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Abstract

This research examines a particular electric company (SCECO-East), a typical service provider in Saudi Arabia, in which service quality is a distinguishing feature of primary importance. The study revealed that SCECO-East scored high in tangibles dimension but low in features of responsiveness and reliability. In addition, while the performance of SCECO-East was acceptable to all customer categories, service quality was perceived differently by various types of customers, with reinforcement and commercial customers awarding SCECO even lower ratings than other customers did. Gap 3 (service performance gap) is more critical than the others four managerial gaps in affecting perceived service quality, making service delivery the main area of improvement.

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INTRODUCTION

Saudi Consolidated Electric Co. in the Eastern Province is the largest electrical utility in Saudi Arabia. It serves the Eastern region from Hafr al-batin and its villages north to Salwa on the Qatar border, and from the Arabian Gulf east to the border of central province.

Objectives:

The primary objective of the research is to investigate the quality shortfall within the SCECO-East organization and between SCECO- East and its customers and then improve the understanding of the characteristics, structure and the performance of SCECO- East.

The secondary objectives are listed as follows:

1. To measure client expectations and perceptions of the service quality provided by SCECO-East.
2. To determine the relative importance of the features which constitute service quality from the perspective of client.
3. To ascertain the extent to which SCECO- East understands and meets these expectations.
4. To explore the ways in which SCECO-East may identify and exploit opportunities to improve its services.

Basis of Selection:

SCECO-East was chosen as a subject for investigation since it meets several criteria:

1. It provides a very important service i.e. safe and reliable power to its customers, so it is a typical service provider.
2. It has a very large client base that demands electric power, so SCECO- East quality service will have a great effect.
3. It is desirable to check the effect of the newly introduced TQM 1, on both staff and the client.
4. It will reveal the applicability of conceptual model of analysis to the industry.

RESEARCH METHODOLOGY

Data Collection:

Three surveys have been conducted for this project: one amongst SCECO-East's customers, one amongst the supervisors in the company, and the third amongst the contact personnel (front line staff).

The customer survey participants were selected at random. Generally, the questionnaire was distributed to those customers who approached SCECO-East branches offices in DOA.

The front-line staff survey was given to each unit head that had direct contact with the customers in order to distribute them among his employees at random.

The principals and the supervisory staff were selected at random and the questionnaires were sent by mail. A cover letter, asking supervisors feedback about the quality, was attached to each questionnaire.

In all three surveys, clients were asked to complete the questionnaire statements related to their expectations of SCECO- East services. Also, principals and front-line staff were requested to fill the same set of statements about client expectations. Respondents were asked to provide the level of service expected from an electrical service and their evaluations of the actual level of service provided by SCECO-East on a set of 21 items.

The study tested the service quality of three service types (new, reinforcement, splitting), three different load types (residential, commercial and industrial) and the three load categories (less than 400 amps, between 401 to 5000 amps and more than 5000 amps). Subjects were assigned randomly to one of 27 categories.

Sampling:

The questionnaire survey was carried out over SCECO- East customers and staff. The total population of SCECO-East customers is around 485,000, approximately 50% of whom are located in DOA which includes Dhahran , Dammam , Khobar , and Qatif and its villages (Total DOA Customers is 225,000). The sample was selected from DOA customers for the following reasons:

- DOA accounts for half of all the company's customers.
- DOA is relatively small compared to the other two areas. HOA & NOA areas are very large with scattered customers.
- Most VIP customers are in DOA.

- The data gathering in DOA would be more controlled.
- TQM program started first in DOA in 1994, while the other areas started later.

The total population of SCECO-East staff is around 6,800 approximately 1000 of whom are employed by DOA.

Data were obtained through three random samples. For the customer survey, a total of 500 questionnaires were distributed to all three districts. The returned questionnaires were carefully examined for completeness and for obvious "yea" or "nay" saying tendencies. The total number of usable responses resulting from this process was 126 (25.2%).

For the frontline staff survey, a sample size of 200 was chosen. A total of 117 (59 %) completed questionnaires were collected for the current research. For supervisory staff, a random sample of 20 principals and supervisors that have contacts with customers was selected. A questionnaire and cover letter were mailed to these supervisors. Of the original 20 questionnaires, 12 (60 %) were returned and usable.

Questionnaire:

In order to measure the quality dimensions and therefore the gaps in perceptions, a survey instrument known as SERVQUAL was utilized. The statement items of the survey were related to each of the five quality dimensions i.e. for each service feature (quality determinant), at least four statements were included in the questionnaire to cover these features from all aspects.

The questionnaire was of three types: client, supervisor and employee surveys. The clients were asked to indicate how they expected and perceived the SCECO- East services by answering the questionnaire related statements of service quality. In addition, supervisory staff and front line employees of SCECO-East filled out the same set of statements about client expectations.

While SERVQUAL can be used in its present form to assess and compare service quality across a wide variety of firms, appropriate adoptions of the instrument may be desirable when only a single service is investigated [24]. This alternative approach would require appropriate wording changes in SERVQUAL' directions and items, although the item content would be the same.

Items of SERVQUAL were reviewed thoroughly by representatives of customer relation and engineering units, and, slight modifications were adopted. Specifically, items under each of the

five dimensions were suitably reworded in order to be more suitable for SCECO-East. Then, the questionnaire was evaluated by a small group of current customers (a convenience sample of 25 customers). Based on the results obtained, extensive reviews and discussions were also conducted with members of customer relation management as well as a number of technical personnel. The feedback from all parties was adopted in the instrument and distributed in this final shape.

The approach was to ask customers to indicate on different rating scales where they would place a high quality service company and where they would place SCECO-East Company. The relative importance of the five dimensions were designed by asking the customers to allocate a total of 100 points across the dimensions according to how important they considered each to be. This points allocation question listed descriptive definitions of the five dimensions without naming them.

The customer questionnaire contained three sections (parts). The first section listed 21 statements capturing the essence of what the literature suggests are expectations and perceptions of customers of service. In this section, respondents were asked to indicate on a scale of 1 (strongly disagree) to 7 (strongly agree) the extent to which they felt each item was necessary from an excellent electrical firm and performance of SCECO-East.

The second section listed statements concerning characteristics (features) electrical firms. Respondents allocated points to show the extent to which each statement was important on a scale from 0 to 100 points.

The third section included items to gather information on problems and complaints with services, satisfaction with problem resolution and overall rating of SCECO-East service quality. The questionnaire also contained several essay questions to address some service quality issues that need to be investigated. The clients were asked to list distinctive competencies of SCECO- East over other service agencies, their concerns about SCECO- East, most frequently cited of clients greatest sources of dissatisfaction with SCECO-East, and areas in which they experienced problem in the delivery service. In addition, the survey instrument contained questions pertaining to the demographic characteristics of respondents and types of service received.

