13.4%	12.4%	12.2%
Professional	Count	28	25	20	21	94
	Expected Count	29.1	26.2	25.2	13.6	94.0
	% within Employment Status	29.8%	26.6%	21.3%	22.3%	100.0%
	% within Mobile Service Provider - Most Preferred	10.8%	10.7%	8.9%	17.4%	11.2%
Self Employed	Count	49	16	45	10	120
	Expected Count	37.1	33.4	32.1	17.3	120.0
	% within Employment Status	40.8%	13.3%	37.5%	8.3%	100.0%
	% within Mobile Service Provider - Most Preferred	18.9%	6.9%	20.1%	8.3%	14.3%
Student	Count	47	49	52	26	174
	Expected Count	53.8	48.4	46.6	25.2	174.0
	% within Employment Status	27.0%	28.2%	29.9%	14.9%	100.0%
	% within Mobile Service Provider - Most Preferred	18.1%	21.0%	23.2%	21.5%	20.8%
House Wife	Count	32	23	20	5	80
	Expected Count	24.8	22.3	21.4	11.6	80.0
	% within Employment Status	40.0%	28.8%	25.0%	6.2%	100.0%
	% within Mobile Service Provider - Most Preferred	12.4%	9.9%	8.9%	4.1%	9.6%
Total	Count	259	233	224	121	837
	Expected Count	259.0	233.0	224.0	121.0	837.0
	% within Employment Status	30.9%	27.8%	26.8%	14.5%	100.0%
	% within Mobile Service Provider - Most Preferred	100.0%	100.0%	100.0%	100.0%	100.0%

Table 3.8.8

Employment status and most preferred mobile service provider: Chi-Square test results

Details	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.216E2[a]	18	.000
Likelihood Ratio	114.720	18	.000
Linear-by-Linear Association	1.268	1	.260
N of Valid Cases	837		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 11.57.			

The Pearson Chi-Square has a value of 121.6 with a significance of 0.000. This significance value is well below the alpha level of 0.05. Hence the null hypothesis is rejected and the alternate hypothesis is accepted that, there is significant relationship between the employment status of the respondents and preference for a particular mobile telecom service provider, χ^2 (18, $\underline{N}$=837) =121.6, $p<0.05$.

The employment status of the respondents is segmented in eight categories namely: Government Service, Private Sector, Business, Professional, Self-Employed, Student, Retired and Housewife.

In examining the cell frequencies following observations and conclusions can be arrived.

1. The respondents belonging to the category of government employees prefer BSNL to private sector mobile service providers. From among the sample respondents, it can be seen that 30% of BSNL customers are government employees. The representations of government employees in private sector telecom operators are comparatively very less. From among the sample respondents, 8.1% of Idea customers, 7.1% of Vodafone customers and 4.1% of Airtel are government employees. The total count of Government employees in the sample population is 112. Out of this 62.5% are BSNL, 18.8% are Idea, 14.3% are Vodafone and 4.5% are Airtel customers.

2. The respondents belonging to the category of private sector employees prefer private sector mobile service providers to BSNL. From among the sample respondents, it can be seen that 32.2% of Airtel customers, 18.3% of Vodafone customers and 17.8% of Idea customers belonging to the category of private sector employees. The BSNL representation in this category is only 12.4%. The total count of Private employees in the sample population is 155. Out of this 29.7% are Idea, 26.5% are Vodafone and 25.2% are Airtel and 18.7% are BSNL customers.

3. The respondents with employment status 'Business' do not show much variation in their preference for a particular mobile service provider. However this category gives slightly more preference for private sector mobile service providers than BSNL. From among the sample respondents, it can be seen that 13.9% of Idea customers, 13.4% of Vodafone customers, 12.4% of Airtel customers and 9% of BSNL customers belonging to this category. The total count of Private employees in the sample population is 155. Out of this 35.3% are Idea, 29.4% are Vodafone, 20.6% are BSNL and 14.7% are Airtel customers.

4. The professional category from the sample respondents shows approximately same preference for all the mobile service providers. From among the sample respondents, it can be seen that 10.8% of Idea customers, 10.7% of BSNL customers, 8.9% of Vodafone customers, and 17.4% of Airtel customers belonging to this category. The total count of professional people in the sample population is 94. Out of this 29.8% are Idea, 26.6% are BSNL, 21.3% are Vodafone, and 22.3% are Airtel customers.

5. The respondents belonging to the category of self-employed prefers Vodafone or Idea to BSNL or Airtel. From among the sample respondents, it can be seen that 20.1% of Vodafone customers, 18.9% of Idea customers, 8.3% of Airtel customers and 6.9% of BSNL customers belong to the category of self-employed. The total count of self-employed in the sample population is 120. Out of this 40.8% are Idea, 37.5% are Vodafone and 8.3% are Airtel and 13.3% are BSNL customers.

6. The student category from the sample respondents shows nearly same preference for all the mobile service providers. From among the sample respondents, it can be seen that 18.1% of Idea customers, 21% of BSNL customers, 23.2% of Vodafone customers, and 21.5% of Airtel customers belonging to this category. The total count of students in the sample population is 174. Out of this 27% are Idea, 28.2% are BSNL, 29.9% are Vodafone, and 14.9% are Airtel customers.

7. The Housewives from the sample respondents show relatively more preference for Idea, moderate preference for BSNL and Vodafone and lower preference for Airtel. From among the sample respondents, it can be seen that 12.4% of Idea customers, 9.9% of BSNL customers, 8.9% of Vodafone customers, and 4.1% of Airtel customers belonging to this category. The total count of housewives in the sample population is 80. Out of this 40% are Idea, 28.8% are BSNL, 25% are Vodafone, and 6.2% are Airtel customers.

The respondents belonging to the employment status "retired" has been excluded from the chi- square test due to reason that one cell, the cell corresponding to the respondents of 'Mobile Service Provider Airtel' and 'Employment status retired' has expected count less than 5, violating the main assumption of chi-square tests. However the cross tabulation of respondents with employment status "retired" and their association with different mobile service providers is given in the table 3.8.9.

Table 3.8.9

Cross tabulation - employment status 'Retired' category and most preferred mobile service provider

Employment status	Details	Mobile Service Provider - most preferred				Total
		Idea	BSNL	Vodafone	Airtel	
Retired	Count	5	22	5	1	33
	% within Employment Status	15.2%	66.7%	15.2%	3.0%	100.0%

The total count of “retired” in the sample population is 33. Out of this 66.7% are BSNL, 15.2% are Idea, 15.2% are Vodafone and 3% are Airtel customers. The respondents belonging to the retired category show high preference for the service provider BSNL.

3.8.5 The annual family income of sample respondents and preference for a particular mobile telecom service provider

Hypothesis 6.5

Ho: The annual family Income of the respondents and preference for a particular mobile telecom service provider are independent of each other.

Ha: There is significant relationship between the annual family income of the respondents and preference for a particular mobile telecom service provider

Testing of hypothesis: The Chi-Square test

The Chi-Square test is used for testing the relatedness or independence of Annual Family Income of sample respondents and preference for a particular mobile telecom service provider. The cross tabulation of annual family income of sample respondents and the most preferred mobile telecom service provider is presented in the table 3.8.10 and results of Chi-Square tests are presented in table 3.8.11

Table 3.8.10

Cross tabulation - annual family income and most preferred mobile service provider

Annual family income	Details	Mobile Service Provider - most preferred				Total
		Idea	BSNL	Vodafone	Airtel	
Upto Rs 2 Lakhs	Count	137	67	121	42	367
	Expected Count	111.4	107.6	96.6	51.5	367.0
	% within Annual Family Income	37.3%	18.3%	33.0%	11.4%	100.0%
	% within Mobile Service Provider - Most Preferred	51.9%	26.3%	52.8%	34.4%	42.2%
Rs 2 Lakhs to Rs 5 Lakhs	Count	92	129	82	51	354
	Expected Count	107.4	103.8	93.2	49.6	354.0
	% within Annual Family Income	26.0%	36.4%	23.2%	14.4%	100.0%
	% within Mobile Service Provider - Most Preferred	34.8%	50.6%	35.8%	41.8%	40.7%
Rs 5 Lakhs to Rs 10 Lakhs	Count	25	48	22	18	113
	Expected Count	34.3	33.1	29.7	15.8	113.0
	% within Annual Family Income	22.1%	42.5%	19.5%	15.9%	100.0%
	% within Mobile Service Provider - Most Preferred	9.5%	18.8%	9.6%	14.8%	13.0%
More than Rs 10 Lakhs	Count	10	11	4	11	36
	Expected Count	10.9	10.6	9.5	5.0	36.0
	% within Annual Family Income	27.8%	30.6%	11.1%	30.6%	100.0%
	% within Mobile Service Provider - Most Preferred	3.8%	4.3%	1.7%	9.0%	4.1%
Total	Count	264	255	229	122	870
	Expected Count	264.0	255.0	229.0	122.0	870.0
	% within Annual Family Income	30.3%	29.3%	26.3%	14.0%	100.0%
	% within Mobile Service Provider - Most Preferred	100.0%	100.0%	100.0%	100.0%	100.0%

Table 3.8.11

Annual family income and most preferred mobile service provider: Chi-Square test results

Details	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	60.625[a]	9	.000
Likelihood Ratio	60.732	9	.000
Linear-by-Linear Association	2.642	1	.104
N of Valid Cases	870		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.05.			

The Pearson Chi-Square has a value of 60.625 with a significance of 0.000. This significance value is well below the alpha level of 0.05. Hence the null hypothesis is rejected and the alternate hypothesis is accepted that, there is significant relationship between the annual family income of the respondents and preference for a particular mobile telecom service provider, χ^2 (9, $\underline{N}$=870) =60.625, $p<0.05$.

The annual family income of the respondents is segmented in four categories. They are the segments with annual family income up to Rupees 2 lakhs, 2lakhs to 5 lakhs, 5 lakhs to 10 lakhs and more than 10 lakhs.

In examining the cell frequencies following observations and conclusions can be arrived.

1. The respondents with annual family income up to Rupees 2 lakhs, mainly prefer private sector telecom service providers, especially Idea or Vodafone for their mobile communication needs. From among the sample respondents, it can be observed that 52.8% of Vodafone customers, 51.9% of Idea customers, 34.4% percentage of Airtel customers and 26.3% percentage of BSNL customers belonging to this segment. The total count of respondents with annual family income up to Rupees 2 lakhs in the sample population is 367. Out of this 37.3% are Idea, 33% are Vodafone, 18.3% are BSNL and 11.4% are Airtel customers.

2. The respondents with annual family income above Rupees 2 lakhs but below Rupees 5 lakhs, mainly prefer BSNL to private sector telecom service providers. A considerable population of private sector telecom operators also belonging to this segment. From among the sample respondents, 50.6% percentage of BSNL customers, 41.8% percentage of Airtel customers, 35.8% of Vodafone customers, and 34.8% of Idea customers belonging to this segment. The total count of respondents with annual family income above Rupees 2 lakhs but below Rupees 5 lakhs in the sample population is 354. Out of this 36.4% are BSNL, 26% are Idea, 23.2% are Vodafone, and 14.4% are Airtel customers.

3. The respondents with annual family income above Rupees 5 lakhs but below Rupees 10 lakhs, shows slightly more preference for BSNL as compared to other mobile telecom service providers. From among the sample respondents, 18.8% percentage of BSNL customers, 14.8% percentage of Airtel customers, 9.6% of Vodafone customers, and 9.5% of Idea customers belonging to this segment. The total count of respondents with annual family income above Rupees 5 lakhs but below Rupees 10 lakhs in the sample population is 113. Out of this 42.5% are BSNL, 22.1% are Idea, 19.5% are Vodafone, and 15.9% are Airtel customers.

4. The respondents with annual family income above Rupees 10 lakhs show slightly more preference for Airtel or BSNL than Idea or Vodafone. From among the sample respondents 9% percentage of Airtel customers, 4.3% percentage of BSNL customers, 3.8% of Idea customers and 1.7% of Vodafone customers belonging to this segment. The total count of respondents with annual family income above Rupees 10 in the sample population is 36. Out of this 30.6% are BSNL, 30.6% are Airtel, 27.8% are Idea, and 11% are Vodafone customers.

