

RESEARCH ARTICLE

TELECOM REGULATIONS AND CONSUMER AWARENESS IN INDIA.

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Abstract

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*Keywords: -*Trai, tsp, cag, anova, tcepf, cutcef, psu, dot, mnp, vas, cop, ucc. The Telecom sector witnessed substantial growth during the recent years. India is currently the second largest telecommunication market in the world with quiet a number of telecom service providers creating a lot of competition. For fair competition and level playing field TRAI (Telecom Regulatory Authority of India) issues regulation/ directions/ orders/ guide lines. To spread awareness about telecom regulation, COP (Consumer Outreach Programs) are conducted by TRAI offices, Telecom Service Providers and CAG (Consumer Advocacy Groups), hence present paperis taken on "Telecom Regulation and Consumer Awareness in India" and sample from fourstates (Rajasthan, Telangana, West Bengal and J&K) were taken based on geographical zones west, south, east and north. The study covered the different cross section of population like age, gender, occupation. The objective of the study is to assess the awareness about telecom regulations in India. and accordingly the hypothesis testing was carried out. Conclusion is drawn by simple average & weighted average methods. It is concluded that the respondents who were male, occupation as service, age group of 25-34 years more aware. Consumer awareness about telecom regulations was highest in Telangana state with weighted awareness percentage as 94.23 followed by Rajasthan (92.82), J&K (89.70) and West Bengal (84.24).

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Introduction:-

Telecom Scenario in India: The Telecom Sector in India witnessed substantial growth in the number of subscribers during the recent years. At the end of the financial year (2017-18), the subscriber base was 1206.22 million out of which 1183.41 million were wireless subscribers. During the year 2017-18, wireless subscriber base recorded an increase of 11.62 million, while the overall tele-density remained more or less same at 92.84. The year also saw increase in rural tele-density from 56.91 to 59.05 while the urban tele-density remained at 165.9

From 2011 to 2018 the telephone subscriber base has increased from 846.3 million to 1206.22 million and total teledensity increased from 70.89 to 92.84. The rural tele-density increased from 33.83 to 59.05 whereas the urban teledensity increased from 156.9 to 165.9

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S.No.	Iten	1				At the	End of M	arch		
			2011	2012	2013	2014	2015	2016	2017	2018
1	Number of	Overall	846.3	951.4	898	933	996.1	1058.9	1194.6	1206.22
2	Telephones	Wire	34.73	32.17	30.21	28.5	26.59	25.22	24.4	22.81
	(in Million)	Line								
3		Wireless	811.6	919.2	867.8	904.5	969.5	1033.6	1170.2	1183.41
4		Rural	282.3	330.8	349.2	377.8	416.1	449.17	501.61	524.61
5		Urban	564	620.5	548.8	555.2	580.1	609.69	692.97	681.61
6	Tele-density	Overall	70.89	78.66	73.2	75.23	79.36	83.36	92.98	92.84
7	(Telephones	Rural	33.83	39.26	41.05	44.01	48.04	51.37	56.91	59.05
8	per 100	Urban	156.9	169.2	146.6	145.5	149	154.01	171.8	165.9
	persons)									
9	%age share	Rural	33.35	34.77	38.89	40.49	41.77	42.42	41.99	43.49
10		Urban	66.65	65.23	61.11	59.51	58.23	57.58	58.01	56.51
11	% age growth of Total		36.22	12.41	-5.61	3.9	6.76	6.3	12.82%	1.00%
	Telephones- over									
	previous year									

Table1:-Indian Telecom Scenario as on 31st March

(Source: -Indicator Report TRAI and Annual Reports of DOT)

Role of Regulatory Authority for Protection of Consumer Rights and TRAI: -

TRAI (Telecom Regulatory Authority of India), HQ at New Delhi, Established in 1997 with Parliament act. It has Regional Office at Jaipur. It Issues Telecom Regulations/Directions/Orders related with Consumer Protection, Conducts Consumer Outreach Programs, give directions to TSP's to do so, Appoints Consumer Advocacy Groups (CAGs), Formed-Telecommunication Consumers' Education and Protection Fund (TCEPF), Formation of Committee for Utilization of Telecommunication Consumers Education and Protection Fund (CUTCEF).