Measurement:

The five service quality constructs were operationalized. The four constructs: Tangibles, Reliability, Responsiveness and Assurance were operationalized in the current research by four

direct measures. Empathy construct was operationalized by five direct measures. The measures employed in the current research were similar to those used by PZB (1988). The responses to the questionnaire statements relating to the service features were measured using a seven -point scale where 7 represented strong agreement and 1 represented strong disagreement.

Expectations and perceptions were measured on a 7 -point scale. Gaps were measured by finding the difference between these responses, resulting in a possible range from -6, indicating a massive shortfall, to +6, indicating a great degree of exceeding expectations.

Five measures were included to affirm importance of service characteristics, three measures to assess complaints and one measure was included to assess overall SCECO-East service quality and as a way of checking discriminate validity.

DATA ANALYSIS

SERVQUAL scores (perceptions minus expectations) can be used to assess a given firm's quality for each service feature. It is needed to measure the expectation level of a customer for a specific feature. The firm's performance can then be judged on the service given to the customer.

The mean item score for the expectations component is 6.25 and for perceptions is 5.59 on a seven point scale. SERVQUAL scores, which can be ranged from -6 to +6 on which zero implies that consumer perceptions and expectations coincide, negative values imply perceptions fall short of expectations and positive values imply perceptions exceed expectations, has a mean of -0.65. The mean of -0.65 for the SERVQUAL measure implies that on average respondents' perceptions fell short of their expectations which is logical if expectations are considered ideal. The average minimum value of SERVQUAL for all customers is -4.76, while the maximum is 2.81. Lower negative gap scores imply high level of perceived service quality, i.e. customer perceptions come closer to matching expectations.

Variable*	N	Mean	Standard Deviation	Min	Max
ETOT	124	6.24	1.23	1.14	7
PTOT	124	5.59	1.32	1.48	7
SQTOT	124	-0.65	1.09	-4.76	2.81

1

¹ ETOT is the overall mean score of customer expectations.

PTOT is the overall mean score of customer's perceptions.

SQTOT is the overall mean score of service quality

Features SERVQUAL

The following table shows the mean scores r for the 21 statements used in the customer survey (mean scores on 1 to 7 scale) for expectation, perception and service quality customers rated "feeling safe in their transactions" as the most essential feature required from an excellent electrical company (the mean score 6.46). The second essential feature was "the employees should appear neat". Surprisingly, customers rated "to have employees who give customers personal attention" as the least essential feature (mean score 5.99). The second least important feature was "to have the customers' best interests at heart."

These results of customers' requirements from an excellent electrical company illustrated the way SCECO- East customers form their expectations. Customers have high ratings for all items (more than 5.99) and they are least expecting to have special treatment (i.e. personal attention and having customers' best interest at heart). This may be due to the fact that SCECO-East is a I semi-public monopolistic organization, which deals with average I customers who do not expect employees to be rewarded for dealing with them in a more polite manner than the average level. However, customers think

"Feel safe in their transaction and having employees that will be neat appearing" should be provided by any excellent electrical company either a monopoly or a competitive, private or public firm.

Description	MEAN		
	E	P	SQ
Modern Equipment	6.23	5.73	-0.50
Physical facilities	6.25	6.00	-0.25
Neat-appearance	6.42	5.90	-0.52
Visually appealing materials	6.15	5.58	-0.58
Sincere in solving problems	6.24	5.58	-0.66
Perform right the first time	6.18	5.41	-0.77
Provide at they promise to do so	6.13	5.34	-0.79
Keep error-free records	6.22	5.63	-0.59
Tell exactly when perform	6.18	5.49	-0.69
Provide prompt service	6.28	5.41	-0.87
Willing to help	6.34	5.76	-0.58
Never too busy to respond	6.34	5.60	-0.74
Instill confidence in customers	6.22	5.56	-0.66
Make customers feel safe	6.46	5.90	-0.55
Courteous with customers	6.41	5.80	-0.61
Have knowledge to answer customers questions	6.40	5.51	-0.88
Give customers individual Attention	6.18	5.23	-0.95
Have convenient operating hours	6.28	5.96	-0.32
Employees give customers personal attention	5.99	5.51	-0.48
Have the customers' best interest at heart	6.06	5.32	-0.74
Understand specific needs of customers	6.24	5.42	-0.82

Customers perceived "SCECO' s physical facilities are visually appealing" as the highest rating (mean score of 6.00 on a scale of 7) and the second highest performance of SCECO- East was "having operating hours convenient to all customers."

SCECO- East invested in their facilities to bring them up to a high standard. The three district offices are new and have comfortable, large, air-conditioned reception areas for customers. Customers compare SCECO-East facilities with those of similar industries (i.e. telephone companies) and so rated SCECO-East with the highest score. In addition, SCECO-East opens from early morning to late afternoon (7.00 AM till 3.30 PM) while no other public service company in Saudi Arabia has these timings.

The lowest rated performance of SCECO-East was "giving customer individual attention" with a mean score of 5.23. The second lowest customer perception of SCECO performance was "to have the customers' best interest at heart" with a mean of 5.32. Obviously, these low ratings were due to the nature of the .I organization and employees in a public monopoly firm.

Service quality, which is found by subtracting expectation from perception (P-E), is favorable when it is more positive (least negative). As Table 2 shows, the highest score for SCECO-East service quality was the "physical facilities" and again, the second highest SQ score was the feature that SCECO has convenient operating hours. These highest scores in SQ is similar to that of perception scores. One reason explaining these similarities are that E scores are approximately similar among the 21 features with slight differences, so what differentiates is the perception scores.

The least SCECO- East perceived service quality was with the attribute "give customers individual attention" (mean score of- 0.95) and this tallies with customer perception and the reason was well explained. The second least perceived quality was "to have employees knowledgeable to answer customer questions." The main source of low SQ score is that the customers expectation to have knowledgeable employees to answer their questions was reasonably high (mean 6.40) but the frontline staff who receive customers are usually non-technical employees and are unable to answer customers technical questions and need to refer the customer requests to the engineering unit, which means customers need to wait for SCECO responses of their questions.

Dimensions SERVQUAL

As shown in the following table, scores for SCECQ- East consistently exhibit greater variation across dimensions than the perceptions only score. The perception ratings suggest placing equal emphasis on improving reliability and empathy. In addition, SCECQ-East should focus more attention on improving empathy rather than on enhancing responsiveness. SCECQ-East performance in tangibles was rated the highest among the five service dimensions with the best SQ score (mean of -0.47). The least SERVQUAL score was with responsiveness (mean of -0.72). SCECQ-East should put effort into enhancing their employees so that they are able to provide prompt service and are more willing to help customers.