In general the respondents belonging to the segment of the low income profile give more preference for the mobile telecom service providers Idea or Vodafone and the high income profile give more preference the mobile telecom service providers BSNL or Airtel.

3.8.6 The locality of sample respondents and preference for a particular mobile telecom service provider

Hypothesis 6.6

Ho: The locality of the respondents and preference for a particular mobile telecom service provider are independent of each other.

Ha: There is significant relationship between the locality of the respondents and preference for a particular mobile telecom service provider.

Testing of hypothesis: The Chi-Square test

The Chi-Square test is used for testing the relatedness or independence of locality of sample respondents and preference for a particular mobile telecom service provider. The cross tabulation of locality of sample respondents and the most preferred mobile telecom service provider is presented in the table 3.8.12 and results of Chi-Square tests are presented in table 3.8.13.

Table 3.8.12

Cross tabulation - locality and most preferred mobile service provider

Locality	Details	Mobile Service Provider - most preferred				Total
		Idea	BSNL	Vodafone	Airtel	
Rural	Count	95	70	84	39	288
	Expected Count	87.4	84.4	75.8	40.4	288.0
	% within Locality	33.0%	24.3%	29.2%	13.5%	100.0%
	% within Mobile Service Provider - Most Preferred	36.0%	27.5%	36.7%	32.0%	33.1%
Semi Urban	Count	99	88	85	29	301
	Expected Count	91.3	88.2	79.2	42.2	301.0
	% within Locality	32.9%	29.2%	28.2%	9.6%	100.0%
	% within Mobile Service Provider - Most Preferred	37.5%	34.5%	37.1%	23.8%	34.6%
Urban	Count	70	97	60	54	281
	Expected Count	85.3	82.4	74.0	39.4	281.0
	% within Locality	24.9%	34.5%	21.4%	19.2%	100.0%
	% within Mobile Service Provider - Most Preferred	26.5%	38.0%	26.2%	44.3%	32.3%
Total	Count	264	255	229	122	870
	Expected Count	264.0	255.0	229.0	122.0	870.0
	% within Locality	30.3%	29.3%	26.3%	14.0%	100.0%
	% within Mobile Service Provider - Most Preferred	100.0%	100.0%	100.0%	100.0%	100.0%

Table 3.8.13

Locality and most preferred mobile service provider: Chi-Square test results

Details	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.632[a]	6	.001
Likelihood Ratio	22.881	6	.001
Linear-by-Linear Association	1.753	1	.186
N of Valid Cases	870		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 39.40.			

The Pearson Chi-Square has a value of 22.632 with a significance of 0.001. This significance value is well below the alpha level of 0.05. Hence the null hypothesis is rejected and the alternate hypothesis is accepted that, there is significant relationship between the locality of the respondents and preference for a particular mobile telecom service provider, χ^2 (9, N=870) =22.632, p<0.05.

The locality of the respondents is segmented in three categories. The respondents of municipal corporations are identified as urban category, the respondents of municipalities are identified as semi-urban category and the respondents of panchayat are identified as rural category.

In examining the cell frequencies following observations and conclusions can be arrived.

1. The respondents of rural segments mainly prefer private sector telecom service providers, especially Vodafone or Idea for their mobile communication needs. From among the sample respondents, it can be observed that 36.7% of Vodafone customers, 36% of Idea customers, 33.1% percentage of Airtel customers and 27.5% percentage of BSNL customers belonging to this segment. The total count of respondents of rural segments in the sample population is 288. Out of this 33% are Idea, 29.2% are Vodafone, 24.3% are BSNL and 13.5% are Airtel customers.
2. The respondents of semi urban segments show nearly same preference for Idea, Vodafone and BSNL and relatively low preference for Airtel. From

among the sample respondents, it can be seen that 37.5% of Idea customers, 34.5% of BSNL customers, 37.1% of Vodafone customers, and 23.8% of Airtel customers belonging to this category. The total count of respondents of semi urban segment in the sample population is 301. Out of this 32.9% are Idea, 29.2% are BSNL, 28.2% are Vodafone, and 9.6% are Airtel customers.

3. The respondents of urban segments show more preference for Airtel or BSNL than Idea or Vodafone. From among the sample respondents 44.3% percentage of Airtel customers, 38% percentage of BSNL customers, 26.5% of Idea customers and 26.2% of Vodafone customers belonging to this segment. The total count of respondents of urban segment in the sample population is 281. Out of this 34.5% are BSNL, 24.9% are Idea, and 21.4% are Vodafone and 19.2% are Airtel customers.

3.9 Analysis of services marketing aspects of landline and landline broadband internet services

The landline industry in Kerala is facing the declining stage of the product life cycle. The landline telecom service providers in Kerala are BSNL, Airtel, Reliance, and Tata. Their subscriber base and respective market share in Kerala as on March 2013 are: BSNL (29.44 lakhs, 96.04%), Airtel (0.56 lakhs, 1.83%), Reliance (0.54 lakhs, 1.76%), and Tata (0.11 lakhs, 0.37%)[20]. In total of 1080 respondents in the survey, 533 of them are landline users. The distribution of landline users of sample respondents is given in the table 3.9.1.

[20] Press releases on subscriber data, March 2013. Telecom Regulatory Authority of India. www.trai.gov.in

Table 3.9.1

Distribution of landline users of sample respondents

Landline Service Provider	Frequency	Percent	Cumulative percent
BSNL	474	88.9	88.9
Reliance	30	5.6	94.6
Airtel	12	2.3	96.8
Tata	17	3.2	100.0
Total	533	100.0	

Source: Primary Survey.

3.9.1 Landline telecom services

The services marketing aspects of landline telephone services are studied mainly based on four variables. The variables are: the product benefits and service support, pricing attractiveness, employee attitude and product (landline) retention possibility. The items used to measure the variable the product benefits and service support are: excellent voice clarity, compliant resolution or fault repair is fast, excellent service support, modern and visually appealing telephone instrument and materials, and the services are dependable.

The pricing attractiveness is measured using five items specifically: attractive tariff plans are offered in landline services, the landline services are low-priced, the billing of landline services is transparent and there are no hidden charges, attractive discounts/ rebates are offered in landline services, landline and mobile phone combined schemes/offers are attractive.

The employee attitude is measured by two items. The items are: ‘the employees are knowledgeable and polite to the customers’ and ‘the employees of service provider do understand the needs of the customers and give personal attention to them’.

The items used to measure the variable ‘The landline retention possibility’ are: landline services deliver the real value for money spends on it, emotional attachment with the landline service, satisfaction with the landline services, and the likelihood to retain the landline services.

All items are measured by Likert Scale with five anchor points, specifically Strongly Agree, Agree, Uncertain, Disagree and Strongly Disagree. Equal weightage is given for all items to compute the mean value of the variables.

Hypothesis 7.1

There is significant relationship between the landline retention possibility and the service related factors specifically product benefits and service support, pricing attractiveness, and employee attitude of landline telecom services.

Testing of hypothesis: Correlation analysis

The correlation analysis is performed to identify the extent to which two or more things are related to one another. The correlation coefficient varies from -1.0 to +1.0. The value of -1.0 indicates a perfect negative correlation and +1.0 indicates a perfect positive correlation. A correlation coefficient zero means there is no relationship between the variables. As the distribution of the variables ‘product benefits and service support’, ‘Pricing attractiveness’, ‘Employee attitude of landline telecom services’ and ‘The landline retention possibility’ are significantly non normal, the non-parametric correlation analysis, Spearman’s rho is used is ascertain the relationship between the variables. The test results are shown in table 3.9.2.

Table 3.9.2

The results of correlation analysis: the retention possibility of landline services

Correlations - Spearman's rho					
Details		**Product benefits and service support**	**Employee attitude**	**Pricing attractiveness**	**Landline retention possibility**
Product benefits and service support	Correlation Coefficient	1.000	.669**	.360**	.626**
	Sig. (2-tailed)	.	.000	.000	.000
	N	533	533	533	533
Employee attitude	Correlation Coefficient	.669**	1.000	.324**	.528**
	Sig. (2-tailed)	.000	.	.000	.000
	N	533	533	533	533
Pricing attractiveness	Correlation Coefficient	.360**	.324**	1.000	.567**
	Sig. (2-tailed)	.000	.000	.	.000
	N	533	533	533	533
Landline retention possibility	Correlation Coefficient	.626**	.528**	.567**	1.000
	Sig. (2-tailed)	.000	.000	.000	.
	N	533	533	533	533
**. Correlation is significant at the 0.01 level (2-tailed).					

The test results indicate that the correlation is significant between the landline retention possibility and the service related factors specifically product benefits and service support, pricing attractiveness, and employee attitude of landline telecom services. The product benefits and service support has high positive correlation (correlation coefficient 0.626) with the landline retention possibility. The pricing attractiveness (correlation coefficient 0.567) and employee attitude (correlation coefficient 0.528) are also positively correlated with the landline retention possibility.

The descriptive statistics of landline retention possibility and service related factors specifically product benefits and service support, pricing attractiveness, and employee attitude of landline telecom service providers are shown in table 3.9.3.

Table 3.9.3

Descriptive statistics of service related factors of landline service providers

Landline service provider	N	Product benefits and service support*		Employee attitude*		Pricing attractiveness*		Landline retention possibility*	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
BSNL	474	3.29	0.888	3.23	0.944	3.27	0.597	3.54	0.758
Reliance	30	3.66	0.573	3.60	0.578	3.32	0.552	3.23	0.631
Airtel	12	4.42	0.262	4.29	0.498	2.97	0.339	3.48	0.198
Tata	17	3.79	0.698	3.79	0.532	2.96	0.389	3.07	0.571
Total	533	3.35	0.881	3.29	0.929	3.26	0.588	3.51	0.745

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The mean score and standard deviation given in the table 3.9.3 indicate that the private landline service providers especially Airtel positively differentiated their landline services with better ‘product benefits and service support’ and ‘employee attitude’ than BSNL. The pricing attractiveness is comparatively higher in Reliance and BSNL landline services than Airtel and Tata. The retention possibility is comparatively high in Airtel and BSNL, moderate in Reliance and comparatively low in Tata landline services. Even though the retention possibility is comparatively high in BSNL, the value of standard deviation implies that the retention possibility variation is very high in BSNL.

3.9.2 Landline broadband internet services

The broadband internet services supported the landline services with value addition in the declining stage of the landline industry. In total of 533 landline users among the sample respondents, 291 of them are landline broadband users. The distribution of landline broadband internet users of sample respondents is given in the table 3.9.4.

Table 3.9.4

Distribution of landline broadband internet users of sample respondents

Landline Service Provider	Broadband users	Non Broadband users	Total
BSNL	268 (56.5%)	206 (43.5%)	474 (100%)
Reliance	5 (16.7%)	25 (83.3%)	30 (100%)
Airtel	10 (83.3%)	2 (16.7%)	12 (100%)
Tata	8 (47.1%)	9 (52.9%)	17 (100%)
Total	291 (54.6%)	242 (45.4%)	533 (100%)

Source: Primary Survey.

The services marketing aspects of landline broadband internet services are studied mainly based on three variables. The variables are: the product benefits and service support, pricing attractiveness, and customer satisfaction. The items used to measure the variable the product benefits and service support are: uninterrupted internet connectivity, getting the download speed as assured in the broadband plan, excellent customer support, and excellent overall quality of broadband internet services.

The pricing attractiveness is measured using three items specifically: 'Wide variety of tariff plans are offered in broadband services', 'Attractive discounts/ rebates are offered in broadband services' and 'the pricing of broadband services are attractive'.

The items used to measure customer satisfaction are: 'the landline broadband services deliver the real value for money spend on it', 'really satisfied with the landline broadband internet services' and 'would recommend the landline broadband internet services to the friends / colleagues'.

All items are measured by Likert Scale with five anchor points, specifically Strongly Agree, Agree, Uncertain, Disagree and Strongly Disagree. Equal weightage is given for all items to compute the mean value of the variables.

Hypothesis 7.2

There is significant relationship between the customer satisfaction and the service related factors specifically 'product benefits and service support' and 'pricing attractiveness' of landline broadband internet services.