Consumer Outreach Programs: -

(Financed from TCEPF) were conducted in general public& educational institutes by TRAI and its Regional Offices, Telecom Service Providers (TSP),CAG (Consumer Advocacy Group).The stack-holders in these programs were cconsumers, rrepresentatives fromCentral / State Govt. departments ,PSUs (Public Sector Unit-Central, State Govt.),CAG (Consumer Advocacy Group),Press / Media, Universities / Educational Institutes, Telecom Service Provider, District /State Consumer Forum ,LCO (Local Cable Operator) & MSO (Multi System Operator),TRAI, HQ / TRAI, Regional Offices, Chamber of Commerce & Industry. In these programs the stake holders were briefed about the functions of TRAI ,briefed about the regulations/directions/orders/guidelines issued by TRAI to protect the interest of the consumer, later on the power point presentation having all the regulations/directions/orders/guidelines issued by TRAI to protect the interest of the consumer shown and demonstrated to all the participants, question & answer session related to these regulations/directions/orders/guidelines, feedback from consumers/stake holders.During last 4-5 years TRAI have conducted consumer out- reach programs, seminars, workshops, All India Radio programs, Doordarshan Programs, Community Radios Programs, Press releases issued.

F.Y.	TRAI	Regional Workshops	TSP	Total
2013-14	111	-	330	441
2014-15	113	-	660	773
2015-16	67	2	660	729
2016-17	89	5	1107	1201
2017-18	97	5	1492	1594
Total	477	12	4249	4738

 Table 2: - All India COPs details-conducted by

(Source: -TRAI website and TRAI Regional Office Jaipur)

Year	Rajasthan	Telangana	West Bengal	J&K	Total
2013-14	55	23	24	13	115
2014-15	47	36	35	25	143
2015-16	37	35	38	25	135
2016-17	117	140	75	21	353
2017-18	85	70	112	25	292
Total	341	304	284	109	1038

 Table 3: -State wise COPs details-conduct

(Source: -TRAI website and TRAI Regional Office Jaipur)

Research Methodology: -

Rationale /Justification of Study: -

- 1. In last ten years there was a tremendous growth in the telecom sector.
- 2. TRAI and its Regional Office have conducted many Outreach Programs for Consumer Awareness during last 4-5 years.
- 3. Apart from TRAI, TSPs, DOT (Department of Telecom), CAG have also conducted such programs.
- 4. This study also focused on the extent to which desired objectives of telecom regulations and consumer awareness in India were achieved.

Statement of Problem: -

"Telecom Regulation and Consumer Awareness inIndia"

Review of Literature: The review of literature was classified into telecom regulations and consumer awareness in India: -

Main Telecom Regulations related with consumer protection Rights-Mishra et al. (2015) advocated about the protection of consumer rights and measures to be taken for awareness of the consumers, to guard against deceptive practices, to empower them with practical tools to resolve their problems.International Telecom Union (2014) deliberated for putting the consumer at the heart of the regulator's decision making, focus on competition, develop and/or maintain a consumer protection framework which can be fitted in the converging environment and mentioned the key challenges for regulators were to establish a culture of security that promotes trust in ICT applications, effective enforcement of privacy and consumer protection & advocated for the need of strengthening cross-border cooperation as converged services being global, the need of regulatory framework that balances the interests of suppliers and users, in areas of protection of intellectual property rights, digital rights management, without disadvantaging innovative e-business models. ASEAN (2014) detailed about the need of education programs, accessibility and cost effective dispute resolution mechanism and the issues monitored by the regulatory agencies like unfair treatment by service providers, misleading advertisements, imposition of harsh terms and conditions& effective enforcement of existing regulations.Raju &Asifulla (2013) advocated to incorporate the measure to tackle unfair practices, effective complaint redressal and Government financial support to registered consumer associations for better consumer education.