Dimension	E	P	SQ
Tangibles	6.26	5.80	-0.47
Reliability	6.19	5.49	-0.70
Responsiveness	6.29	5.57	-0.72
Assurance	6.37	5.70	-0.68
Empathy	6.15	5.49	-0.66

Overall SERVQUAL Across Service Categories

In addition, mean scores across each of service type (new, reinforcement, splitting), load type (residential, commercial and industrial) and load classification (less than 400A, more than 400A and less than 5000A, more than 5000A) were examined.

The following table reports the means of respondent's expectations and perceptions of SCECO-East performance and service quality among different service categories. Judging from the average responses of all customers, the expectation score was 6.25 and the SCECO- East performance was slightly less than customers' expectations with a score of 5.59 resulting in SQ score of -0.65.

Variable	All Samples	SERVICE TYPE				LOAD TYPE				LOAD CLASS			
		New	Reinf.	Split	?	Res	Com	Ind	?	<400	S/S	> 5000	?
E	6.25	6.21	6.46	6.91	5.97	6.14	6.56	6.53	5.97	6.30	6.33	6.06	6.1
P	5.59	5.59	5.37	6.08	5.12	5.59	5.73	5.99	5.16	5.49	5.79	5.58	5.54
SQ Unweighted	-0.65	-.51	-1.08	-.83	-.85	-.55	-.83	-.53	-.80	-.81	-.53	-.48	-.55
SQ Weighted	-0.66	-.51	-1.12	-.92	-.86	-.55	-.85	-.54	-.83	-.80	-.57	-.51	-.56
Sample Size	124	84	18	6	16	68	31	8	17	53	33	5	83

Considering the service types, reinforcement service correspond with least SCECO-East performance and least quality (mean score -1.08). New supply service which is a regular to many customers achieved the highest rating of SQ and least with regard to customer expectations of service features. Similarly, commercial customers rated SQ least (mean score of features -0.83) and industrial and residential customers rated SQ of service features highest (mean score of -0.53 and -0.55 respectively).

Customers of low load class (less than 400 ampere) perceived SCECO performance with least scores among the other load classes, making service quality the worst (mean of -0.81). Customers of load class between 400 and 5000 amperes (which are the second largest load class) rated SCECO performance the highest among all load classes (mean 5.79) but, due to highest expectations ratings of this class (mean of 6.33), the result was a service quality of -0.53 (SQ of industrial customers was -0.48 and E = 6.06).

Dimensions' SERVQUAL Across Service Categories

Dimensions of service differ across the service types/categories provided by SCECO-East. Table (5) shows average score for expectation, perception and service quality among the three service types, namely, new supply, reinforcement of existing supply and splitting the existing supply to more kilo-watt hour meters.

The highest shortfall of service quality (-1.26) occurred in the responsiveness dimension for reinforcement applications. The second highest unfavorable SQ score was (-1.21) in reliability, and for reinforcement applications.

The most favorable SERVQUAL scores occurred, in general, in new applications with slight differences among the five dimensions. The most favorable was (-0.26) for tangible features. Reliability and responsiveness dimensions received the least favorable SERVQUAL scores among the five dimensions for all service types.

Expectations scores showed that the new customers have the least expectation across all service dimensions. The lowest expectation was (6.09) in empathy and (6.18) in reliability as these customers have no prior experience with such types of service. The highest expectations scores were in assurance and then in reliability in splitting applications.

Table (5): Mean Scores of E, P, SQ Per Dimension for Different Service Types

DIMENSIONS	E				P				SQ			
	N	R	S	?	N	R	S	?	N	R	S	?
Tangibles	6.24	6.33	6.79	6.09	5.09	5.32	6.33	5.17	-0.26	-1.01	-0.46	-0.92
Reliability	6.18	6.32	6.96	5.8	5.66	5.11	5.88	4.84	-0.52	-1.21	-1.08	-0.95
Responsiveness	6.24	6.51	6.92	6.05	5.67	5.25	5.88	5.23	-0.57	-1.26	-1.04	-0.81
Assurance	6.32	6.62	7	6.16	5.76	5.64	6.04	5.25	-0.55	-0.99	-0.96	-0.9
Empathy	6.09	6.5	6.9	5.8	5.5	5.52	6.23	5.11	-0.59	-0.98	-0.67	-0.68
Sample size	85	18	6	16	85	18	6	16	86	18	6	16

Regarding load types: residential, commercial and industrial customers, the least favorable SERVQUAL scores were rated by commercial customers. A mean score (-0.97) was rated by commercial customers for assurance dimension, the second worst rated by them was also for responsiveness (-0.95).

Tangibles received the best SQ scores for all customer load types. Industrial customers rated tangibles (-0.25), which is the most favorable SQ scores among all load types and dimensions. The second highest score was rated by residential customers, with a mean score of (-0.36).

Responsiveness received the worst SQ scores across all load types, followed by reliability, as is clearly shown in Table 6.

Table (6): Mean Scores of E, P, SQ Per Dimension for Different Load Types

DIMENSIONS	E				P				SQ			
	R	C	I	?	R	C	I	?	R	C	I	?
Tangibles	6.21	6.41	6.47	6.09	5.85	5.94	6.22	5.1	-0.36	-0.47	-0.25	-0.98
Reliability	6.11	6.54	6.37	5.81	5.5	5.68	5.87	4.9	-0.6	-0.85	-0.5	-0.91
Responsiveness	6.21	6.56	6.62	5.97	5.6	5.6	5.97	5.18	-0.61	-0.95	-0.66	-0.79
Assurance	6.25	6.74	6.56	6.13	5.71	5.77	6.09	5.32	-0.54	-0.97	-0.47	-0.81
Empathy		6	6.55	6.6	5.86	5.43	5.64	5.85	5.29	-0.56	-0.91	-0.75
Sample Size	69	31	8	17	69	31	8	17	69	31	8	17

Expectations of residential customers were lower than the others. The highest scores of expectations were reported by commercial and industrial customers with the highest mean expectation score of (6.74) in assurance by commercials, followed by the expectation in responsiveness by industrial customers (6.62).

Expectations, perceptions and service quality scores for each service dimension across the three load classes were:

1. Low load class: Less than 400 Amperes
2. Substation load class: More than 400 but less than 5000 amperes
3. High load class: More than 5000 amperes , as shown in Table 7. I

The worst SQ score was reported by low load class with highest score of (-0.86) in responsiveness and then (-0.85) in empathy. However, the most favorable SQ scores across the five dimensions were reported by customers of substation load class.

Tangibles dimension received the most favorable SQ scores across all load classes with a best value of (+0.2) rated by high load class customers, which is followed by substation load class customers (-0.32).