Testing of hypothesis: Correlation analysis

The correlation analysis is performed to identify the extent to which two or more things are related to one another. The correlation coefficient varies from -1.0 to +1.0. The value of -1.0 indicates a perfect negative correlation and +1.0 indicates a perfect positive correlation. A correlation coefficient zero means there is no relationship between the variables. As the distribution of the variables 'Product benefits and service support', 'Pricing attractiveness', and 'Customer satisfaction' are significantly non normal, the non-parametric correlation analysis, Spearman's rho is used is ascertain the relationship between the variables. The test results are shown in table 3.9.5.

Table 3.9.5

The results of correlation analysis: customer satisfaction of landline broadband internet services

Correlations - Spearman's rho				
Details		**Product benefits and service support**	**Pricing attractiveness**	**Customer Satisfaction**
Product benefits and service support	Correlation Coefficient	1.000	.259**	.618**
	Sig. (2-tailed)	.	.000	.000
	N	291	291	291
Pricing attractiveness	Correlation Coefficient	.259**	1.000	.610**
	Sig. (2-tailed)	.000	.	.000
	N	291	291	291
Customer Satisfaction	Correlation Coefficient	.618**	.610**	1.000
	Sig. (2-tailed)	.000	.000	.
	N	291	291	291
**. Correlation is significant at the 0.01 level (2-tailed).				

The test results indicate that the correlation is significant between customer satisfaction and the service related factors specifically 'Product benefits and service support' and 'Pricing attractiveness' of landline broadband internet services. The customer satisfaction has high positive correlation with product benefits and service support (correlation coefficient 0.618), and pricing attractiveness (correlation coefficient 0.610).

The product benefits and service support has high positive correlation (correlation coefficient 0.618) with the customer satisfaction. The pricing attractiveness is also positively correlated with the customer satisfaction.

The descriptive statistics of customer satisfaction and the service related factors specifically 'Product benefits and service support' and 'Pricing attractiveness' of landline broadband internet services are shown in table 3.9.6. As the number of respondents corresponding to the broadband services of the private sector providers Reliance, Airtel and Tata is less, for the purpose of descriptive statistical analysis, the respondents belonging to these providers are put together and categorized as private sector.

Table 3.9.6

Descriptive statistics of service related factors of landline broadband services: BSNL and private sector providers

Landline broadband internet service provider	N	Product benefits and service support*		Pricing attractiveness*		Customer Satisfaction *	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
BSNL	268	3.74	0.764	3.63	0.687	3.91	0.700
Private Sector	23	4.21	0.542	3.10	0.454	3.72	0.343
Total	291	3.78	0.758	3.59	0.686	3.89	0.679

* Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

The mean score and standard deviation given in the table 3.9.6 indicate that the private landline service providers positively differentiated their landline broadband internet services with better product benefits and service support than BSNL. The pricing attractiveness is comparatively higher for BSNL landlines

broadband services than private sector providers. The customers are generally satisfied with landline broadband internet services. Even though the satisfaction level is slightly higher for BSNL the value of standard deviation implies that the variation of customer satisfaction is relatively high among the respondents of BSNL than private sector providers.

Opinion of respondents of landline broadband services about the retention of landline services

The opinion of respondents of landline broadband services about the retention of their landline services is ascertained through the item: 'Broadband internet is the main factor which forced the customer to retain the landline connection'. The responses of BSNL landline broadband customers are shown in table 3.9.7 and that of private service providers are shown in table 3.9.8.

Table 3.9.7

Opinion of respondents of BSNL landline broadband services about the retention of their landline services

Broadband internet is the main factor which forced the customer to retain the landline connection			
Responses	**Frequency**	**Percent**	**Cumulative percent**
Strongly Disagree	12	4.5	4.5
Disagree	78	29.1	33.6
Uncertain	22	8.2	41.8
Agree	89	33.2	75.0
Strongly Agree	67	25.0	100.0
Total	268	100.0	

Table 3.9.8

Opinion of respondents of private sector landline broadband services about the retention of their landline services

Broadband internet is the main factor which forced the customer to retain the landline connection				
Responses	**Frequency**	**Percent**	**Valid percent**	**Cumulative percent**
Disagree	16	69.6	69.6	69.6
Uncertain	3	13.0	13.0	82.6
Agree	4	17.4	17.4	100.0
Total	23	100.0	100.0	

The descriptive statistics of the variable 'broadband internet is the main factor which forced the customer to retain the landline connection' is shown in table 3.9.9. As the number of respondents corresponding to the private sector providers Reliance, Airtel and Tata is less, for the purpose of descriptive statistical analysis, the respondents belonging to these providers are put together and presented as private sector.

Table 3.9.9

Descriptive statistics of the variable 'Broadband internet is the main factor which forced the customer to retain the landline connection'

Landline broadband internet service provider	**N**	**Broadband internet is the main factor which forced the customer to retain the landline connection***	
		Mean	**Std. Dev.**
BSNL	268	3.45	1.267
Private Sector	23	2.48	.790
Total	291	3.37	1.262

*Measured on a 5-point Likert Scale, Strongly Disagree =1, Disagree=2, Uncertain=3, Agree=4, Strongly Agree=5; Mean Value of the Scale = 3.

It can be observed that nearly 60% of respondents of BSNL landline broadband services retained their landline services only for availing broadband internet connectivity; whereas in private sector the corresponding proportion is 17%

only. The majority of the respondents of private sector landline broadband services find the utility of landline services along with broadband internet services.

Based on the analysis of data, it is established that the marketing strategies practiced by BNSL and the private sector telecom service providers in Kerala are significantly different. The analysis revealed that the significant predictors of customer satisfaction of mobile telecom services are service benefits, customer support services, quality of service, competitive pricing, and unethical practices. The analysis indicates that there is significant association between the landline retention possibility and the service related factors specifically product benefits and service support, pricing attractiveness, and employee attitude of landline telecom services. On the basis of the analysis, the findings of the study are presented in the following chapter.

CHAPTER - IV

THE FINDINGS OF THE STUDY

CHAPTER – IV

THE FINDINGS OF THE STUDY

The foregoing discussions provide a clear picture about the marketing strategies adopted by the public sector telecommunication service provider BSNL and private sector telecommunication service providers in Kerala. The telecom service providers practiced many strategic marketing initiatives, which in turn revolutionise the telecom services market. The service innovations and marketing strategies decide the fortune of service providers. Many of the late entrants captured the major market share of mobile telecom services sector of Kerala by exploring the market opportunities. The analysis of primary data reveals that the marketing strategies significantly differ between BSNL and private sector telecom service providers in Kerala. This chapter consolidated the findings of the study on the basis of the analysis of data. The mobile subscriber base in Kerala as on March 2013 is 306.89 lakhs. More than 80% of customer base of mobile telecom services market is vested with the telecom giants: Idea (25.81 %), BSNL (25.17%), Vodafone (20.21%) and Airtel (11.41%)[1]. The remaining minor fraction of the telecom market is shared by the other service providers like Reliance, TATA, MTS, and Aircel. The service provider Tata Docomo belongs to the Tata group is emerged with innovative pricing and aggressive promotion strategies to compete with leading service providers in the 3G mobile telecom services market. The results of their strategies are yet to be proved.

The public sector service provider BSNL along with the three main private sector telecom service providers Idea, Vodafone and Airtel are primarily considered for the data analysis pertaining to the comparative study of marketing strategies practiced in the telecommunication services sector. The mobile telecom service providers differentiated their services based on service benefits, customer support services, quality of service, brand value, pricing strategies, and promotional strategies. In the study of marketing strategies related to the third generation (3G)

[1] Press releases on subscriber data, March 2013. Telecom Regulatory Authority of India. www.trai.gov.in

mobile telecommunication services, the service provider Tata Docomo is also included, taking into account its' vital role in the 3G segment and aggressive marketing strategies. Analysis of services marketing aspects of landline and landline broadband internet services are the part of the study.

This part is presented in seven sections. They are:

1. The product differentiation strategies of BSNL and private sector mobile telecom service providers in Kerala.
2. The pricing strategies of BSNL and private sector mobile telecom service providers in Kerala.
3. The promotion strategies of BSNL and private sector mobile telecom service providers in Kerala.
4. The effect of service related factors on customer satisfaction and customer loyalty of customers of mobile telecommunication services.
5. The marketing strategies related to the third generation (3G) mobile telecommunication services of BSNL and private sector mobile telecom service providers in Kerala.
6. The relatedness of demographic profile of respondents and preference for a particular mobile telecom service provider.
7. The services marketing aspects of landline and landline broadband internet services.

4.1 The product differentiation strategies of BSNL and private sector mobile telecom service providers in Kerala

Hypothesis 1

There is significant difference between the product differentiation strategies of BSNL and private sector mobile telecom service providers in Kerala.

The variables used to test the hypothesis are: basic core service benefits, supplementary service benefits, customer support related to product availability of prepaid mobile telecom services, customer support related to product availability of

post-paid mobile telecom services, customer care services of mobile telecom service providers, the quality of service, and the brand value of mobile telecom service providers.

- ❖ The delivery of basic core service benefits of mobile telecom services specifically voice clarity, geographical network coverage, and easiness to get connected to the network significantly differ between BSNL and private sector telecom service providers in Kerala.
  - The mobile service provider Airtel positively differentiated their services with excellent voice clarity and congestion free networks. The mobile service provider Idea differentiated their services with excellent geographical network coverage. The mobile service provider BSNL is the immediate close follower to Airtel with respect to congestion free networks and to Idea with respect to geographical network coverage.
  - In the focused comparison of delivery of core service benefits of each private sector mobile service provider with BSNL, it is found that the service benefits voice clarity and geographical network coverage do not significantly differ between Idea and BSNL. The BSNL positively differentiated the core service benefit characteristics 'Easiness to get connected to the network' than Idea. The service benefit voice clarity and easiness to get connected to the network do not significantly differ between the mobile service providers Vodafone and BSNL. But the service provider BSNL has positively differentiated their geographical network coverage from the service provider Vodafone. The service benefit characteristics 'Easiness to get connected to the network' does not significantly differ between the mobile service providers Airtel and BSNL. The mobile service provider BSNL positively differentiated the service benefit geographical network coverage from the service provider Airtel and the Airtel positively differentiated their services with excellent voice clarity from BSNL.
- ❖ The delivery of supplementary core service benefits specifically roaming facility and easiness to activate internet services significantly differ between BSNL and private sector telecom service providers in Kerala.

- In the delivery of supplementary core service benefits BSNL differentiated their services with excellent roaming facility and Airtel differentiated their services with their easier to activate internet services from all other service providers in Kerala.
- In the focused comparison of delivery of supplementary core service benefits of each private sector mobile service provider with BSNL, BSNL has the advantage of excellent roaming facility than other service providers. The easiness to activate internet services does not significantly differ among BSNL, Idea and Vodafone. The Airtel has positive differentiation from BSNL with regard to the supplementary service benefit – easiness to activate internet services.

❖ The customer support services specifically easiness to get new mobile connection, availability of recharge facility at customer convenient locations and retailer support for the prepaid customers significantly differ between BSNL and private sector telecom service providers in Kerala.

- The private sector telecom service providers positively differentiated their customer support services related prepaid services from BSNL with easiness in the availability of new mobile connection – SIM (Subscriber Identity Module) cards, availability of recharge facility at customer convenient locations and the assurance of retailer support to the customers.
- In the focused comparison of customer support services of each private sector mobile service provider with BSNL, it is further confirmed that the service providers Idea, Vodafone and Airtel have significantly higher levels in the values of the variables 'Very easy to get new mobile connection', 'Prepaid recharge available at convenient locations' and 'Retailer support to the customers' than the service provider BSNL. These private sector service providers positively differentiated the customer support services related to product availability of prepaid customers from the public sector service provider BSNL.

❖ The customer support services specifically easiness to get new post-paid mobile connection, convenience of payment of post-paid bills and special care for the

post-paid customers significantly differ between BSNL and private sector mobile telecom service providers in Kerala.

- It is very easier to get the post-paid mobile connections from the private sector mobile telecom service providers than BSNL. Moreover the private sector providers grant special care for their post-paid customers. The Vodafone facilitates most convenient bill payment facilities for customers than other service providers.