Mobile number portability- Venkatachalam&Harikaran (2015), Kamaregh&Praveena (2012) advocated that maximum number of respondents were aware of MNP and were satisfied with it. They concluded that the respondents came to know about MNP through advertisement, friends, relatives, media, internet and co-workers. They mentioned that majority of the users switched because of influencing factor like, call rates, followed by subscriber plan, validity, network coverage, better offers & promotion, influence of friends, billing system, call drops etc. Kamaregh&Praveena (2012) mentioned that difficulty in understanding the procedure followed by time taken for MNP process were the major problems in MNP&advocated for more promotional offers and discounts by TSPs followed by improvement in network coverage, training of sales persons to communicate the promotional offer effectively and dealing consumers with friendliness to avoid consumer switching. Thomas &Juuso (2012) - Advocated the use of system dynamics to evaluate the effect of technology harmonization and mobile number portability by using the conceptual model.

Value Added Services-Rengarajan (2012) concluded that maximum number of mobile user were familiar about commonly known VAS services, with prepaid & postpaid services and SMS, Ring tones & Pictures download, video clips, information services, Internet/GPRS, third party conference. VAS like SMS, ring-tone downloading, internetconnection and gaming, etc. was frequently used. Majority of respondentswere satisfied with these services;

very few were neutral, dissatisfied & highly dissatisfied with internet connection, activation time of VAS, free sms and guaranteed delivery of notification. He further commented that the current Indian MVAS market can be gauged into two categories current MVAS and emerging MVAS. The current MVAS category covers 63 percent of the total industry, whereas emerging MVAS covers the remaining share of 37 percent. The current MVAS consists of CRBT (27 percent) and SMS Based application (17 percent). On the other hand, the emerging MVAS consist mostly of Mobile Apps (10 percent) and Games (8 percent). MVAS growth further, affordable mobile devices and cheaper data subscription rates will play a crucial-role-in-the-market.

Internet data services- Firdaus (2016) elaborated the trends in the evolution of 4G wireless technology, its security limitations and the ways of tackling the security issues in 4G network and the challenges in growth of 4G which were up gradation of backhaul, use of multi frequency band deployment of data traffic without proper voice, costly smart phones, QoS, extra bandwidth requirement due to HD streaming, return on investment, deployment in rural area. Author concluded that the Opportunities of 4G technology in India were cost and affordability, personalization, advanced access technologies, coverage and availability, M-learning capability, improved entertainment for an individual, mobile banking, private and public organization performance improvement. Author further concluded that 4G LTE brought with it increased complexity in security management due to IP based network for the mobile operator, however, with proper diligence mobile number operators can minimize the impacts of various security threats.Sharma and Pandey (2015) advocated that success of "digital India" program depends upon ubiquity of broadband/Internet services and for this the main constraints were less awareness about e-Services and quality of services, limited availability of spectrum, higher tariff of internet usages, non-availability of last mile broadband connectivity, network and electricity, lower bandwidth of broadband connections compared to that of developed countries, lower penetration in India. Sinha (2013) concluded that internet in urban area was accessed for communications, social networking, rich contents on mobile phones and in rural area for entertainment like music, videos and photos and suggested for quick production of 4G Handsets.