The expectations pattern shows that expectations of substation load class were higher than the other classes across the service dimensions. High load customers scored least expectations scores because they have a lot of experience with service and usually they plan in advance. The least expectation score was (5.75) for tangibles and (5.80) for responsiveness and the highest score was (6.60) for assurance. All least and highest expectation scores were reported by high load class customers.

Table (7): Mean Scores of E, P, SQ per Dimension for Different Load Classes

DIMENSIONS-	E				P				SQ			
	L	S	h	?	L	S	h	?	L	S	h	?
Tangibles												
Reliability	6.29	6.23	6.25	5.98	5.47	5.66	5.65	5.33	-0.082	-0.57	-0.6	-0.64
Responsiveness	6.36	6.38	5.8	6.14	5.49	5.74	5.2	5.57	-0.86	-0.64	-0.6	-0.57
Assurance	6.37	6.48	6.6	6.23	5.6	5.92	6	5.59	-0.77	-0.56	-0.6	-0.64
Empathy	6.15	6.3	5.92	6.03	5.3	5.74	5.2	5.59	-0.85	-0.56	-0.72	-0.44
Sample size	54	33	5	33	54	33	5	33	54	33	5	33

Relative Importance of Service Dimensions

ZPB (1990) recommended the use of importance weights merely to compute a weighted average SERVQUAL score (across the five dimensions) as an indicator of the company's overall service quality gap. Moreover, the importance weights that ZPB (1990) used are weights for the dimensions (derived from the customer responses to a 1 DO-point allocation question) not for the individual SERVQUAL items.

Results from the questions asked customers to allocate 100 points across the five SERVQUAL dimensions are shown in Table (8).

Customers rated all the five dimensions as critical. However, the relative importance of the five dimensions in predicting overall quality is that reliability is considered the most critical dimension. Tangibility is the second most important dimension. Empathy is the least important dimension.

SCECO- East customers noted that breaking the service promise is the most important way the service companies fail their customers. Service reliability is part of the core for most customers. The caring and individualized attention SCECO- East provides its customers is considered the least important as this type of service is provided with certain ministerial rules and regulations. It is worth mentioning that since the importance rates were slightly similar across the five dimensions, the effect of weighting values would be minimal.

Table (8): Relative Importance of Service Dimensions

DIMENSION	MEAN POINT OUT OF 100
Tangible	21
Reliability	22
Responsiveness	20
Assurance	19
Empathy	17

Weighted Service Quality

Importance of a particular service attribute is very relevant in an evaluation of overall quality.

The equation above shows that all three variables, importance, perception and expectations, are material in evaluating overall quality.

The coefficients of variation for importance of the five service dimensions ranged from 0.17 to 0.22 and had a mean of 0.19. This indicates relatively stable and homogeneous values of importance. The weighted SERVQUAL scores for each respondent was obtained by multiplying the respondent's mean gap score for each dimension by the dimension's relative importance weight and summing the results across the five dimensions.

The weighted overall service quality score is -0.66 compared to an un-weighted overall service quality score of -0.65. The slight difference between the two scores is mainly due to slight differences of the importance values for service dimensions as have been rated by customers.

SCECO-East customers rated all the five dimensions with nearly equal scores which had only a slight effect on the overall score of service quality.

Overall Quality Measure

One question was asked to customers to rate the overall SCECO- East service quality. The overall mean quality score was 5.74, on a 7-point scale where 7 represents excellent and 1 represents poor quality.

No customer in the whole sample has rated SCECO-East quality as poor. The minimum rating for the overall quality was 3, which is nearly in the mid point of the scale.

SERVQUAL across Customer Demographics

The demographic characteristics of respondents are reported in Tables 9 and 10. The least educated customers rated SCECO-East performance the highest among all levels of education with the most favorable SQ score (-0.035). The second highest rating for SCECO- East performance was by the most highly educated customers (university graduates). The lowest SERVQUAL score was rated by customers with secondary level education (mean rate of -0.73).

With respect to age, the respondents of age ranging between 25 and 30 years, rated SCECO-East with the most favorable SQ score (mean of -0.39). However, service quality was rated least by respondents of age between 41 and 50 years. One reason for this is that the expectation for age ranging between 25 and 30 years was the lowest among all age ranges (mean score 5.89) and may be due to low exposure of the young people to such type of services. Their perception of SCECO-East was slightly less than their expectation, making the gap very narrow.

The age range of 41 to 50 years have a higher expectation score (6.16) and their perception of SCECO performance falls short of their expectation (5.32), resulting in the bigger gap (-0.84).

Table (9): Mean Score of E, P, SQ with respect to Customers' Educational Level

EDUCATION LEVELS	E	P	SQ	SAMPLE SIZE
Primary	6.67	6.63	-0.036	8
Medium	5.61	5.01	-0.59	9
Secondary	6.22	5.49	-0.73	37
University	6.18	5.72	-0.46	33
Undefined	6.39	5.49	-0.9	37

Table (10): Mean Score of E, P, SQ with respect to Customers' Age

AGE RANGE	E	P	SQ	SAMPLE SIZE
25-30	5.89	5.5	-0.39	26
31-40	6.31	5.74	-0.57	40
41-50	6.16	5.32	-0.84	15
More than 50	6.59	6.05	-0.54	6
Undefined	6.41	5.54	-0.87	37

With respect to the service dimensions, tangibles and empathy SERVQUAL scores were positive (Table 11), meaning the performance of SCECO-East is much greater than the expectations of low educated customers (primary level).

Responsiveness dimension were rated the worst among all education levels except graduate customers, who rated empathy dimension as the worst.

Table 12 shows SERVQUAL scores across the five dimensions with respect to customer ages. Tangibles was rated as the most favorable among all dimensions by young customers aged 25 to 30 years, where empathy was rated the worst among all the dimensions by the customers of ages 41 to 50 years.