- In the focused comparison of customer support related to post-paid services of each private sector mobile service provider with BSNL, it is confirmed that the service providers Idea, Vodafone and Airtel have significantly higher levels in the values of the variables 'Very easy to get new post paid mobile connection' and 'Special care for post-paid customers' than BSNL. The variable 'Post-paid bill payment is convenient' do not significantly differ between the mobile service providers Idea, Airtel and BSNL. The Vodafone has positively differentiated post-paid services from the service provider BSNL with customer convenient bill payment facilities.

❖ The customer care services specifically easiness to activate additional services, easiness to deactivate additional services - if required, easiness to access customer care helpline, and easiness to get the right customer care person on the phone significantly differ between BSNL and Private sector telecom service providers in Kerala. The variable related to customer care services 'Ability to solve problems at customer care' doesn't significantly differ between BSNL and private sector telecom service providers in Kerala.

- The private sector telecom service providers differentiated their customer care services from the BSNL with their easier to access customer care helpline and easier to activate additional services. The mobile telecom service providers BSNL, Vodafone and Airtel have significantly higher levels in the values of the variable 'Very easy to deactivate additional services-if required' than the mobile telecom service provider Idea. The service providers Airtel and BSNL have significantly higher levels in the

values of the variable ‘Very easy to get the right customer care person on the phone’ than the mobile telecom service providers Vodafone and Idea.

- In the focused comparison of customer care services of each private sector mobile service provider with BSNL, it is further confirmed that the mobile service providers Idea, Vodafone and Airtel have positively differentiated the customer care services ‘Easiness to activate additional services’, and ‘Easiness to access customer care helpline’ from the mobile service provider BSNL. In addition to this, Airtel has positively differentiated their customer care services from BSNL with the variable ‘Easiness to get the right customer care person on the phone’. At the same time BSNL has positively differentiated the customer care service aspect ‘Easiness to deactivate additional services - if required’ from Idea. The elements of customer care services ‘Easiness to deactivate additional services - if required’, and ‘Easiness to get the right customer care person on the phone’ do not significantly differ between BSNL and Vodafone. Similarly the variable ‘Easiness to deactivate additional services - if required’ does not significantly differ between BSNL and Airtel.

❖ The factors of quality of service specifically *tangibility, responsiveness, assurance* and *empathy* significantly differ between BSNL and private sector telecom service providers in Kerala. The *reliability* factor of quality of service does not significantly differ between BSNL and private sector telecom service providers in Kerala. The private sector telecom service providers have significantly higher levels in the values of the dimensions of quality of service, *tangibility* and *responsiveness* than BSNL. The quality of service factor *assurance* is more for Vodafone than other telecom service providers. The *empathy* is significantly higher for Vodafone and Airtel than Idea and BSNL.

- In the focused comparison of quality of service of each private sector mobile service provider with BSNL, it is found that the mobile service providers Idea, Vodafone and Airtel have positively differentiated their quality of service from BSNL with significantly higher levels in the values of the factors *tangibility* and *responsiveness.* The mobile service provider

Vodafone has significantly higher level in the value of the variable *empathy* than BSNL. The quality of service factor *assurance* does not significantly differ between BSNL and Vodafone. The *assurance* and *empathy* do not significantly differ among Idea, Airtel and BSNL.

❖ The brand value significantly differs between BSNL and private sector telecom service providers in Kerala. The BSNL and Vodafone have significantly higher levels in the rating of brand value than the service providers Idea and Airtel.

- The focused comparison of brand value of each private sector mobile service provider with BSNL shows that, the BSNL has significantly higher level in the rating of brand value than the service providers Idea and Airtel. The brand value does not significantly differ between BSNL and Vodafone.

4.2 The pricing strategies of BSNL and private sector mobile telecom service providers in Kerala

Hypothesis 2

There is significant difference between the pricing strategies of BSNL and private sector mobile telecom service providers in Kerala.

The variables used to test the hypothesis are: tariff variety, competitive pricing and ethical pricing practices of mobile telecom service providers.

❖ The pricing strategies associated with tariff variety offered to prepaid customers specifically 'Easy to switch between tariff plans', 'Convenient recharge options', and 'Advise suitable tariff plans' significantly differ between BSNL and private sector telecom service providers in Kerala. The variable 'Variety of tariff plans' does not significantly differ between BSNL and private sector telecom service providers in Kerala.

- The private sector telecom service providers positively differentiated the prepaid services from BSNL with the variables 'Convenient recharge options', and 'Advise suitable tariff plans to the customers'. The switch over between tariff plans is easier with BSNL than other service providers.

- In the focused comparison of each private sector mobile service provider with BSNL, it is further confirmed that the private sector mobile service providers Idea, Vodafone and Airtel have significantly higher levels in the values of the variables 'Convenient recharge options', and 'Advise suitable tariff plans to the customers' than BSNL. The BSNL has significantly higher level in the value of the variable 'Easy to switch between tariff plans' than the service providers Idea and Vodafone. This variable does not significantly differ between the service providers Airtel and BSNL.

❖ The pricing strategies associated with the tariff variety offered to post-paid customers specifically 'Variety of tariff plans' and 'Advise suitable tariff plans' significantly differ between BSNL and private sector telecom service providers in Kerala. The variable 'Easy to switch between tariff plans' does not significantly differ between BSNL and private sector telecom service providers in Kerala.

- The service provider Airtel has more variety of tariff plans for their post-paid customers than other service providers. The private sector telecom service providers take keen interest to advise suitable tariff plans to their post-paid customers. The BSNL is highly reluctant in this aspect.

- In the focused comparison of post-paid services of each private sector mobile service provider with BSNL, it is found that the mobile service providers Idea and Vodafone have significantly higher levels in the values of the variable 'Advise of suitable tariff plans' than BSNL. This variable does not significantly differ between BSNL and Airtel. The variable 'Variety of tariff plans' does not significantly differ when BSNL compared against each of the private sector providers Idea, Vodafone and Airtel.

❖ The competitive pricing strategies specifically 'Better pricing as compared to others', 'Better offers as compared to others' and 'Value for Money Spends' significantly differ between BSNL and private sector mobile telecom service providers in Kerala.

- The service provider BSNL has more positive differentiation in better pricing and value for money than the private sector telecom service providers. The

private sector telecom service providers differentiated their services from BSNL with better offers.

- In the focused comparison of competitive pricing of each private sector mobile service provider with BSNL, it is further confirmed that the mobile service provider BSNL has significantly higher levels in the values of the variables, 'Better pricing as compared to others', and 'Value for Money Spends' than Idea, Vodafone and Airtel. The variable 'Better offers as compared to others' does not significantly differ among BSNL, Idea and Vodafone. The service provider Airtel has significantly higher levels in the value of the variable 'Better offers as compared to others' than BSNL.

❖ The ethical pricing practices specifically 'Transparent billing and no hidden charges, 'Ethical pricing practices', and 'Easiness to deactivate additional services - if required' significantly differ between BSNL and private sector telecom service providers in Kerala.

- The BSNL has positively differentiated their pricing strategies from other service providers with ethical pricing practices, transparent billing and no hidden charges. It is found that the service provider Idea is highly inclined to unethical practices. The deactivation of unwanted services as and when required by the customers is more difficult in Idea than other service providers.

- In the focused comparison of ethical pricing practices of each private sector mobile service provider with BSNL, it is further confirmed that the mobile service provider BSNL has significantly higher levels in the values of the variables 'Transparent billing and no hidden charges', and 'Ethical pricing practices' than the service providers Idea, Vodafone and Airtel. The service provider BSNL places higher value of the variable 'Easiness to deactivate additional services - if required' than the service provider Idea. But this variable does not significantly differ among BSNL, Vodafone, and Airtel.

4.3 The promotion strategies of BSNL and private sector mobile telecom service providers in Kerala

Hypothesis 3

There is significant difference between the promotion strategies of BSNL and private sector mobile telecom service providers in Kerala.

The variables used to test the hypothesis are: the effectiveness of advertisements, the attractiveness of website, the attractiveness of price reduction offers, the attractiveness of free trail offer, the attractiveness of free add-on SIM card offer, the attractiveness of extra talk time offer, the attractiveness of SMS package offers, the attractiveness of internet package, *call at zero balance* offer (prepaid customers), attractiveness of getting the service at *bill not paid status* (post-paid customers) of mobile telecom service providers, attractiveness of displays and demonstrations at point of sales, and attractiveness of customized offers. The opinion of respondents about promotional phone calls of mobile telecom service providers is also assessed.

- The effectiveness of advertisements significantly differs between BSNL and private sector mobile telecom service providers in Kerala. It is found that the advertisements of private sector telecom service providers are highly effective. The rating in the effectiveness of advertisement is the highest for the service provider Vodafone and it is followed by Idea and Airtel. The rating is the lowest for the service provider BSNL.

- The respondents visited the websites of the service providers are on an average 30.1%. The proportion of respondents visited the websites with respect to various service providers are: Airtel (36.1%), BSNL (32.9%), Idea (28.0%), and, Vodafone (26.2%). The websites of all the service providers are attractive. The service provider Airtel has comparatively more attractive website than other service providers.

    - The respondents received the price reduction offers from their service providers are on an average 46.7%. The proportion of respondents received price reductions offers from their service providers are: Vodafone (54.6%),

Idea (50.8%), Airtel (46.7%), and BSNL (35.3%). The private telecom service providers especially Vodafone and Idea are keen in offering and communicating price reduction rebates to customers than BSNL. The most attractive offers are from Airtel followed by BSNL. Although the price reduction offers of BSNL are attractive, it is not properly communicated to the customers.

- It is observed that from among private sector telecom service providers more than 25% of respondents received free trail offers from their service providers. The proportion of respondents received free trail offers from their service providers are: Vodafone (27.9%), Idea (26.1%), Airtel (25.4%), and BSNL (12.9%). The free trail offers of all the service providers are attractive. The most attractive among them are from Airtel and BSNL, but the free trail offers of BSNL are not reaching majority of their customers.

- The BSNL was more successful in implementing free add-on SIM card offer as compared to private sector providers. The proportion of respondents received free add-on SIM card offer from their service providers are: BSNL (23.9%), Airtel (11.5%), Vodafone (9.2%), and Idea (8.7%). This offer is attractive among all the telecom service providers.

- The BSNL and all the private telecom service providers equally successful in promoting the extra talk time offer. The proportion of respondents received extra talk time offer from their service providers are: Airtel (66.4%) Idea (64.4%), Vodafone (63.3%), and BSNL (63.1%). In the opinion of respondents the most attractive extra talk time offers are from Airtel and BSNL.

- The SMS package offers all the service providers are fairly attractive. The offers of Airtel and BSNL are more attractive than other service providers. The proportion of respondents received SMS package offers from their service providers are: Airtel (41.0%), Vodafone (33.6%), Idea (28.0%), and BSNL (18.0%). The SMS package of BSNL is attractive, but it doesn’t reach the customers.

- The internet package offers of all the service providers are moderately attractive. The most attractive offers among them are from Airtel. The proportion of respondents received internet package offers from their service providers are: Airtel (56.6%), Idea (41.3%), Vodafone (40.6%), and BSNL (23.9%). The Airtel is forefront in designing and communicating attractive internet packages for the customers than the other service providers. Although the internet package offers of BSNL is attractive, BSNL has an inadequacy in communicating this promotional offer to the customers.

- The *call at zero balance* offer allows customers to make calls even at zero balance for a limited amount. The amount in debit of the customer will be adjusted in the subsequent recharge. The proportion of respondents received *call at zero balance* offer from their service providers are: BSNL (77.0%), Vodafone (57.0%), Idea (46.3%), and Airtel (0%). This offer is highly attractive for the BSNL respondents, but moderately attractive for the Vodafone respondents and comparatively less attractive for the Idea respondents. The service provider Airtel doesn't have such an offer.