Consumer awareness -Hilda et al (2016) advocated that the consumers with old age, lower income group, situated in rural area were less aware about telecom regulations and further advocated that policy making bodies, regulators and other institutions, to take care of protection and empowering users in rural area and directing the telecom service provider to increase/promote awareness of consumer rights through social media pages. Sharma and Pandey (2015) mentioned that success of "digital India" program depends upon ubiquity of broadband/Internet services and for this the main constraints were less awareness about e-Services and quality of services, limited availability of spectrum, higher tariff of Internet usages, non-availability of last mile broadband connectivity, network and electricity, lower bandwidth of broadband connections compared to that of developed countries, lower penetration in India. They advocated for continuous efforts for awareness of consumers from regulator, government and telecom service providers. Kaur (2014), Ishak&Zabil (2012) advocated that awareness programs for consumer education, helped in knowledge building, competence, critical thinking, promoting self-confidence and independence, imparting life skills and values, improving quality of life, empowerment about consumer rights, awareness about basic rights, creating more responsible business society which leads to effective implementation of consumer protection regulation, which was emphasized by the government. Velmurugan et. al. (2013) emphasized on continuous efforts of regular awareness by the regulator, service providers and consumer advocacy groups. Ishak&Zabil (2012), further advocated that there was asignificant relationship between awareness and effective consumer behaviour and there was a significant difference in the awareness level between urban and less urban area, seller's frauds were the byproduct of unawareness.

Objectives of study: -

To assess the impact of demographic parameters on telecom regulations awareness. To assess telecom regulations awareness level among consumers.

Hypothesis: -

Ho1: There is no significant difference between demographic parameters and telecom regulations awareness.

Ho₂: There is no significant difference between the awareness level about telecom regulations.

Universe: -For this study whole India was taken as universe. 120.6 Cr mobile consumers were in whole India.

Sample: For this study 4 out of 29states of India (>10%), were taken on the basis geography (West, South, East and North), have been selected. These states are Rajasthanin west zone having 100, Telangana in south having 100, West Bengal in east zone having 100 and J&K in North zone having 100samples.

Table 4: -Sample

S. No.	District	Zone	No. of Sample
1.	Rajasthan	West	100
2.	Telangana	South	100
3.	West Bengal	East	100
4.	J&K	North	100
Total of above these	states		400

Data collection: Both primary and secondary sources of data were used. Primary data was collected by questionnaire filling online (400). Main sources of secondary data were taken from TRAI Regional Office & HQ New Delhi, and websites of TRAI, DOT, Consumer affairs ministry and Government of Rajasthan and international telecom union reports.

Test tools and hypothesis testing: Analysis of data was done with the use of Simple Percentage Analysis, Weighted Average Analysis, Statistical calculations were made using Microsoft Excel.

Time period of study: -

The primary data in the study was collected from 01.10.2018 to 23.10.2018 by online Google form. Secondary data contained in the study was from 2013 to 2018 as during last 4-5 years consumer out-reach programs, and other awareness activities were done.

Limitations of study: -

Bigger than this sample 400 needs more time, manpower and money to conduct the study, the sample was non-random in nature, stratified sampling used.

Profile of Indian Telecom Sector & Respondents: -

Respondents of states of Rajasthan, Telangana, West Bengal and J&K taken- Out of total 400 respondents, 100 were from Rajasthan, 100 from Telangana, 100 from west Bengal and 100 from J&K. Five respondents were from telecom service providers each. Ten officers were from DOT and 2 officers from TRAI were the respondents. Two respondents were from Consumer Advocacy Groups. Teachers and students were in these four states.

Samples->	Gende	r wise	Age wise			Occupation wise					Total	
State	Male	Female	<25 years	25-34 years	35-44 years	>45 years	Service	Business/ Self Emploved	Student	Housewife	Retired	
Rajasthan	79	21	29	31	30	10	68	15	12	3	2	100
Telangana	69	31	31	41	22	6	35	43	13	7	2	100
West Bengal	87	13	17	43	22	18	73	9	13	2	3	100
J & K	84	16	25	27	36	12	80	9	7	3	1	100
Total of Above States	319	81	102	142	110	46	256	76	45	15	8	400

Table 5:- Sample distribution

Respondents Opinion about Awareness of Telecom Regulations: -

The demographic parameters covered areGender (Male, Female), Age, Occupation (Service, Business/Self Employed, Student, Housewife, Retired) were studied about awareness and satisfaction.