Table (11): Dimensions of SERVQUAL Scores across Education Levels of Customers

Dimension	Primary	Medium	Secondary	University	Undefined
Tangibles	0.031	-0.22	-0.55	-0.2	-0.78
Reliability	-0.094	-0.66	-0.76	-0.44	-1.01
Responsiveness	-0.19	-0.8	-0.8	-0.53	-0.9
Assurance	-0.09	-0.61	-0.76	-0.38	-1.02
Empathy	0.12	-0.64	-0.77	-0.56	-0.82
SQ Total Un weighted	-0.04	-0.59	-0.73	-0.45	-0.91
SQ Total Weighted	-0.04	-0.63	-0.76	-0.44	-0.91

Table (12): Dimensions of SERVQUAL Scores across Age Levels of Customers

Dimension	25-30	31-40	41-50	> 50	Undefined
Tangibles	-0.18	-0.39	-0.56	-0.33	-0.73
Reliability	-0.4	-0.56	-0.75	-1	-0.99
Responsiveness	-0.6	-0.64	-0.81	-0.62	-0.86
Assurance	-0.37	-0.59	-0.79	-0.33	-0.99
Empathy	-0.4	-0.66	-0.83	-0.43	-0.8
SQ Total Un weighted	-0.39	-0.57	-0.84	-0.54	-0.87
SQ Total Weighted	-0.41	-0.57	-0.87	-0.54	-0.88

Problem Resolution

Three possibilities arise when a customer experiences a service problem. They are as follows:

1. The customer complains and is satisfied with the company's response.
2. The customer complains and is not satisfied with the company's response.
3. The customer does not complain to the company and remains dissatisfied.

Of these outcomes, the first is good and the last two are very bad.

To visualize the issue, the current research asked SCECO- East customers the following four questions:

1. Whether they had experienced a service problem with SCECO- East.
2. If they had experienced a problem, and whether it was resolved to their satisfactory level.
3. Whether they had reported any service deficiency to SCECO- East management.
4. What the biggest problem they ever experienced with SCECO-East was.

The answers to the first three questions were either "Yes" or "No", while for the fourth question, space was left for the respondents to freely mention the critical issues they had experienced with SCECO- East.

Table (13): Frequencies and Percentages of Respondents Experiencing Problems

	N	N	Y	Y
ITEMS	Frequency	Percentage	Frequency	Percentage
Problem Encountered?	74	60.7	48	39.3
Problem Resolved?	36	39.6	55	60.4
Complaint Submitted?	101	87.1	15	12.9

Table (13) summarizes the results of customer responses regarding their experience with service problem resolution of SCECO-East. About 40% of the total sample experienced a problem while receiving a service from SCECO-East. Tables (14) and (15) show cross-tabulation of problems, resolutions and complaints. Of those customers having a problem, only 56% had their problems resolved by SCECO. Another important result is that only 10% of the total sample (about 24% of customers are , having problems) reported the deficiency to the management of SCECO-East.

Table (14): Cross Tabulation of (Problems) vs. (Resolved)*

Problem? / Resolved?	N	Y	TOTAL
N	15(16.5%)	28(30.8%)	43(47%)
Y	21(23.1%)	27(29.7%)	48(53%)
TOTAL	36(39.6%)	55(60.4%)	91(100%)

*Values in parentheses are percentages of total.

Table (15): Cross Tabulation of (Problems) vs. (Complaints)*

Problem? / Complaint?	N	Y	TOTAL
N	65(56%)	4(3.5%)	69(59.5%)
Y	36(31%)	11(9.5%)	47(40.5%)
TOTAL	101(87.1%)	15(12.9%)	116(100%)

*Values in parentheses are percentages of total.

A further step was taken to investigate the source of problems r across categories of services provided by SCECQ-East (Table 16). : Among all the new applications, 37% of them faced a problem in processing their applications. The rate was higher (45%) among reinforcement cases.

SCECQ-East requirements for new supply could easily be provided by the customers because the owner of the building is involved in the process.

There is no urgency concerning the supply of power because the processing of supply is made ahead of completing the construction of the building. On the other hand, in reinforcement cases, the owner may not be involved or unavailable and the renter cannot provide all SCECO-East requirements. In addition, the urgency and speed of the power supply is the issue because the existing power supply cannot handle the load especially in the summer season.

Similarly, problems faced by residential customers constitute about 68% of all the problems faced by other customer load types: commercial and industrials. Of all the residential customers who applied to SCECO-East, 45% faced a problem with SCECO-East, while 35% of commercial customers faced problems.

Table (16): Cross Tabulation of Problem across Service Categories*

Problem Service Category	SERVICE TYPE				LOAD TYPE				LOAD CLASS			
	N	R	S	Total	R	C	I	Total	L	S	H	Total
N	53 (48.6)	10(9.2)	3(2.8)	66 (60.5)	38 (35.2)	20 (18.5)	4 (3.7)	62 (57.4)	34 (36.6)	18 (19)	1(1.1)	53(57)
Y	32 (29.4)	8 (7.3)	3 (2.8)	43 (39.5)	31 (28.7)	11(10.2)	4 (3.7)	46 (42.6)	21 (22.6)	15 (16)	4(4.3)	40 (43)
TOTAL	85(78)	18(16.5)	6(5.5)	109(100)	69(63.9)	31(28.7)	8(7.41)	108(100)	55 (59)	33(35.5)	5(5.4)	93(100)

Considering customers across several load classes, 43% of them faced problems. 53% of all customers facing problems were of low load class with total amperage of less than 400 Ampere. In addition, while 38% of all low load class faced a problem, 45% of all the substation load class (amperage between 400-5000) also faced problems.

Table 17 summarizes the SERVQUAL scores for customers i grouped according to their responses to the three questions segmented to variables: Problem, Resolved and Complaints. r The most favorable service quality scores were from customers , whose problems were resolved satisfactorily. The next most favorable SQ scores were from customers who had experienced no recent service problems with it. Lastly, the worst scores were from customers whose problems were not resolved satisfactorily.

Table (17): SERVQUAL Scores of Respondents with Respect to Problem Resolutions

SERVQUAL	PROBLEM			RESOLVED			COMPLAINTS?		
	N	Y	U	N	Y	U	N	Y	U
SQ Un- Weighted	-0.54	-0.8	-0.4	-0.99	-0.51	-0.51	-0.66	-0.79	-0.39
SQ Weighted	-0.55	-0.9	-0.4	-1.01	-0.52	-0.51	-0.67	-0.79	-0.4
Sample Size	72	48	4	36	54	34	99	15	10

Main Customer Concerns

When customers were asked about areas they experienced problems in service delivery, they listed the following problems:

1. Requesting for loads substation room for reinforcement applications for loads of more than 400 amps.
2. Delay in reinforcement applications even when SCECO- East aware of the fact that circuit breaker is always tripping.
3. Delay in electrification of farms.
4. Difference in technical instructions from one employee to another.
5. Removal of SCECO- East equipment from customer's land.
6. Civil engineers not available.
7. Not maintaining SCECO-East equipment.
8. Justification for requesting service meters.
9. Mismatch between meter capacity and building requirements.
10. Delay in project execution.
11. Poor coordination between SCECO-East and Engineering/Consultant Offices.
12. Providing electric power on the basis of actual costs.
13. Delay in shifting meters.
14. Not giving all deficiency remarks at once.
15. Not complying with number of units approved by Baladia.
16. Differences in procedures between various SCECO-East branch offices and its managers.
17. High cost of bills.
18. Tough dealings/inequality with customers.
19. Changes in SCECO- East procedures/requirements from one time to another.
20. No clear authority for frontline staff to take actions. 21. Difference between SCECO- East requirements and Baladia.