- The post-paid customers are the premium segment; they are high revenue contributing group among the mobile customers. As part of special care to this premium segment, the service provider Idea extends continued service to almost all of their post-paid customers even at non-payment of bills due to delay or oversight. The service providers Airtel and Vodafone extend this facility only to their selected post-paid customers. The public sector provider BSNL doesn't practice this strategy. The proportion of respondents belongings to post-paid segment received this offer from their service providers are: Idea (91.4%), Airtel (46.7%), Vodafone (24.1%) and BSNL (0%). The respondents find this offer highly attractive. The rating of attractiveness of this offer is the highest for the telecom service provider Idea and it is followed by the Airtel.

- The private sector service providers are forefront on promoting the services through POS (Point of Sales) displays and demonstrations than that of BSNL. Although the POS displays and demonstrations of all the service

providers are attractive, the most attractive among them are from Airtel. The proportion of respondents attracted to the displays and demonstrations at point of sales their service providers are: Vodafone (27.5%), Airtel (20.5%), Idea (20.1%), and BSNL (9.8%).

- The customization of offers at individual customer level is relatively a new trend in mobile telecom services marketing. The private telecom service providers are so aggressive in promoting their services through customization. The proportion of respondents received customized offers from their service providers are: Vodafone (74.7%), Idea (72.0%), Airtel (66.4%), and BSNL (0%). Irrespective of the service providers the respondents who received customized offers opined that the offers are highly attractive. The most attractive customized offers are from the service provider Airtel. The service provider BSNL doesn't practice such a promotional strategy.

- The private service providers are highly aggressive in promoting their services through phone calls to their customers. The proportion of respondents received promotional phone calls from their service providers are: Idea (80.3%), Airtel (75.4%), Vodafone (70.3%), and BSNL (7.8%). The respondents agreed in general that, this promotional activity of telecom service providers is highly inconvenient to them.

4.4 The effect of service related factors on customer satisfaction and customer loyalty of customers of mobile telecommunication services

Hypothesis 4

There is significant relationship between the service related factors specifically service benefits, customer support services, quality of service, competitive pricing, tariff variety and unethical practices in mobile telecom services sector and customer satisfaction.

The variables used to test the hypothesis are: customer satisfaction and loyalty of customers of mobile telecom services, service benefits, customer support

services, quality of service, competitive pricing, tariff variety and unethical practices of the mobile telecom service providers.

- ❖ The significant predictors of customer satisfaction of mobile telecom services are basic service benefits, customer support services, quality of service, competitive pricing, and unethical practices. The service related factor tariff variety and the demographic variables of the respondents' age, education and income are not significantly associated with customer satisfaction.
    - The delivery of high level of service benefits by the mobile service providers to the customers was found to be three times higher chance to have better customer satisfaction compared to the low level delivery of service benefits. The customer satisfaction was found to be two times higher for high level of customer support services compared to the low level of customer support services. The high level of quality of service contributes to three times more customer satisfaction than that of low level of quality of service. The customer satisfaction was 3.8 times higher for high level of competitive pricing compared to its low level. The low level of unethical practice was found have three times higher chance to generate better customer satisfaction as compared to high level of unethical practices of mobile telecom service providers.
- ❖ The customer satisfaction of customers of mobile telecom services has high positive correlation (correlation coefficient 0.773) with customer loyalty.

4.5 The marketing strategies related to the third generation (3G) mobile telecommunication services of BSNL and private sector mobile telecom service providers in Kerala

Hypothesis 5

There is significant difference between the marketing strategies related to the third generation (3G) mobile telecommunication services of BSNL and private sector mobile telecom service providers in Kerala.

The variables used to test the hypothesis are: basic service benefits of 3G mobile telecom services, quality of service, pricing strategies and promotion strategies of 3G mobile telecom service providers.

- The basic service benefits of 3G mobile telecom services geographical 3G network coverage, easiness of 3G handset settings, 3G roaming facility, and service support significantly differ between BSNL and private sector telecom service providers in Kerala. The other service benefits easiness to get connected to the 3G mobile network, and the speed of downloading do not significantly differ between BSNL and private sector telecom service providers in Kerala.
    - The service providers Idea, BSNL, Vodafone and Airtel have significantly higher levels in the values of the variables 'Geographical 3G network coverage' and 'Roaming facility' than the service provider Tata Docomo. The service provider Vodafone has at the top in delivering these 3G service benefits to the customers.
    - The service providers Vodafone, Tata Docomo and Airtel have significantly higher levels in the value of the variable 'Easiness in 3G handset settings' than the other service providers Idea and BSNL. The rating in the value of this variable is the highest for the service provider Vodafone and the lowest for the service provider BSNL.
    - The service providers Idea, Vodafone, Tata Docomo and Airtel have significantly higher levels in the value of the variable 'Mobile 3G service support is excellent' than the service provider BSNL. The rating in the value of the variable is higher for the service providers Idea and Airtel than the other service providers. The rating is the lowest for the service provider BSNL.
- The elements of quality of service of 3G Mobile Services specifically 'Services are dependable', 'Ready to respond to the customer needs', and 'Understand the needs of customers and give personal attention to them' significantly differ between BSNL and private sector telecom service providers in Kerala. The 3G mobile telecom services of Idea, Vodafone and Airtel are more dependable than that of Tata Docomo and BSNL. The service providers Idea, Vodafone, Tata

Docomo and Airtel have significantly higher levels in the value of the variables 'Ready to respond to the customer needs' and 'Understand the needs of customers and give personal attention to them' than the service provider BSNL. The rating in the value of variable 'Ready to respond to the customer needs' is the highest for Vodafone and the lowest for the service provider BSNL. The other elements **'**Modern facilities for customers', and 'Employees are knowledgeable and polite' do not significantly differ between BSNL and private sector telecom service providers in Kerala.

- The pricing strategies of 3G Mobile Services specifically 'Variety of Tariff plans', 'Transparent billing and no hidden charges', and 'Better pricing for 3G services as compared to other service providers' significantly differ between BSNL and private sector telecom service providers in Kerala. The variety of 3G tariff plans is more with Tata Docomo and Airtel than the other service providers. The service providers BSNL, Vodafone, Tata Docomo and Airtel have significantly higher rating in the value of the variable 'Transparent billing and no hidden charges in 3G services' than the service provider Idea. The rating in the value of the variable is the highest for BSNL and the lowest for the service provider Idea.

  - The service provider Tata Docomo has the highest rating in the value for the variable 'Better pricing for 3G services as compared to other service providers'. The rating in the value of this variable is moderate for the service providers BSNL, Vodafone and Airtel. The rating is the lowest for the service provider for Idea.

  - The variable 'Value for money' does not significantly differ between BSNL and private sector telecom service providers in Kerala.

- The service provider Tata Docomo is so aggressive in promoting the 3G services through price reduction offers. The proportion of respondents received price reductions offers from their service providers are: Tata Docomo (88.1%), Idea (41.0%), Vodafone (39.0%), Airtel (29.4%) and BSNL (16.0%). The private telecom service providers are studious in offering and communicating price reductions to customers than BSNL. The price reduction offers of all service

providers are highly attractive. The most attractive offers are from Airtel and it is followed by BSNL. The private service providers are studious in communicating the offers to the customers than BSNL.

- The service provider Tata Docomo is highly aggressive in the promotion of 3G services through free trail offers. The proportion of respondents received free trail offers from their service providers are: Tata Docomo (76.2%), Vodafone (63.4%), Idea (49.2%), Airtel (38.2%) and BSNL (16.0%). The 3G free trail offers of all service providers are highly attractive. The most attractive offers are from Tata Docomo followed by Airtel. The private service providers are extremely successful in reaching their customers with this offer. The service provider BSNL seems to be a failure to reach the customers with their offers, even though the offers are attractive.
- The service provider Tata Docomo is forefront in promoting 3G services through POS (Point of Sales) displays and demonstrations than other service providers. The proportion of respondents attracted to the displays and demonstrations at point of sales their service providers are: Tata Docomo (42.9%), Vodafone (24.4%), Airtel (23.5%), Idea (23.0%) and BSNL (16.0%). The POS displays and demonstrations of all the service providers are attractive. The highest ranking with respect to attractiveness of POS displays and demonstrations are for the Airtel and the lowest ranking is for the BSNL.

❖ The customer satisfaction of 3G mobile customers do not significantly differ between BSNL and private sector telecom service providers in Kerala. The customers are moderately satisfied with their 3G service providers. There is significant relationship between the services related factors specifically service benefits, quality of service and pricing of 3G mobile telecommunication services and customer satisfaction. The customer satisfaction of customers of 3G mobile telecom services has high positive correlation with basic service benefits (correlation coefficient 0.650), pricing of services (correlation coefficient 0.520) and quality of service (correlation coefficient 0.514).

❖ The factors influenced to subscribe for the 3G mobile telecom services of a service provider specifically 'Attractive Offers', 'Attractive Pricing', 'Support Services', 'Image of Service Provider' 'Advertisements', and 'Recommendation by Friends or Family members' significantly differ between BSNL and private sector telecom service providers in Kerala. The factor 'Essential need for the services' does not significantly differ between BSNL and private sector telecom service providers in Kerala.

- The major factor which influenced to subscribe for the 3G mobile telecom services is the essential need of the customers for the services, irrespective of the service providers except Tata Docomo. The prime influencing factors with regard to Tata Docomo are attractive pricing and attractive offers. In general the factors, of the order of its weightage, which influenced the customers to subscribe for 3G services are: (i) Essential need for the services, (ii) Image and reputation of the service provider , (iii) Friendly customer support services, (iv) Attractive pricing, (v) Attractive offers, (vi) Recommendation by friends/family members, and (vii) Advertisements.

- The effect of factors which influenced the customers to subscribe for the 3G services is different for different service providers. Apart from the essential need for the services, the important factors of the order of its weightage, which influenced the customers of the each service provider to subscribe for 3G services, are as follows. Idea: (i) Friendly customer support services, (ii) Image and reputation of the service provider, and (iii) Attractive pricing. BSNL: (i) Image and reputation of the service provider, (ii) Attractive pricing, and (iii) Recommendation by friends/family members. Vodafone: (i) Image and reputation of the service provider, (ii) Friendly customer support services, and (iii) Attractive pricing. Airtel: (i) Image and reputation of the service provider, (ii) Friendly customer support services, and (iii) Recommendation by friends/family members. Tata Docomo: (i) Attractive pricing, (ii) Attractive offers, (iii) Essential need for the services, and (iv) Friendly customer support services.

❖ The factors affecting adoption of 3G mobile services are studied based on the variables 'Lack of network coverage of 3G mobile services', 'High pricing of 3G mobile services', 'High cost of 3G mobile handsets', 'Difficulty to learn the method of operation of 3G handsets' and 'The services are not essential for the customer'. It is found that these variables do not significantly differ between two groups of respondents: (i) educational profile - graduation and above and (ii) educational profile - below graduation. But these factors except 'Lack of network coverage of 3G mobile services' significantly differ between two groups of respondents: (i) age up to 30 years and (ii) age above 30 years. Similarly the factors affecting adoption of 3G mobile services' High pricing of 3G mobile services', 'High cost of 3G mobile handsets', and 'The services are not essential for the customer' significantly differ between two income groups of respondents: (i) annual income up to 2 lakhs and (ii) annual income more than 2 lakhs.

- It is found that the major adoption issues of 3G mobile services among youngsters are high cost of 3G mobile handsets and high pricing of 3G services. These issues are more prominent among youngsters belonging to low income group. The leaning difficulty is not at all an issue among youngsters irrespective of their income status. Even though the learning difficulty in the operation of 3G handsets is not a serious adoption issue among the mobile customers, the elders perceived more learning difficulty in the operation of 3G handsets than youngsters. The major 3G adoption issue of elders is that they could not recognize the need for 3G services. The income level has not much influence in this perception of elder segment. The high cost of mobile 3G handsets is a restricting factor to the adoption of 3G services among the elders of low income group. The lack of network coverage of 3G mobile services is also an issue related to the adoption of 3G services.

4.6 The relatedness of demographic profile of respondents and preference for a particular mobile telecom service provider

The Chi-Square test is used for testing the relatedness or independence of demographic variables specifically age, gender, educational qualification, employment status, income, and locality of sample respondents and preference for a particular mobile telecom service provider.

Hypothesis 6.1

Ho: The age of the respondents and preference for a particular mobile telecom service provider are independent of each other.

Ha: There is significant relationship between the age of the respondents and preference for a particular mobile telecom service provider.

