RESEARCH REVIEW JOURNALS
Volume-04
Issue-09
September-2019

ISSN: 2455-3085 (Online)
RESEARCH REVIEW International Journal of Multidisciplinary
www.rrjournals.com[Peer Reviewed Journal]

Consumers' Satisfaction on Services Rendered by Andhra Pradesh Southern Power Distribution Company Limited in Guntur District

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ARTICLE DETAILS

Article History
Published Online: 16 Sep 2019

Keywords
Global alliance, Satisfaction, Services, Energy crisis, Power cut.

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ABSTRACT

This paper focuses to study the consumers' satisfaction on services rendered by APSPDCL. The services rendered by power utilities are not an easy task. More power markets are needed in India. The results of the field survey revealed that a high majority of 93.0 per cent rural respondents and 77.0 per cent urban respondents did not notice any advertisement given by APSPDCL authorities for proper use of electricity. The advertisement has influenced the total sample respondents to some extent. Regarding global alliance bring benefits to India's power sector the respondents from rural and urban are significantly varied at 5% level of significance as the per the chi-square test. Hence the hypothesis is refuted. It may be inferred that the need of more power markets in India is required which is very much evident from the recent constitutions of National Power Exchange Centers and State Trading Centers in the country. According to the student t-test for the service rendered by the APSPDCL the average opinion score of urban and rural area respondents are almost similar for the quality of power supply and opinion is varied for all the other services. The hypothesis is rejected for all the utility services except quality of power supply.

1. Prelude

The energy flows across the country needs to be optimized if the energy starved areas are to benefit from the pooling and exporting of power from surplus areas. The global alliance model did not take off in revamping India's power sector. The only motive of business somewhere clouds the real service moral of company's operating utilities who commit promising agendas to bring satisfaction to the electricity consumers.[1]

The consumers are not aware of the power supply chain and its importance to understand the Energy Crisis, India's Power System is facing despite reform and restructuring .Due to lack of awareness on many fronts like energy conservation measures, controlling wastage of electrical energy, safety of electrical power equipments installed, performance and maintenance, billing and metering system, tariff and electricity pricing, etc the government's targets, mission, vision and plans are not becoming objectively successful in the real sense.

Impact of power cuts on day to day living is very much seen in children's education , lack of communication network, pumping and water problems, unrest and health problems, recreation and loss of business almost in all the areas as per the consumers either in the domestic or commercial category. The impact of power cut in the evening hours from 6.00 PM TO 10.00 PM severely affects the children's education (suitable daily study time) and commercial consumers (small business enterprises like grocery , flour mills, cloth merchant, vegetable and sweet vendors, departmental and general stores, etc) i.e. market is completely disturbed. Small business enterprises have to spend on diesel or battery sources as an alternate source of power to facilitate their business the only means for survival.

2. Objective

To study the urban and rural electricity consumers' satisfaction on services provided by APSPDCL

3. Hypothesis

$H0_1$: The opinion of the respondents from urban and rural areas has not varied on the services rendered by the APSPDCL.

4. Methodology

The present study is based on primary data. Survey questionnaire is used as an instrument to collect primary data. The researchers have administered survey questionnaire to the urban and rural domestic electricity consumers in Guntur district of Andhra Pradesh. The aspects on which the data are collected from the sample consumers include consumers' opinion on advertisement given by APSPDCL for proper use of electricity, advertisement is helpful in proper use of electricity, APSPDCL educating the consumers regarding efficient use of electricity, global alliance bring benefits to India's power sector, need for more power markets in India, perception on the reforms that helped in optimize the energy flow across the country and rating the services rendered by APSPDCL.

A pilot study was conducted prior to administering of the original study which formed the pedestal for the research. The respondents' questionnaire was finalized on the basis of the pilot study. It was conducted on 50 respondents to find out if

any discrepancies are observed or not. In the light of the observations and experiences of the pilot survey necessary changes were incorporated in the questionnaire.

5. Sampling

The universe for the present study is Domestic Electricity Consumers of Urban and Rural areas in Guntur District of Andhra Pradesh. The sample is drawn from different urban and rural areas of Guntur district like Brodipeta, Arundelpeta, Kothapeta, Old Guntur, Naaz centre, SVN Colony, Vidya nagar, Nagaram palem, Narasaraopet, Chilakaluripet, Tenali, Nandivelugu, Kolakaluru, Athota, Penumuli, Kancharlapalem, Pedaravuru, Kuchipudi etc. The respondents of each category of urban and rural figuring in the sample are picked up by proportionate random sampling method.

Sample size

The total number of customers for both the areas are 12,64,898. Out of which 7,58,939(60%) are from rural area and 505959(40%) are from urban area. The researchers had used proportionate random sampling technique method and collected 740 samples.