The above list clearly shows the dilemma of the reinforcement applications either in the delay of response/execution or on requesting substation room from the customers when their loads become more than 400 amperes. SCECO- East needs to put more effort into examining the above problems and establishing a radical solution to overcome these problems.

Correlation Analysis

The correlation matrix of SERVQUAL items is shown in Table (18). As a rule, items representing a distinct dimension should correlate highly with each other in a uniform pattern, and should not correlate as strongly with items representing another dimension. The correlations reveal that the rules for convergence (within the same dimension) and discrimination (between different dimensions) do not hold to support the existence of purely distinct five dimensions as proposed by PZB.

For instance, the first four items (Q 1 to Q4), which represent the "tangibles" dimension of service quality, should converge by exhibiting uniformly high correlation among themselves, and discriminate by exhibiting low correlation with items in other dimensions.

As evidenced in Table 18, the proposed dimensions exhibit neither pure convergence nor discrimination. A strong correlation (more than 40%) exists between most items. The strongest convergence correlations were expressed in responsiveness dimension with correlations between 56% and 75%, whereas the weakest convergences were within the tangible dimension with correlation of 54 % to 64%.

Similarly, the strongest discrimination exists between tangibles and empathy dimensions, with correlation ranging from 31 % to 55%, whereas the weakest were responsiveness and assurance, with correlation of 56% to 71%.

Analysis of Variance

The scale convergent validity is the association between SERVQUAL and responses to a question that asked customers to provide an overall quality rating of SCECO- East. Respondents rated SCECO-East overall quality by checking a score from 1 to 7, where 7 is the best rating.

The correspondence between the overall quality ratings and the SERVQUAL scores (obtained through the difference between customers' expectations and perceptions) was examined using one- way ANOV A. The treatment variable in the ANOV A's was overall quality (OQ) with 5 levels instead of 7 because very few respondents checked 1, 2, thereby necessitating creation of a combined 1, 2, and 3 levels. The dependent variable was the average difference score (P-E) on each SERVQUAL dimension as well as on the total SERVQUAL scale (separate ANOV A's were conducted for each dimension and for the total scale), Table 19.

The R -square represents the degree of association between the SERVQUAL scores and the overall quality. SERVQUAL numbers are mean values on a scale ranging from -6 to +6 on which the higher (less negative) the score, the higher is the level of perceived service quality. The strength and persistence of linkage between the overall quality and SERVQUAL scores across the whole combined dimensions offer stronger support for SERVQUAL's convergent validity (27%) than for each separate dimension.

Furthermore, the association between SERVQUAL scores and overall service quality measures was tested by obtaining the Pearson Correlation Coefficient. The result was 0.48 which is statistically significant indicating the SERVQUAL score represents the overall quality measure.

Table (19): ANOV A Results

SCALE DIMENSIONS	R-SQUARE	SERVQUAL
Tangibles	0.21	-0.4
Reliability	0.18	-0.64
Responsiveness	0.24	-0.66
Assurance	0.22	-0.61
Empathy	0.25	-0.59
Combined Scale	0.27	-0.59

Stepwise Regression

Step-wise procedure is appropriate to search for the "best" model by bringing into the regression equation the dependent variables one by one. Each variable in the model is tested as a new variable enters.

The dependent variable was the overall service quality (SQ). The independent variables that were allowed to enter the model in steps were the five service dimensions: Tangibles (Tan), Reliability (ReI), Responsiveness (Res), Assurance (Ass), and Empathy

(Emp). The regression results show considerable stability in that none of the previously entered variables were removed from any equations as a result of adding one more variable. This also suggests that there is little multi-co linearity problem, and hence the explanatory power of each of the models is greatly improved. All five models show relatively high predictive powers in that the adjusted R2 ranges from 0.87 to 1.00. Table 20 shows the results of stepwise procedures results of the best-fit regression equation.

In essence, the model suggests that the overall level of service quality (SQ) is positively related to tangibles, reliability, responsiveness, assurance and empathy. It is clear that nearly all the five

variables have similar effects (by standardized regression coefficients) on the level of customer SQ. In particular, "empathy" has a greater effect on the level of SQ (Beta value of 0.24) .

F values are significant, suggesting the stability of the model. Five variables account for adjusted R2 of 1.00 on the overall level of SQ for the model. Moreover, the five R2,s are also very close, indicating that there is little shrinkage and that the subsequent combined equation to be developed would be very robust as a predictive tool.

Table (20): Step-wise Procedure for Dependent Variable SQ

Model	Variable	B	R2	F -Value*
1	RES	0.82	0.87	798
2	RES	0.49	0.94	213
	EMP	0.41		140
3	TAN	0.3	0.98	215
	RES	0.34		227
	EMP	0.25		271
4	TAN	0.22	0.99	214
	REL	0.21		156
	RES	0.26		246
	EMP	0.3		426
5	TAN	0.19	1	
	REL	0.19		
	RES	0.19		
	ASS	0.19		
	EMP	0.24		

GAP 1 -Not Knowing What Customers Expect

Gap 1 is defined as the managers' perceptions of customer expectations minus the customers' expectations. It measures how well the service provider knows what his customers expect. The following table compares principals' perceptions of customers' requirements with those declared by customers.

It is interesting that there is agreement between customers and principles on several dimensions. The slight disparity indicates that the service quality needs of customers are not being fully identified for dimensions of tangibles, assurance and empathy. A positive score for reliability indicates that management are greatly concerned about this dimension and consider it as the most

important with respect to customers. Empathy, which is rated with least expectation score by both principals and customers, indicates that both management and customers do not expect individualized and personal attention by contact employees during service delivery. There may be two plausible reasons for this. First, SCECO-East is considered as a government monopoly agency and customers would not expect personalized attention by SCECO-East employees. Secondly, SCECO-East principals think that services provided to customers are standards in nature and there is no chance for customization.

Gap 1

Service Dimension	Principals	Customers	Gap1
Tangibles	6.04	6.26	-0.22
Reliability	6.36	6.19	0.17
Responsiveness	6.28	6.29	-0.01
Assurance	6.21	6.37	-0.16
Empathy	5.97	6.15	-0.18

Management Perceptions of Customer Expectations

The following table reports mean scores of management perceptions of customers' expectations. The total mean item for the expectations component of 21 features is 6.11. This measure is lower than the mean reported by customers which is 6.25, meaning that SCECO- East management slightly underestimates customers' expectations.