❖ The hypothesis test results proved that there is significant relationship between the age of the respondents and preference for a particular mobile telecom service provider.

- The respondents belonging to the younger generation show more preference for private sector mobile service providers than BSNL.
- The respondents belonging to the age group above fourty years show clear inclination towards BSNL as compared to private sector mobile service providers.

Hypothesis 6.2

Ho: The gender of the respondents and preference for a particular mobile telecom service provider are independent of each other.

Ha: There is significant relationship between the gender of the respondents and preference for a particular mobile telecom service provider.

❖ The hypothesis testing proved that there is no significant relationship between the gender of the respondents and preference for a particular mobile telecom service provider.

Hypothesis 6.3

Ho: The educational qualification of the respondents and preference for a particular mobile telecom service provider are independent of each other.

Ha: There is significant relationship between the educational qualification of the respondents and preference for a particular mobile telecom service provider.

❖ The hypothesis testing proved there is significant relationship between the Educational Qualification of the respondents and preference for a particular mobile telecom service provider.

- The respondents belonging to the segment of educationally low profile show more preference for the mobile telecom service providers Idea or Vodafone and educationally high profile give more preference for the mobile telecom service providers BSNL or Airtel.

Hypothesis 6.4

Ho: The Employment Status of the respondents and preference for a particular mobile telecom service provider are independent of each other.

Ha: There is significant relationship between the Employment Status of the respondents and preference for a particular mobile telecom service provider.

❖ The hypothesis test results proved that, there is significant relationship between the Employment Status of the respondents and preference for a particular mobile telecom service provider.

- The respondents belonging to the category of government employees give more preference for BSNL than private sector mobile service providers.
- The respondents belonging to the category of private sector employees prefer private sector mobile service providers to BSNL.
- The respondents with employment status ‘Business’ do not show much variation in their preference for a particular mobile service provider. However this category gives slightly more preference for private sector mobile service providers than BSNL.

- The respondents belonging to the category of self-employed prefers Vodafone or Idea than BSNL or Airtel.
- The student category from the sample respondents shows almost same preference for all the mobile service providers.
- The Housewives from the sample respondents shows relatively more preference for Idea, moderate preference for BSNL and Vodafone and less preference for Airtel.
- The majority of the respondents belonging to 'Retired' category prefer BSNL to other service providers.

Hypothesis 6.5

Ho: The Annual Family Income of the respondents and preference for a particular mobile telecom service provider are independent of each other.

Ha: There is significant relationship between the Annual Family Income of the respondents and preference for a particular mobile telecom service provider

❖ The hypothesis testing proved that, there is significant relationship between the annual family income of the respondents and preference for a particular mobile telecom service provider.

- The respondents belonging to the segment of the low income profile give more preference for the mobile telecom service providers Idea or Vodafone and the high income profile give more preference the mobile telecom service providers BSNL or Airtel.

Hypothesis 6.6

Ho: The Locality of the respondents and preference for a particular mobile telecom service provider are independent of each other.

Ha: There is significant relationship between the Locality of the respondents and preference for a particular mobile telecom service provider.

- ❖ The testing of hypothesis proved that, there is significant relationship between the locality of the respondents and preference for a particular mobile telecom service provider.
    - The respondents belonging to rural locality mainly prefer Idea or Vodafone for their mobile communication needs than other service providers.
    - The respondents belonging to urban locality segments show more preference for Airtel or BSNL than other service providers.

4.7 The services marketing aspects of landline and landline broadband internet services

The landline industry in Kerala is facing the declining stage of the product life cycle. The landline subscriber base in Kerala as on March 2013 is 30.65 lakhs. The landline telecom service providers in Kerala with their respective subscriber base and market share are: BSNL (29.44 lakhs, 96.04%), Airtel (0.56 lakhs, 1.83%), Reliance (0.54 lakhs, 1.76%), and Tata (0.11 lakhs, 0.37%)[2]. The services marketing aspects of landline telephone services are studied mainly based on four variables. The variables are: the product benefits and service support, pricing attractiveness, employee attitude and product (landline) retention possibility.

Hypothesis 7.1

There is significant relationship between the landline retention possibility and the service related factors specifically product benefits and service support, pricing attractiveness, and employee attitude of landline telecom services.

- ❖ The correlation is significant between the landline retention possibility and the service related factors specifically product benefits and service support, pricing attractiveness, and employee attitude of landline telecom services. The product benefits and service support has high positive correlation (correlation coefficient 0.626) with the landline retention possibility. The pricing attractiveness

[2] Press releases on subscriber data, March 2013. Telecom Regulatory Authority of India. www.trai.gov.in

(correlation coefficient 0.567) and employee attitude (correlation coefficient 0.528) are also positively correlated with the landline retention possibility.

- The private landline service providers especially Airtel positively differentiated their landline services with better 'Product benefits and service support' and 'Employee attitude' than BSNL. The pricing attractiveness is comparatively higher for Reliance and BSNL landlines than Airtel and Tata. The retention possibility is comparatively high for Airtel and BSNL landlines, moderate for Reliance and comparatively low for Tata landline services. Although the retention possibility is comparatively more for BSNL, its variance is very high among the responses of customers than that of private sector providers. The mean score value of retention possibility of landline services lies in between uncertainty and agreeable levels of responses of the customers. This shows an unfavorable business situation for landline services.

Hypothesis 7.2

There is significant relationship between the customer satisfaction and the service related factors specifically 'product benefits and service support' and 'pricing attractiveness' of landline broadband internet services.

The services marketing aspects of landline broadband internet services are studied mainly based on three variables. The variables are: the product benefits and service support, pricing attractiveness, and customer satisfaction.

❖ The correlation is significant between customer satisfaction and the service related factors specifically 'Product benefits and service support' and 'Pricing attractiveness' of landline broadband internet services. The customer satisfaction has high positive correlation with product benefits and service support (correlation coefficient 0.618) and pricing attractiveness (correlation coefficient 0.610) of landline broadband internet services.

- The private landline service providers positively differentiated their landline broadband internet services with better product benefits and service support than BSNL. The product benefits and service support include uninterrupted

internet connectivity, getting the download speed as assured in the broadband plan, excellent customer support and excellent overall quality of broadband internet services.

- The pricing attractiveness is comparatively higher for BSNL landlines broadband services than the private sector providers. The customers are generally satisfied with landline broadband internet services. Although the satisfaction level is slightly higher for BSNL, its variance is very high among the responses of customers than that of private sector providers.

❖ The opinion of respondents of landline broadband services about the retention of their landline services is ascertained through the item: 'Broadband internet is the main factor which forced the customer to retain the landline connection'. It is observed that nearly 60% of respondents of BSNL landline broadband services retained their landline services only for availing broadband internet connectivity; whereas in private sector the corresponding value is 17% only. The majority of the respondents of private sector landline broadband services find the utility of landline services along with broadband internet services.

It is evident from the above findings that the product differentiation strategies, pricing strategies, advertisement and sales promotion strategies, and the marketing strategies related to the third generation (3G) mobile telecommunication services significantly differ between the public sector service provider BSNL and the private sector telecom service providers in Kerala. The effect of relationship of service related factors of mobile telecom services specifically service benefits, customer support services, quality of service, competitive pricing, and unethical practices on customer satisfaction is established. The customer satisfaction has high positive correlation with customer loyalty. The suggestions, recommendations and conclusion based on these findings of the study are presented in the following chapter.

CHAPTER - V

SUGGESTIONS, RECOMMENDATIONS AND CONCLUSION

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In the previous chapter, the researcher has given the findings of the analysis of effectiveness of various marketing strategies adopted by the public sector telecom service provider BSNL and major private sector telecom service providers in Kerala. It provides a clear picture of product differentiation strategies, the pricing strategies, and the promotion strategies of BSNL and private sector mobile telecom service providers in the mobile telecom services market of Kerala. The marketing strategies significantly differ between BSNL and private sector providers. The marketing strategies related to the third generation (3G) mobile telecommunication services, the services marketing aspects for landline telephone services, and landline broadband services were discussed in detail. It is found that the strong predictors of customers satisfaction of mobile customers are service benefits, customer support services, quality of service, competitive pricing, and unethical practices of service providers. In this chapter the researcher seeks to give suitable suggestions and recommendations worthwhile to consider, followed by the conclusion.

5.1 Suggestions and recommendations

The researcher has been able to list out following suggestions and recommendations in the light of findings of the study.

- The service providers should ensure superior delivery of the basic core service benefits of mobile telecom services such as voice clarity, geographical network coverage, and congestion free networks to have a lead role in the mobile telecom services market.
- The service providers should ensure excellent roaming facility to attract and retain the segment of travelling customers outside the State. The roaming services of BSNL can be taken as a model for other service providers.
- The service providers would like to attract the internet savvy customers, especially youngsters should provide easy to activate mobile internet services.

The internet services of Airtel can be taken as a model for other service providers.

- The new mobile connection - the SIM (Subscriber Identity Module) card and recharge facility of private sector mobile telecom service providers are easily available at customers' convenient locations. The private service providers extend adequate support for their retailers. This in turn reflected to the customers as helpful support of retailers. In practice the multi brand retailer outlets become the customer support centers of private sector telecom service providers. The exclusive customer care centers of BSNL are far behind the reach of this effective retail network of private providers. The BSNL should strengthen their retail network through the widely available multi brand retailer outlets. The BSNL should simplify the process and procedures toward customers at all interfaces. The BSNL should develop and nurture a customer and retailer friendly and supportive approach.

- The post-paid customers are the premium segment of mobile telecom services. The service provider Vodafone's style of treatment of post-paid customers can be taken as a model for other service providers. They support the post paid customers with easy to get mobile connection, customer convenient bill payment facilities, and special care. The private telecom service providers extend continued service to their post-paid customers even at non-payment of bills due to delay or oversight. The BSNL should introduce this facility for all of their genuine post-paid customers. The BSNL should take utmost care to improve their support services towards post paid customers. The service providers should segment the high value customers in post-paid and prepaid category and support them with special consideration, care and attention.

- There is ample scope for all service providers especially the public sector service provider BSNL to further improve their customer care services. The service providers should provide: trouble-free access to customer care touch points, effortless activation of value added services, uncomplicated deactivation of the services as and when required, knowledgeable and

empowered customer care personnel. They should show enthusiasm to solve customers' problems at all interfaces.

- The service provider BSNL should substantially improve the quality of service elements *tangibility*, *responsiveness*, and *empathy*. The service provider Idea has to further improve the *reliability, responsiveness,* and *empathy*. The service provider Airtel has to take care to improve the *empathy*. The Vodafone services are of better quality as compared to other service providers. The service providers should strive hard to continually improve their quality of service.
- The leading service providers Idea, BSNL, Vodafone and Airtel have very good brand value in Kerala. Among them BSNL and Vodafone enjoy high brand value. The service providers should try to enhance their brand value through meaningful differences distinctive from other operators.
- The private sector telecom service providers should allow their customers to easily switch over between the tariff plans. They can take BSNL as a model in this aspect.
- In order to attract low income groups and daily earners BSNL should introduce small denomination recharge facility and make it available at customers' convenient locations. The BSNL should advise tariff plans to the customers suitable for individual usage. The strategies of leading private sector providers in these aspects can be taken as a model for BSNL.
- The pricing strategies of BSNL are ethical pricing practices, transparent billing and no hidden charges. The customers found better pricing and value for money with BSNL. The unethical pricing practices are prevalent among private sector providers especially with the service provider Idea. All service providers primarily the private sector providers should abstain from the dishonest business practices.
- It is found that the deactivation of unwanted services as and when required by the customers is very difficult with all service providers. This practice is quite obvious with the service provider Idea. This is an unethical practice, because

the service provider unnecessarily takes money from the customer for the services which did not require by the customers.