Hypothesis testing: -

Ho₁: There is no significant difference between demographic parameters and telecom regulations awareness.

This hypothesis was concluded by testing three sub hypothesis testing.

 Ho_{1-a} : There is no significant difference between gender (male and female) of respondents regarding telecom regulations awareness. - Hypothesis rejected.

State	Ν	I ale	Fe	male	Total					
	Count	%	Count	%	Count	%				
Rajasthan	1090	78.42	300	21.58	1390	100.00				
Telangana	991	70.23	420	29.77	1411	100.00				
West Bengal	1114	89.05	137	10.95	1251	100.00				
J & K	1147	85.47	195	14.53	1342	100.00				
Total of above States	4342	80.50	1052	19.50	5394	100.00				

Table 6: -Gender Wise Awareness



Fig.1: - Telecom Regulations awareness–gender wise comparisonHo $_{1-a}$

Awareness percentage of respondents with category male was more than female due to higher literacy in male category in all these states and was highest in West Bengal state for male category and in Rajasthan for female category. Also there is large variation in percentage awareness in these state for both the categories. Hence hypothesis is rejected.

 Ho_{1-b} : There is no significant difference between age groups of respondents regarding telecom regulations awareness. -Hypothesis rejected.

State	<25 years		25-34	25-34 years		35-44 years		>45 years		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	
Rajasthan	420	30.22	439	31.58	418	30.07	113	8.13	1390	100.00	
Telangana	438	31.04	605	42.88	295	20.91	73	5.17	1411	100.00	
West Bengal	175	13.99	578	46.20	286	22.86	212	16.95	1251	100.00	
J & K	326	24.29	360	26.83	478	35.62	178	13.26	1342	100.00	
Total of above States	1359	25.19	1982	36.74	1477	27.38	576	10.68	5394	100.00	

Table 7: - Age Wise Awareness



Fig. 2: -Telecom regulations awareness-age wise comparisonHo_{1-b}

Awareness percentage of respondents with age group 25-34 years was higher than other groups in all states except J&K where it was highest in age group of 35-44. It was highest in West Bengal state (46.20) followed by Telangana (42.88), Rajasthan (31.58) and J&K (26.83%) for the age group 25-34 Years. Also there is large variation in percentage awareness in these state for all the age groups. Hence hypothesis is rejected.

Ho_{1-c}: There is no significant difference between occupation of respondents regarding telecom regulations awareness. - Hypothesis rejected.

State	Service		Business/		Student		Housewife		Retired		Total	
			Self Employed									
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Rajasthan	955	68.71	207	14.89	168	12.09	45	3.24	15	1.08	1390	100.00
Telangana	498	35.29	634	44.93	191	13.54	67	4.75	21	1.49	1411	100.00
West Bengal	995	79.54	92	7.35	109	8.71	18	1.44	37	2.96	1251	100.00
J & K	1102	82.12	110	8.20	80	5.96	35	2.61	15	1.12	1342	100.00
Total of above States	3550	65.81	1043	19.34	548	10.16	165	3.06	88	1.63	5394	100.00

 Table 8: - Occupation Wise Awareness



Fig. 3: - Telecom Regulations awareness-occupation wise comparisonHo_{1-c}

Awareness percentage of respondents with occupation in service category was higher than other occupation category in all states except Telangana where business/self-employed category was highest. It was highest in J&K state (81.12) followed by West Bengal (79.54), Rajasthan (68.71) and Telangana (35.29), for occupation in service category. Also there is large variation in percentage awareness in these state for all the occupation categories. Hence hypothesis is rejected.