Items	Features	E Managers	E customers	Difference
1	Modern equipment	6.57	6.23	0.34
2	Physical facilities	5.83	6.25	-0.42
3	Neat-papering	5.71	6.42	-0.71
4	Visually appealing	6.00	6.15	-0.15
5	Sincere in solving problems	6.28	6.24	0.04
6	Perform right the first time	6.00	6.18	-0.18
7	Provide as they promise to do so	6.86	6.13	0.73
8	Error free records	6.28	6.22	0.06
9	Tell exactly when perform	6.57	6.18	0.45
10	Prompt services	6.43	6.28	0.15
11	Willing to help	6.14	6.34	-0.20
12	Never too busy response	6.00	6.34	-0.34

13	Instill confidence	6.14	6.22	-0.08
14	Customers feel safe	6.14	6.46	-0.32
15	Courteous with customers	6.00	6.41	-0.41
16	Have knowledge to answer	6.43	6.40	0.03
17	Give customers individual attention	6.17	6.18	-0.01
18	Have convenient operating hours	6.86	6.28	0.58
19	Employees give customers personal attention	6.14	5.99	0.15
20	Have the customers' best interest at heart	5.71	6.06	-0.35
21	Understand specific needs of customers	6.00	6.24	-0.24
	Expectations	6.11	6.25	-0.14

Judging from the average responses for managers' perceptions of customer expectations for the 21 service features, two features received extremely high average responses, indicating that SCECO-East management felt them to be of most importance to the customers. These are: providing services at the time they promise to do (a reliability feature) and having convenient operating hours (empathy feature). While all scores are high (more than 5.50 on a scale of 7), two features were rated by principles as the least important to customers. These are: employees being neat in appearance (a tangible feature) and having customers' best interest in mind (an empathy feature).

Comparing these results of management perception of customers' expectations with those obtained earlier from customers, we could have the following inferences:

1. SCECO-East management underestimates more than 50% of 21 service features. This is shown in minus signs in the fourth column. The higher the negative difference, the more gap in knowing customer expectations by the management.
2. While some items rated highest by customers, SCECO-East management rated these items with lowest scores. One example is "employees to be neat in appearance", rated by customers as the second essential feature, while SCECO- East managers rated it **the** least important features.

Antecedents of Gap 1

The reasons for Gap 1 are lack of marketing research, inadequate upward communication and too many levels of management. SCECO-East management view the number of management levels as the main source of this gap (the following Table).

Item	Construct	Direction *	Mean Score
1	Marketing Research Orientation	-	3.28
2	Upward Communication	-	3.33
3	Levels of Management	+	5.14

*Minus sign indicates that scores of these items were reversed in calculating the gap.

Table below shows the specific variables responsible for gap 1. The increased number of management levels between top managers and contact personnel affected the quality of communication between the two parties, which contribute to underestimating customers' requirements by principals as the messages received from contact personnel are not clear.

Item	Variables	Mean Score
1	Amount of improvement research	2.71
2	Implementation of improvement research	3.28
3	Degree to which improvement research focuses on service quality issues	3.28
4	Extent of direct interaction between managers and external customers	3.86
5	Extent of employee-to-manager communication	2.86
6	Extent to which inputs from contact personnel are sought	3.28
7	Quality of contact between top managers	3.86
8	Number of layers between personnel in contact with customers and to managers	5.14

Overall Gap between Managers and Customers

One item was added in the principal's survey to rate the gap between SCECO- East managers in understanding/knowing customers expectations. The overall gap, as rated by principals, between SCECO- East management and its customers was 4. 71, on a 7 -point scale where 7 -represents the greatest size of discrepancy and 1-represents the lowest.

GAP 2 -The Wrong Service Quality Standards

This is the gap between managers' perception of customers' expectations and the quality standards they establish to translate those expectations into specifications for delivering the appropriate level of service. The following tables show the factors and specific variables contributing to Gap 2.

Gap 2 Antecedents

Item	Construct	Direction *	Mean Score
1	Management commitment to service quality	-	2.9
2	Goal-setting	-	3.28
3	Task standardization	-	2.86
4	Perception of feasibility	-	2.78

*Minus sign indicates that scores of these items were reversed in calculating the gap.

Scores of Specific Variables of Gap 2

Item	Variables	Mean Score
1	Resource commitment to quality	2.71
2	Existence of internal quality programs	2.86
3	Management recognition for quality commitment	3.14
4	Existence of a formal process for setting quality of service goals	3.28
5	Use of technology to standardize operations	2.86
6	Capabilities/systems for meeting specifications	2.71
7	Extent to which managers believe consumers' expectations can be met	2.86

GAP 3 -The Service Performance Gap

This measure represents the performance gap between service specification and service delivery. The size of this gap depends upon employee willingness and ability to perform at the appropriate level.

Table below shows the antecedents or the key contributing factors of gap 3. Frontline staff of SCECO-East rated "role conflict", which relates to incompatible or too demanding expectations of top managers, immediate supervisors and customers over contact personnel, as the main problem (mean of 4.6 on 7 point scale) contributing to this gap. The other problem area is the "role ambiguity" (mean of 4.52) which relates to unclear information necessary to perform jobs adequately and how employee performance will be evaluated and rewarded.

Antecedents of Gap 3

Item	Construct	Direction *	Mean Score
1	Team Work	-	4.05
2	Employee -job fit	-	3.02
3	Technology-job fit	-	3.89
4	Perceived control	-	4.09
5	Supervisory control systems	-	3.83
6	Role conflict	+	4.6
7	Role ambiguity	+	4.52

*Minus sign indicates that score of these items were reversed in calculating the gap.

Table below shows the specific variables responsible for each factor. "Extent to which employees perceive they are in control of their job" is perceived by frontline staff as the greatest variable responsible for the size of gap 3 (mean of 5.22). SCECO-East contact personnel perceive themselves to be not in control of situations they encounter in their jobs. The second highest

variable responsible for gap 3 as perceived by frontline staff is the "amount of paper work needed to complete service transactions" with mean of 5.11.