- The BSNL should utilize the possibility of advertisements in their marketing communication. The marketing communication practices of private sector telecom providers can be taken as model for BSNL.
- The service providers should take initiatives to attract the internet familiar customers, to their websites to make the marketing communication more effective.
- The majority of the sales promotion offers of BSNL such as price reductions offers, free trail offers, SMS package offers and internet package offers are highly attractive. But the offers do not rightly reach the targeted customers. The BSNL should aggressively communicate and ensure that their sales promotion offers must reach the targeted customers, as the private operators do.
- The aggressiveness in promoting attractive SMS and Internet packages will help service providers to attract and retain the students and younger age groups.
- The *call at zero balance* offer allows customers to make calls to a limited amount even at zero balance. The amount in debit of the customer will be adjusted in the next recharge. The BSNL should continue this offer as it is most attractive and extremely popular among BSNL prepaid customers. The other service providers can take BSNL as model with respect to this offer.
- All service providers especially BSNL should redesign their displays and demonstrations at point of sales to gain the attraction of more customers. At present the proportion of respondents gained attention to the displays and demonstrations are only 20%.
- The private telecom service providers are extremely successful in offering customized services to their customers. This facility is of great attraction among their customers. The BSNL should introduce customized offers for the individual customers.

- The private service providers are so aggressive in promoting their services through phone calls to their customers. The respondents opined that the promotion of services through phone calls is highly inconvenient to them. Therefore the service providers, especially private sector providers may resort to other marketing communication channels than the outbound dialing.
- The strong predictors of customer satisfaction of mobile customers are service benefits, customer support services, quality of service, competitive pricing, and unethical practices. The customer satisfaction has high positive correlation with customer loyalty. To build a loyal customer base, the service providers should consistently deliver superior service benefits, customer support services, quality of service and competitive pricing. The service providers should abstain from all unethical business practices towards customers.
- The prominent 3G mobile telecom service providers in Kerala are Idea, BSNL, Vodafone, Airtel and Tata Docomo. The 3G services of all the service providers do not have extensive geographical network coverage in Kerala especially in rural areas. The network coverage of Tata Docomo is very less as compared to other service providers. The Tata Docomo compensated this deficiency through very attractive pricing and promotion strategies. To attract more customers to the 3G services, the operators should expand their geographical network coverage in Kerala.
- The BSNL should substantively improve their 3G customer support services. They can take the leading private sector telecom service providers as a model in this aspect.
- The value of rating in respect of transparent billing is the lowest for the service provider Idea. Therefore the service provider Idea should take care to enhance their image on transparency in billing.
- The majority of the mobile telecom customers do not recognize the need for 3G services. The need arousal among exiting mobile customers is a great task before the service providers to popularize the 3G services. The other important 3G adoption issues are high pricing of 3G services, high cost of 3G mobile

handsets and lack of geographical 3G network coverage. The service providers should formulate strategies to overcome these barriers.

- The demographic segments such as younger age groups, private sector employees, customers in low income profile, low educational profile, and rural residents show clear inclination towards private sector service providers. Therefore BSNL may formulate appropriate strategies to attract these customer segments.
- The demographic segments such as government employees and customers of age group above fourty years show clear inclination towards BSNL. Therefore Private sector Telecom service providers may formulate suitable strategies to attract these customer segments.
- The landline segment of telecom industry in Kerala is facing decline stage of product life cycle (PLC). The landline telecom service providers of Kerala are BSNL, Airtel, Reliance and Tata. The BSNL is the major stake holder of this segment. In the landline segment, the product benefits and service support, pricing attractiveness, and employee attitude have high positive correlation with the landline retention possibility. In the landline broadband services the customer satisfaction has high positive correlation with the service related factors specifically 'Product benefits and service support' and 'Pricing attractiveness'. Nearly 60% of respondents of BSNL landline broadband services opined that they retained their landline services only for availing broadband internet connectivity. As a strategic effort to give existence to the landline industry, BSNL may attempt service quality improvement initiatives and value addition with broadband internet services. The attitude of employees in the BSNL landline segment has to be substantially improved. The appropriate marketing strategies of pricing and promotion may also help the service providers to further strengthen the landline industry in Kerala.

5.2 Conclusion

The telecommunication services are the lifeblood of modern world. The advancement of telecom services revolutionized the lives of people. The interplay of continuous innovations in technology and marketing generated new horizons of

amazing services. From the plain old telephone services (POTS), the world is now witnessing the fourth generation mobile telecom services and beyond. The Indian telecom services sector experienced major reforms and transformations during the last two decades. The monopoly of government sector in telecom services ended and the domestic and foreign private players began to develop the telecom services sector to a great extent by exploring the market opportunities. The landline telephones are widely substituted by cost effective mobile telecom services.

The telecom service providers wholly utilized the huge market potential of the State of Kerala, resulted in the saturation of telecom services market. The appropriate marketing strategies became imperative for the existence and prosperity of telecom service providers. The formulation and execution of marketing strategies significantly differ between BSNL and private sector telecom service providers. The research brings clarity to the marketing strategies adopted by the public sector telecom service provider BSNL and private sector telecom service providers in the thriving telecom services market of Kerala. The comparative study of market performance of telecom service providers in multiple facets lightened the hidden planes of marketing strategies of various telecom service providers.

There is ample scope for all service providers to further improve their service benefits such as voice clarity, geographical network coverage and congestion free networks. The BSNL has to enormously improve their customer support and customer care services. The private sector telecom service providers are highly aggressive in promotion and distribution strategies. The aggressiveness in promotion and distribution will definitely help BSNL to expand their subscriber base. The customers found better pricing and value for money with BSNL. The unethical pricing practices are common among private sector providers. All service providers especially the private sector providers should abstain from the unethical business practices towards customers.

The research revealed that the strong predictors of customer satisfaction of mobile telecom services are service benefits, customer support services, quality of service, competitive pricing, and unethical practices. The consistency in maintaining the customer satisfaction will become the foundation for the loyal customer base.

In the telecom services market of Kerala, the customers are well-informed and more demanding. They are excited for getting the services customized at individual level and expect them to be offered at lower prices. The expectation of customers about the quality of service is extremely elevated in Kerala due to their experience in the hyper competitive telecom market. In the saturated telecom market of Kerala, the telecom service providers should strive hard to consistently exceed the expectations of customers to retain them and devise suitable marketing strategies to acquire customers from the competitors. The quote by Peter F. Drucker is more relevant now: "Business has only two functions - Marketing and Innovation."

5.3 Scope for future research

In the study of marketing strategies of telecom service providers of Kerala, the researcher has come across many interesting related research areas. The boundary of any research work is limited by the objectives set for the study; the newly identified topics give the scope for future research studies. Indeed certain findings of the current research generated important issues to be explored. The following themes could be considered for future research.

- A study may be undertaken to identify and illustrate different marketing strategies related to wholesale business, and Business to Business (B_2B) solutions offered by the telecommunication service providers.
- In the saturated mobile telecom services market of Kerala with intense competition, the service providers are facing difficulty of product differentiation using conventional services marketing mix. The consumers' purchase decisions are influenced by their perceived emotions. Therefore the possibility of using emotional benefits in the formulation of differentiation strategies and its effects could be researched.
- The internal marketing which enables employees to keep the promises that have been communicated to the customers by the Organization. An exhaustive research study may be conducted to explore the internal marketing strategies of public and private sector telecommunication service providers.

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APPENDICES

APPENDIX -I

QUESTIONNAIRE

Dear Sir / Madam,

This questionnaire is designed to study the marketing strategies of telecommunication services provided by different telecom service providers in Kerala. I request you to spare a few minutes to express your views on telecommunication services availed by you. This study is conducted as a part of my Ph.D programme. Your responses will be kept strictly confidential and I assure that the data collected will be utilised only for academic research purpose.

With Sincere Gratitude

Sabu. V.G
Research Scholar,
School of Management and Business Studies,
Mahatma Gandhi University, Kottayam.

QUESTIONNAIRE

[Note: For multiple choice options, please put tick mark **[✓]** against your choice.]

I. Personal Data

1) Name :……

2) Place of Residence :……

3) Locality : (a) Panchayat (b) Municipality (c) Corporation

4) Age : (a) Less than 20 years (b) 20 years to 30 years
(c) 30 years to 40 years (d) 40 years to 50 years
(e) 50 years to 60 years (f) More than 60 years

5) Gender : (a) Male (b) Female

6) Educational Qualification:

(a) Below 10^{th} Standard (b) 10^{th} Standard Pass - Below Graduation

(c) Graduation and Above (d) Professional / Technical Degree

(e) Others (Please Specify)……

7) Employment Status:

(a) Government Service (b) Private Sector (c) Business

(d) Professional (e) Self Employed (f) Student

(g) Retired (h) House wife

(i) Others (Please specify)……

8) Please specify your annual family income.

(a) Upto Rs. 2 Lakhs (b) Rs. 2 Lakhs to Rs. 5 Lakhs

(c) Rs. 5 Lakhs to Rs. 10 Lakhs (d) More than Rs. 10 Lakhs

9) Please specify the details of mobile connection(s) you possess now.

Mobile Service Provider	Number of Mobile Connections availed for Voice services	Years of Association	Prepaid	Post-paid	Average Monthly Spending for Basic Services

10) Please specify your **most preferred mobile connection** (Mobile Service Provider) from among the above.

……

Please indicate responses to the following queries based on your most preferred mobile connection mentioned above.

II. Core benefits and Support services of Mobile phone connection

To what extent do you agree with the following statements with respect to your mobile phone service? Please indicate your responses based on the scale mentioned below.

SA: Strongly Agree **A:** Agree **U:** Uncertain **D:** Disagree **SD:** Strongly Disagree

Core Benefits	**SA**	**A**	**U**	**D**	**SD**
My mobile connection provides excellent Voice Clarity.					
My mobile connection provides excellent Geographical Network Coverage.					
It is very easy to get connected to the network so that I can make or receive calls easily.					
The Roaming facility is excellent.					
It is very easy to activate internet services.					
Support Services	**SA**	**A**	**U**	**D**	**SD**
It is very easy to get a new mobile connection (SIM card); the related processes and procedures are friendly.					
Activation of additional services can be done very easily in my mobile connection.					
Deactivation of additional services, if required, can be done very easily in my mobile connection.					
It is very easy to access customer care helpline.					
It is easy to get the right customer care person on the phone.					
The ability to solve problems at customer care is excellent.					
The mobile service recharge facility / recharge cards are available at convenient locations (For **prepaid** customers).					
The retailers of my service provider extend helpful customer support. (For **prepaid** customers).					
The payment of bills can be done conveniently (For **post-paid** customers).					
As a post-paid customer I am getting a special care from my service provider (For **post-paid** customers).					

III. Quality of Service

To what extent do you agree with the following statements with respect to the quality of mobile phone service? Please indicate your responses based on the scale mentioned below.

SA: Strongly Agree **A:** Agree **U:** Uncertain **D:** Disagree **SD:** Strongly Disagree

Tangibility	**SA**	**A**	**U**	**D**	**SD**
My service provider has modern Facilities for the customers.					
The physical facilities provided by the service provider are visually appealing.					
The employees of my service provider have a neat and professional appearance.					
Pamphlets, brochures, materials associated with the services are visually appealing.					
Reliability	**SA**	**A**	**U**	**D**	**SD**
My service provider fulfills its promises.					
When you have problems, the service provider is sympathetic and reassuring.					
My service provider is dependable.					
My service provider provides the services at the time it promises to do so.					
My service provider keeps its records accurately.					
Responsiveness	**SA**	**A**	**U**	**D**	**SD**
Employees of the service provider will intimate the customers exactly when services will be performed.					
Employees will provide prompt services to the customers.					
Employees are always willing to help the customers.					
Employees are always ready to respond to the customers' requests.					
Assurance	**SA**	**A**	**U**	**D**	**SD**
Customers can trust employees of the service provider.					
Customers feel comfortable interacting with employees.					
The employees are polite to the customers.					
Employees have knowledge to answer customers' queries.					
Empathy	**SA**	**A**	**U**	**D**	**SD**
My service provider gives individual attention to the customers.					
The employees give personal attention to the customers.					
The employees of service provider do understand the needs of the customers.					
Having the customers' best interest at heart.					
My service provider has operating hours convenient to the customers.					

IV. To what extent do you agree with the following statements with respect to your mobile phone service? Please indicate your responses based on the scale mentioned below.