Table no.1.Sampling selection procedure

Sample district Guntur	Total consumers	Proportion	Sampling consumers
Urban	505959	0.40	296
Rural	758939	0.60	444
Total	1264898	1.00	740

6. Statistical tools used

The primary data have been interpreted with the help of simple statistical tools such as percentages, ranking method, Chi-square test of significance is administered to know the association between variables in the questionnaire. Student t-test is conducted to know the significant difference of opinion of the respondents on mean values of between two areas i.e. urban and rural areas.

7. Data analysis and inferences

7.1 Advertisement for proper use of electricity given by APSPDCL authorities

Table.no.7.1.Respondents' opinion on advertisement given by APSPDCL authorities for proper use of electricity

Opinion		Consumer		Total
		Urban	Rural	
	Yes	68	31	99
		23.0%	7.0%	13.4%
	No	228	413	641
		77.0%	93.0%	86.6%
Total		296	444	740
		100.0%	100.0%	100.0%

Chi-Square: 39.189, P-Value: 0.000, Significant

Respondents' opinion on advertisement given by APSPDCL authorities for proper use of electricity is projected in table no.7.1. It is surprising to note that 641 respondents 86.6 per cent out of 740 total sample respondents did not notice any advertisement given by APSPDCL authorities for proper use of electricity. In this regard urban respondents 77.0 per cent and rural respondents 93.0 per cent opined the same.

It is suggested to APEPDCL to advertise in such a manner that it reaches the majority public. By seeing the advertisement consumers may try to use electricity properly.

About 23% of the respondents from urban area have opined that they noticed advertisements given by the electricity authorities for proper use of electricity, where as in the case of rural area it is just 7%. The difference in the percentages is statistically significant at 5% level of significance. Therefore the hypothesis is refuted and variables are dependent to each other.

7.2 Different advertisement medias

Table.no.7.2.Respondents' opinion on different advertisement media

S.No	Advertising media	Weighted Score (Rank)	
		Urban	Rural
1	Television	458(1)	210(1)
2	Radio	222(5)	130(3)
3	News paper	296(4)	148(2)
4	Film slides	154(6)	123(4.5)
5	Hoarding	337(3)	103(6)
6	Canvas	399(2)	123(4.5)
7	Others (specify)	83(7)	31(7)

Table no.7.2 reveals the different advertisement medias the APSPDCL used. About 68 urban and 31 rural respondents who gave positive opinion were asked to rank their preferences of different medias. Both urban and rural respondents gave first rank to television. The urban respondents gave second rank to canvas, third rank to hoarding, fourth rank is given to news paper, fifth rank accorded to radio, sixth rank is given to film slides and seventh rank is accorded to others, whereas rural respondents gave second rank to news paper, third rank recorded to radio, 4.5^{th} and 4.5^{th} ranks same are allotted to film slides and canvas, sixth rank is given to hoarding and seventh rank to others.

7.3 Opinion on the advertisement given by the APSPDCL authorities is helpful in proper use of electricity

Table.no.7.3.Respondents' perception on advertisement given by the APSPDCL authorities is helpful in proper use of electricity

Opinion		Consumer		
		Urban	Rural	Total
	Yes to a large extent	56	68	124
		18.9%	15.3%	16.8%
	Yes to some extent	216	173	389
		73.0%	39.0%	52.6%
	No Opinion	24	203	227
		8.1%	45.7%	30.7%
Total		296	444	740
		100.0%	100.0%	100.0%

Chi-Square: 122.359, P-Value: 0.000, Significant

Respondents' opinion on advertisements given by the APSPDCL authorities is helpful in proper use of electricity is described in table no.7.3. A vast majority of 73.0 per cent of urban respondents opined yes to some extent, 18.9 per cent told yes to large extent and 8.1 per cent of them said no opinion, whereas the 45.7 per cent of rural respondents revealed no opinion, 39.0 per cent of them told yes to some extent and 15.3 per cent respondents said yes to a large extent.

At the outset the advertisement has influenced the total sample population to some extent (52.6%). It is suggested to the APSPDCL that to use new and different medias of advertisements to reach public at a large extent.

A significant majority (92%) of the respondents from urban area are feeling that the advertisement given by the APSPDCL authorities is helpful in proper use of electricity, where as in the case of rural area it is 55%. Thus the difference in the opinion on this aspect is statistically significant. The hypothesis is rejected and the opinion of all the respondents is varied on the above aspect.

7.4 APSPDCL educating the consumers regarding efficient use of electricity

Table.no.7.4.APSPDCL educating the consumer regarding efficient use of electricity

S.No	Efficient use of electricity	Weighted Score (Rank)	
		Urban	Rural
1	To reduce wasteful consumption	856(2)	1256(2)
2	To implement safety measures	813(3)	1182(3)
3	About electricity supply position	992(1)	1507(1)
4	Others (specify)	21(4)	216(4)

APSPDCL educating the consumer regarding efficient use of electricity is given in table no.7.4. It is surprising to note that both the urban and rural respondents gave same ranks. They gave first rank to educating electricity supply position, second rank to reduce wasteful consumption, third rank is accorded to implement safety measures and fourth rank attained to others.