State		Gender wise		Age wise				Occupation wise					Total
		Male	Female	<25 years	25-34 years	35-44 years	>45 years	Service	Business/ Self Employed	Student	Housewife	Retired	
Rajasthan	<u>`0</u>	78.42	21.58	30.22	31.58	30.07	8.13	68.71	14.89	12.09	3.24	1.08	92.67
Telangana	S %	70.23	29.77	31.04	42.88	20.91	5.17	35.29	44.93	13.54	4.75	1.49	94.07
West Bengal	nes	89.05	10.95	13.99	46.20	22.86	16.95	79.54	7.35	8.71	1.44	2.96	84.24
J & K	are	85.47	14.53	24.29	26.83	35.62	13.26	82.12	8.20	5.96	2.61	1.12	89.70
Total of	ΥW:	80.50	19.50	25.19	36.74	27.38	10.68	65.81	19.34	10.16	3.06	1.63	90.10
Above States	ł												

Table 9: - Testing of Hypothesis HO1

Conclusion: -

The respondents who were in the male category with age group 25-34, occupation in service category were more aware. Overall percentage awareness was highest in Telangana state (94.07) followed by Rajasthan (92.67), J&K (89.70) and West Bengal (84.24)

Telecom Regulations&Consumer Awareness: -

Consumer awareness created by COPs conducted by TRAI and TSP's was judged.

Testing of hypothesis:

Ho2: There is no significant difference between the awareness level about telecom regulations. -Hypothesis rejected.

Table 10: -Testing of Hypothesis HO2

States		Average Awareness	Weighted Average Awareness
Rajasthan	Count	1390	1390
	%	92.67	92.82
Telangana	Count	1411	1411
	%	94.07	94.23
West Bengal	Count	1251	1251
	%	83.40	84.24
J & K	Count	1342	1342
	%	89.47	89.70
Total of above States	Count	5394	5394
	%	89.90	90.10



Fig. 4: - Percentage Average & Weighted Awareness-comparisonHo₂

Conclusion: -

It was concluded that the COP's conducted by TRAI and TSP's have created the awareness in four states of India and it was maximum in Telangana state withweighted awareness percentage as 94.23 followed by Rajasthan (92.82), J&K (89.70) and west Bengal (84.24). This observation was also confirmed with the fact that, information technology uses in Telanganais more than other states and also many consumer outreach programs were conducted by TRAI HQ, its regional offices and telecom service providers.

Findings and Conclusion: -

- 1. The first objective "To assess the impact of demographic parameters on telecom regulations awareness." was met by the hypothesis Ho₁ and it was concluded that there was impact of demographic parameters like age group, occupation and gender (male and female) on consumer awareness about telecom regulations. The respondents who were in the male category with age group 25-34, occupation in service category were more aware.
- 2. The second objective "To assess telecom regulations awareness level among consumers" was met by the hypothesis Ho₂ and It was concluded that the COP's conducted by TRAI and TSP's have created the awareness in four states of India and it was maximum in Telangana state with weighted awareness percentage as 94.23 followed by Rajasthan (92.82), J&K (89.70) and west Bengal (84.24). This observation was also confirmed with the fact that, information technology uses in Telangana is more than other states and also many consumer outreach programs were conducted by TRAI HQ, its regional offices and telecom service providers.

Suggestions: For making COPs more effective the suggestions offered are: -

- 1. Frequency of COPs to be conducted by TRAI and TSPs needs to be increased for spreading more awareness about telecom regulations.
- 2. TRAI and TSPs to frame power point presentation and material such that it covers all the latest regulations for making the people more aware.
- 3. Very less number of consumer outreach programs were conducted in districts like J&K, hence such activities needed more in such states.

Future scope for study: -

- 1. This study was limited to four states based on geographical zones i.e west, east, north and south. It was a pilot study and many other criteria's like population wise (ascending to descending order or vice versa) and area wise (ascending to descending order or vice versa) on which further study can be done.
- 2. More efforts can be made for increasing the female participation.

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