SA: Strongly Agree **A:** Agree **U:** Uncertain **D:** Disagree **SD:** Strongly Disagree

Brand Value of Mobile phone service	**SA**	**A**	**U**	**D**	**SD**
My service provider established a brand which is distinctive from other operators.					
My service provider established a brand which always making the difference relevant from other operators.					
My service provider established a brand which is popularly regarded and respected.					
My service provider established a brand which is well-known and reflected as a successful outcome.					
Variety of tariff plans	**SA**	**A**	**U**	**D**	**SD**
Attractive varieties of tariff plans are offered by my mobile service provider.					
It is very easy to switchover from existing tariff plan to any other tariff plan.					
Recharge facility available for convenient options (For **prepaid** customers).					
My mobile service provider advises me about tariff plans suitable for my usage.					
Value for money	**SA**	**A**	**U**	**D**	**SD**
The pricing of my mobile services are better as compared to competition mobile services.					
The offers are attractive as compared to competition mobile services.					
The charging for services are transparent and there are no hidden charges.					
My service provider didn't play unethical pricing practices.					
The mobile services deliver the real value for money spend on it.					
Advertisements	**SA**	**A**	**U**	**D**	**SD**
The messages conveyed through the advertisements are highly informative.					
The advertisements create liking, preference and faith for the service provider.					
The advertisements act as reminder to stimulate repeat association with the service provider.					
The advertisements convince me that my decision to continue with the service provider is a right choice.					

V. (1) Have you ever received following offers/attractions from your service provider? If your answer to any of the following item(s) is "**Yes"**, Please indicate your level of agreement with respect to the **attractiveness of the offer**.

SA: Strongly Agree **A:** Agree **U:** Uncertain **D:** Disagree **SD:** Strongly Disagree

Have you ever received following offers/attractions from your service provider? Please put tick mark **[✓]** against your choice			If your answer is **Yes**, to what extent **do you agree** with the statement "**The offer cited is Attractive "**				
Offers	**Yes**	**No**	**SA**	**A**	**U**	**D**	**SD**
Rebate / Price Reduction offers							
Free Trial of newly introduced services							
Free add-on SIM card							
Extra talk time offers							
SMS Package offers							
Internet Package offers							
Facility to make calls even at zero balance. (For **prepaid** customers).							
Getting the services even at non-payment of bills due to delay or oversight. (For **post-paid** customers).							
Displays and demonstrations at the point of sales							
Specialized pricing offers exclusively for you							

(2) Are you receiving promotional offers through mobile phone calls?

a. Yes **b. No**

If your answer is **Yes**, to what extent do you agree with the following statement.

"The promotional offers of the mobile service provider through mobile phone calls are inconvenient to the customers."				
Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

VI. Website

Do you **visit** the **website** of your Mobile service provider?

a. Yes **b. No**

If your answer is "**Yes**", to what extent do you agree with the following aspects with respect to the website of your mobile service provider? Please indicate your responses based on the scale mentioned below.

SA: Strongly Agree **A:** Agree **U:** Uncertain **D:** Disagree **SD:** Strongly Disagree

Details	SA	A	U	D	SD
The company website is a dependable source of information.					
The company website is really user friendly.					

VII. Customer Satisfaction and Customer Relations

To what extent do you agree with the following aspects with respect to the customer satisfaction and customer relations? Please indicate your responses based on the scale mentioned below.

SA: Strongly Agree **A:** Agree **U:** Uncertain **D:** Disagree **SD:** Strongly Disagree

Details	SA	A	U	D	SD
I am really satisfied with my service provider.					
My service provider is competent enough to fulfill my expectations.					
My choice to associate with the service provider is a wise decision.					
I have strong intention to remain as a customer of my service provider.					
I would recommend the services of my mobile service provider to my friends / colleagues.					
As a customer I am emotionally attached with my service provider.					

VIII. Are you using 3G mobile telecom services?

a. Yes **b. No**

If your answer is "**Yes**", Please specify your responses for the **following Questions from 1 to 5**

If your answer is "**No**", Please go on to **Question No. 6 (Page no. xxvii)**

1) Please specify the details of mobile connection(s) you possess for 3G mobile telecom services.

Mobile 3G Service Provider	Is it the same connection used for mobile voice services		Number of Mobile Connections used for 3G services	Months of Association	Prepaid	Post-paid	Average Monthly Spending for 3G mobile services
	Yes	No					

2) Please specify your Most preferred Service Provider for the 3G mobile telecom services from among the above.

……

Please indicate responses to the following queries based on your most preferred 3G mobile connection.

3) To what extent do you agree with the following statements with respect to your 3G mobile telecom services? Please indicate your responses based on the scale mentioned below**.**

SA: Strongly Agree **A:** Agree **U:** Uncertain **D:** Disagree **SD:** Strongly Disagree

Core benefits of 3G mobile telecom services	**SA**	**A**	**U**	**D**	**SD**
It is very easy to get connected to the 3G mobile telecom services.					
The network provides good geographical coverage for 3G mobile telecom services.					
The handset settings for the mobile internet are really user-friendly.					
The speed of downloading is very high.					
The Roaming facility for 3G mobile telecom services is excellent.					
My service provider extends excellent service support for 3G mobile telecom services.					

Quality of 3G mobile telecom services.	**SA**	**A**	**U**	**D**	**SD**
My service provider has modern Facilities for the customers.					
The 3G mobile telecom services are dependable.					
My service provider responds to the customer needs on time.					
The employees are knowledgeable and polite to the customers.					
The employees of service provider do understand the needs of their customers and give personal attention to them.					
Pricing of 3G mobile telecom services	**SA**	**A**	**U**	**D**	**SD**
Attractive varieties of tariff plans are offered in my 3G mobile telecom services.					
The charging is transparent and there are no hidden charges.					
The 3G mobile telecom services deliver the real value for money spend on it.					
The pricing of 3G mobile telecom services are better as compared to competition service providers.					
Factors influenced you to subscribe for the 3G mobile telecom services	**SA**	**A**	**U**	**D**	**SD**
Attractive Offers as compared to other service providers.					
Attractive Pricing as compared to other service providers.					
The friendly customer support services.					
The image and reputation of the service provider.					
The Advertisements of the service provider.					
Recommendation by Friends / Family members.					
The 3G mobile telecom services are essential for me.					

4) Have you ever received following **offers/attractions** from your service provider? If your answer to any of the following item(s) is "**Yes"**, Please indicate your level of agreement with respect to the **attractiveness of the offer**.

SA: Strongly Agree **A:** Agree **U:** Uncertain **D:** Disagree **SD:** Strongly Disagree

Have you ever received following offers/attractions from your service provider? Please put tick mark **[✓]** against your choice			If your answer is **Yes**, to what extent **do you agree** with the statement " **The offer cited is Attractive"**				
Offers	**Yes**	**No**	**SA**	**A**	**U**	**D**	**SD**
Rebates / Price reductions for 3G mobile telecom services.							
Free trial for 3G mobile telecom services.							
Displays and demonstrations at the point of sales							

5) **Customer satisfaction in 3G mobile telecom services**

SA: Strongly Agree **A:** Agree **U:** Uncertain **D:** Disagree **SD:** Strongly Disagree

Details	**SA**	**A**	**U**	**D**	**SD**
I am really satisfied with my 3G mobile telecom services.					
My service provider is competent enough to fulfill my expectations.					
My choice to associate with the service provider for the 3G mobile telecom services is a wise decision.					
I would recommend the 3G mobile telecom services of my mobile service provider to my friends / colleagues.					

(**Question No. 6**, for the customers **NOT** using **3G mobile telecom services.)**

6) Are you aware of 3G mobile telecom services?

a. Yes **b. No**

If your answer is "**Yes**", Please indicate your level of agreement with following probable reasons for **NOT** using 3G mobile telecom services.

SA: Strongly Agree **A:** Agree **U:** Uncertain **D:** Disagree **SD:** Strongly Disagree

Reasons for NOT using 3G mobile internet services.	**SA**	**A**	**U**	**D**	**SD**
Lack of network coverage of 3G mobile internet services.					
High pricing of 3G mobile internet services.					
High cost of 3G mobile handsets.					
It is difficult to learn the method of operation of 3G handsets.					
The 3G mobile internet services are not essential for me.					

IX. Are you using landline services?

a. Yes **b. No**

If your answer is "**Yes**", Please specify your responses for the following queries

1) Please specify the service provider, services utilised, and period of association with the **landline.**

Landline Service Provider	Period of Association in Years for Basic Voice Services	Average Monthly Spending for Basic Voice Services	Period of Association in Years for Broadband Internet Services	Average Monthly Spending for Broadband Internet Services

2) To what extent do you agree with the following statements with respect to the Landline Basic Voice Service? Please indicate your responses based on the scale mentioned below.

SA: Strongly Agree **A:** Agree **U:** Uncertain **D:** Disagree **SD:** Strongly Disagree

Details	SA	A	U	D	SD
My landline provides excellent voice clarity.					
Compliant Resolution or Fault repair is fast.					
Landline service support is excellent.					
Telephone instrument and materials associated with the landline services are modern and visually appealing.					
The Landline services are dependable.					
The employees are knowledgeable and polite to the customers.					
The employees of service provider do understand the needs of the customers and give personal attention to them.					
Attractive tariff plans are offered in landline services.					
The landline services are low-priced.					
The billing of landline services is transparent and there are no hidden charges.					
Attractive discounts/ rebates are offered in landline services.					
Landline and Mobile phone combined schemes/offers are attractive.					
Landline services deliver the real value for money spend on it.					
To an extent, I am emotionally attached with my landline.					
I am really satisfied with my landline services.					
I would like to retain my landline services.					

X. Are you using Landline Broadband Internet services?

a. Yes **b. No**

If your answer is "**Yes**", Please specify to what extent do you agree with the following statements with respect to the Landline Broadband Internet Services? Please indicate your responses based on the scale mentioned below.

SA: Strongly Agree **A:** Agree **U:** Uncertain **D:** Disagree **SD:** Strongly Disagree

Details	SA	A	U	D	SD
My landline broadband provides Uninterrupted internet connectivity.					
I am getting the download speed as assured in the Broadband plan.					
The broadband customer support is excellent.					
The overall quality of broadband internet services is excellent.					
A wide variety of tariff plans are offered in broadband services.					
Attractive discounts/ rebates are offered in broadband services.					
The pricing of broadband services are attractive.					
Landline broadband services deliver the real value for money spend on it.					
Broadband internet is the main factor which forced me to retain my landline connection.					
I would recommend the landline broadband internet services to my friends / colleagues.					
I am really satisfied with the landline broadband internet services.					

Thank You Very much for your kind cooperation.

APPENDIX –II

The list of locality, selected places and sample size of primary survey

Sl.No.	Locality	Selected places	Sample size
1	Urban	Thiruvananthapuram Corporation	120
2	Urban	Kochi Corporation	120
3	Urban	Kozhikode Corporation	120
4	Semi-Urban	Neyyattinkara Municipality	40
5	Semi-Urban	Punalur Municipality	40
6	Semi-Urban	Pala Municipality	40
7	Semi-Urban	Chalakudi Municipality	40
8	Semi-Urban	Vadakara Municipality	40
9	Semi-Urban	Malappuram Municipality	40
10	Semi-Urban	Kalpetta Municipality	40
11	Semi-Urban	Kannur Municipality	40
12	Semi-Urban	Kasaragod Municipality	40
13	Rural	Chenkal Panchayat	20
14	Rural	Chirayinkeezhu Panchayat	20
15	Rural	Ambalapuzha South Panchayat	20
16	Rural	Thrikkunnapuzha Panchayat	20
17	Rural	Vazhakkulam Panchayat	20
18	Rural	Choornikkara Panchayat	20
19	Rural	Mattathur Panchayat	20
20	Rural	Mundoor Panchayat	20
21	Rural	Kongad Panchayat	20
22	Rural	Wandoor Panchayat	20
23	Rural	Kodur Panchayat	20
24	Rural	Kadalundi Panchayat	20
25	Rural	Kakkodi Panchayat	20
26	Rural	Ambalavayal Panchayat	20
27	Rural	Thirunelly Panchayat	20
28	Rural	Panoor Panchayat	20
29	Rural	Peralassery Panchayat	20
30	Rural	Udma Panchayat	20
Total			1080

APPENDIX–III

The selected places of primary survey