Educating about electricity supply position and reduce wasteful consumption help the consumers for efficient use of electricity. If we reduce the wasteful consumption more power will be saved and it can be used for various purposes.

7.5 Global alliance bringing benefits to India's power sector

The United Kingdom and Canada are leading a new global coal alliance aimed at accelerating clean growth and achieving the rapid phase-out of traditional coal power.

More than 20 countries, including France, Finland, and Mexico, are part of the "Powering Past Coal Alliance" which also brings together a wide range of businesses and civil society organizations that have united for climate protection.

According to the International Energy Agency, Coal-fired power plants produce almost 40% of global electricity, making carbon pollution from coal a leading contributor to climate change. Air pollution from the burning of coal causes severe respiratory diseases and has many other damaging health effects, in addition to being a key driver of climate change.

The member countries of the alliance, launched during the UN Climate Change Conference in Bonn, have agreed to phase out existing traditional coal power and place a moratorium on any new traditional coal power stations without operational carbon capture and storage. Businesses and other non-government partners have in turn made commitments to focus on powering their operations without coal.

The partners in the Powering Past Coal Alliance will also work together to share real-world examples and best practices to support the phase-out of coal, including through climate

financing, and adopt practical initiatives that support this transition toward clean energy. Member countries aim to grow the alliance to 50 partners by the 2018 UN Climate Change Conference (COP24) in Katowice.

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Table.no.7.5.Respondents' opinion on global alliance bring benefits to India's power sector

Opinion		Consumer		
		Urban	Rural	Total
	Yes	169	194	363
		57.1%	43.7%	49.1%
	No	114	16	130
		38.5%	3.6%	17.6%
	No Opinion	13	234	247
		4.4%	52.7%	33.4%
Total		296	444	740
		100.0%	100.0%	100.0%

Chi-Square: 253.891, P-Value: 0.000, Significant

Respondents' perception on global alliance bringing benefits to India's power sector is portrayed in table no.7.5. A high majority of 52.7 per cent of the rural respondents had no opinion on global alliance. This is because they are not exposed to advanced or modern environment, whereas 57.1 per cent of the urban respondents disclosed their support for global alliance bringing benefits to India's power sector.

The table concludes that the overall opinion of the respondents (49.1%) is that global alliance brings benefits to India's power sector. India is facing fiscal deficit averagely in the range of 4-6 %, so global alliance can help the country to mobilize huge foreign direct investment (FDI) and better technology for financing projects and upgrading running power plants thus helps the sector to compete, develop, grow and become healthy in delivering better services to the nation.

With regard to the statement "Global alliance brings benefits to India's Power Sector", the respondents from rural and urban areas are significantly varied at 5% level of significance as per the chi-square test mentioned above. Hence the hypothesis is rejected.

7.6 Opinion on more power markets are needed in India

Table.no.7.6.Respondents' opinion on the need of more power markets in India

Opinion		Consumer		
		Urban	Rural	Total
	Yes	194	215	409
		65.5%	48.4%	55.3%
	No	82	104	186
		27.7%	23.4%	25.1%
	No Opinion	20	125	145
		6.8%	28.2%	19.6%
Total		296	444	740
		100.0%	100.0%	100.0%

Chi-Square: 52.203, P-Value: 0.000, Significant

Table no.7.6 brings out respondents' opinion on the need of more power markets in India. A majority of 409 total respondents equaling to 55.3 per cent opined the need for more power markets in India. In this regard urban respondents 65.5 per cent and rural respondents 48.4 per cent revealed the need for more power markets. On the other hand 28.2 per cent and 6.8 per cent of rural respondents and urban respondents reported no opinion.

It may be inferred that the need of more power markets in India is required which is very much evident from the recent constitutions of National Power Exchange Centers and State Trading Centers in the country.

A significant majority (65.5%) of the respondents from urban are feeling that more power markets are needed in this country, whereas in the case of rural area it is 48.4%. The difference in the opinion on this aspect is statistically significant at 5% level of significance. Thus the hypothesis is refuted and variables are dependent to each other.

7.7 Reforms helped to optimize the energy flows across the country

Table.no.7.7.Respondents' perception on the reforms that helped in optimize the energy flows across the country

Opinion		Consumer		Total
		Urban	Rural	
	Yes	56	94	150
		18.9%	21.2%	20.3%
	No	219	332	551
		74.0%	74.8%	74.5%
	No Opinion	21	18	39
		7.1%	4.1%	5.3%
Total		296	444	740
		100.0%	100.0%	100.0%

Chi-Square: 3.575, P-Value: 0.167, Not Significant

Respondents' perception on the reforms that helped to optimize the energy flows across the country is illustrated in the table no.7.7. About 551 respondents equaling to 74.5 per cent of the total sample respondents is the highest majority whose perception is that the reforms did not help in optimizing the energy flow across the country cannot be ignored. In this regard urban respondents (74.0%) and rural respondents (74.8%) gave negative opinion.

The table finally concludes that though optimization is going on yet much has to be done to remain the regional disparities in accessing the basic means of living electricity energy throughout the width and breadth of the country. The researcher observed through the existing energy profile of India that energy flow needs to be expedited by the government and utilities to bring balance between the surplus and deficits state in the country.

With regard to the statement "Has the reforms helped to optimize the energy flows across the country", the respondents from both the areas (rural and urban) opined in a similar passion i.e, around 20% from both the areas are in view that reforms helped to optimize the energy flows across the country. Hence it is supporting the hypothesis and the variables are independent to each other.

7.8 Rating the services rendered by the APSPDCL

Table.no.7.8.Respondents' rating the services rendered by the APSPDCL

Sr. No	Utility services	Excellent	Very Good	Good	Average	Below Average
1	Timely distribution of bills	46(6.2%)	77(10.4%)	448(60.5%)	169(22.8%)	
2	Accuracy& correctness of bills	16(2.2%)	47(6.4%)	176(23.8%)	501(67.7%)	
3	Promptness in providing new connections	8(1.1%)	60(8.1%)	132(17.8%)	467(63.1%)	73(9.9%)
4	Quality of power supply	2(0.3%)	29(3.9%)	277(37.4%)	420(56.8%)	12(1.6%)
5	Utilities concern for customers	12(1.6%)	27(3.6%)	178(24.1%)	268(36.2%)	255(34.5%)
6	Repairs and replacements in time	27(3.6%)	35(4.7%)	56(7.6%)	366(49.5%)	256(34.6%)

Respondents' rating the services rendered by the APSPDCL is described in table no.7.8. The ratings are decided by five types like, excellent, very good, good, average and below average. It is observed from the table that regarding timely distribution of bills a high majority of 60.5 per cent of the total respondents said good. For accuracy and correctness of bills 67.7 per cent of the total respondents opined average. Promptness in providing new connection 63.1 per cent of them said average. As far as quality of power supply is concerned 56.8 per cent of the total respondents' perception is an average. APSPDCL concern for customers 36.2 per cent of the respondents' opinion is average. And for repairs and replacements in time also the total respondents' opinion is average with 49.5 per cent.

Overall the table concludes that the total sample respondents' rating the services of APSPDCL is average. Hence it is suggested that the APSPDCL should take utmost care in providing good services to the consumers by changing its policies and procedures.

Table no.7.8a.Respondents rating the services rendered by the APSPDCL

S.No	Utility services	Consumer	N	Mean	SD	T-Value	P-Value	Decision
1	Timely distribution of Bills	Urban	296	3.28	0.55	8.668	.000	S
		Rural	444	2.81	0.82			

2	Accuracy& correctness of bills	Urban	296	3.88	0.38	10.450	.000	S
		Rural	444	3.36	0.80			
3	Promptness in providing new connections	Urban	296	4.09	0.64	11.212	.000	S
		Rural	444	3.48	0.79			
4	Quality of power supply	Urban	296	3.58	0.51	.809	.419	NS
		Rural	444	3.54	0.67			
5	Utilities concern for customers	Urban	296	4.19	0.90	5.064	.000	S
		Rural	444	3.84	0.93			
6	Repairs and replacements in time	Urban	296	4.45	0.61	9.197	.000	S
		Rural	444	3.81	1.07			
	Overall Opinion	Urban	296	3.91	0.44	11.17	0.000	S
		Rural	444	3.4	0.62			

With regard to the services rendered by the APSPDCL, the average opinion score of urban and rural area respondents are almost similar for the “quality of power supply”, whereas for the remaining all the services the urban area respondents have given more optimistic opinion than the rural area respondents the difference in the opinion is statistically significance at 5%.Which suggests significant relation between the variables. Further, the average opinion score of the urban respondents are almost greater than 3.5 for all the services provided by the APSPDCL and mean score is ranging from 3.4 to 4.45. i.e, ranging from 68% to 89% respectively. Among all the services, the urban area respondents are more positive opinion on “repairs and replacements in time” with 89% followed by the statement “utilities concern for customers” with 84%, whereas for the statement “accuracy& correctness of bills”, the rural area respondents have opined pessimistically i.e., around 33% respondents from rural area respondents are not happy with the accuracy and correctness of bills. The hypothesis is rejected for all the utility services except for quality of power supply for this service the hypothesis is accept and the variables are independent to each other.

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