Scores of Specific Variables of Gap 3

Item	Variables	Direction	Mean Score
1	Extent to which employees view other employees as customers	-	3.86
2	Extent to which contact feel upper level managers genuinely care from	-	4.53
3	Extent to which contact personal feel they are cooperating rather than competing	-	3.63
4	Extent to which employees feel personally involved and committed	-	4.21
5	ability of employees to perform a job	-	2.59
6	importance and effectiveness of selection process	-	3.42
7	apparitions of tools and technology for performing job	-	3.89
8	Extent to which employees perceive they are in control of their job	-	5.2
9	Extent to which contact employees feel they have flexibility in dealing with customers	-	3.67
10	predictability of demand	-	3.48
11	extent to which employees are evaluated in what they do (behaviors) rather than solely on output	-	3.83
12	amount of paper work needed to complete service transactions	+	5.11
13	number of internal contacts that contact-employee must make to complete a service transaction or answer customer queries	+	4.73
14	Existence of management policy that conflict with specifications	+	3.96
15	Frequently and quality of downward communication	-	4.87
16	extent of constructive feedback given to contact personnel	-	4.76
17	product knowledge of contact personnel	-	3.52
18	Product-specific training provided to contact personnel	-	4.78
19	training in communication skills provided to contact personnel	-	4.78

GAP 4 -Difference between Service Delivery and External Communications

Promising customers more than the firm can deliver will quickly lead to customer dissatisfaction and complaints. The two key factors contributing to this gap are the inadequate horizontal communications and propensity to over-promise. Following tables show the antecedents and the specific variables of this gap. SCECO-East employees felt that awareness of external communications to consumers before they occur and the differences of procedures across branches are the most important contributing issues of gap 4.

Antecedents of Gap 4

Item	Constructs	Mean Score
1	Horizontal communication	4.14
2	Propensity to over-promise	3.3

Scores of Specific Variables of Gap 4

Item	Variables	Direction&*Score
1	Extent to which contact personnel are aware of external communications to consumers before the occur	-4.4
2	Communications between contact personnel and engineering, construction and operation units	-3.5
3	Similarity of procedures across departments and branches	-4.37
4	Extent to which firm feels pressure to generate new business	3.56
5	Extent to which firm perceives that competitors over- promise	3.07

*Minus sign indicates that scores of these items were reversed in calculating the gap.

Comparison of Gap Sizes

Table below compares sizes of Gaps 1, 2, 3 and 4 as viewed by SCECO-East supervisors and frontline staff. Front-line employees believe Gap 3 is the largest, i.e. when delivery does not match the company's standards and specifications. Front line staff also agree that Gap 4 contributed to the problem, i.e. when the delivery does not match with the company's promises but to a lesser degree than Gap 3.

SCECO-East managers thought that they have an excellent understanding of customers' perception (Gap 1) and excellently translated these requirements into quality standards and specifications. Both Gaps 1 and 2 scores were either below the mid-point scale or near the midpoint.

The overall results are good with a need to empower SCECO- East frontline staff to reduce the deficiency in service delivery (Gap 3).

Comparison of Gap Sizes

	Mean Score*
Service Gap	
Gap 1 Not know in what customers expect	3.53
Gap 2 Wrong SQ standards	2.92
Gap 3 Service Performance Gap	4.14
Gap 4 When promises do not match delivery	3.78
Gap 5 Customers' expectations -perceived service	0.65

* All Gaps on scale of 7 except Gap 5 score from -6 to +6.

CONCLUSION & RECOMMENDATION

21 service features:

The 21 service features mentioned in this research correspond to all services as suggested by the literature and more closely with practices for private sectors. While 21 of the service features rated by SCECO-East customers to be important for them especially "feeling safe in their transactions", empathy features such as "give personal attention" and "to have customers' best interests at heart" received the least scores. They were not perceived to be important because customers do not expect to get these features in a monopoly service industry or government managed organization. , It is also possible that service customers may not have fully grasped the significance of what was being asked. Also concluded by this study is the excellent SCECO-East performance in tangible cues like physical facilities and its operating hours which achieved the highest SERVQUAL scores among the 21 features when performance was compared to expectation. The emphasis should be placed on selection and training of service front line personnel. SCECO- East as expected of this study to be more marketing oriented: to choose carefully the personnel who interact with customers, to regularly collect information about customer needs and ensure customer satisfaction.

Service Dimension:

It was found that responsiveness and reliability were rated by customers as of the lowest quality among the five dimensions. Only tangibles received a score below the total SERVQUAL mean. Based on (P-E) gap scores for items concerning these dimensions, the items relating to "providing service at they promise to do so" and "prompt service" revealed the biggest gaps. With these data, SCECO- East management should understand better the deficiencies in order to improve its services to customers and improve its image in the eyes of customers.

Service Categories:

Overall, there was some variation in ranking service quality across different service customer categories. The results of Table-4 suggested that those reinforcement, commercial applicants with a load class of less than 400 amperes rated SCECO-East performance with the lowest Scores. Moreover, the deficiency of performance occurred mainly in responsiveness and then in reliability dimensions. Reinforcement and commercial customers expecting a rapid response by SCECO- East as they require an urgent response. SCECO-East, based on these results, should

implement a certain procedure for reinforcement applications different from other applications as customers are suffering from loss of power due to shortage of capacity.

Gap1:

The results identified the fact that more effort is needed to improve the management perception of customer expectations especially in tangibles and empathy dimensions. Managers should spend more time with frontline staff to improve their knowledge of customer requirements.

In addition, there is a need for "flattening out" with some layers of management being omitted. This is to improve the upward communication to allow clearer messages to be transmitted from frontline staff through a shorter path to top management. SCECO- East should conduct several studies to identify customers' needs and the degree of satisfaction with existing service levels.

Gap2:

Management need to be more committed to service quality and set long-term goals for quality. It is needed to establish quality indicators and to target staff to improve those indicators.

Gap3:

The main area for improvement is eliminating the distress of role conflict. The result will be better employee performance, and hence a reduction of gap 3. As role conflict is related positively to feelings of job-related tension and negatively to job satisfaction, SCECO- East management should use performance measurement systems that focus on the consumer and internal efficiency goals. They should tie the compensation to service quality delivery as measured by performance measures.

There also needs to be more management focus on down- ward communication to clearly direct and influence personnel at lower levels in the organization. The more frequently managers provide clear and unambiguous communication, the lower employees' role ambiguity will be. Several other improvements such as empowering frontline staff to make decisions and the reduction of paper work are needed to complete transactions which will improve the service delivery and will narrow gap 3.

Gap4:

Frontline employees need to be aware of all company communications before they occur and participation in any campaign would result in more consumer expectations. SCECO-East management needs to enforce the coordination or integration of departments and different branches to achieve strategic objectives. SCECO-East should not allow managers of individual

branches to make significant changes in procedures and policies as consumers may not receive the same level of service quality across the branches.

Comparison of Gap Sizes:

The overall results of gap 5 is acceptable and customers state ~ that SCECO-East is delivering a quality of service that closely matches their current perceptions (score of -0.65, where 0 is the reference when expectation and perception are met). While customers seem pleased with the overall service quality, SCECO- East cannot stand still as customers' expectations are likely to increase over time.

Gap 3 is more critical than the other four managerial gaps in affecting perceived service quality and in explaining service quality variations. Because SCECO-East has multiple sites and it is a labor-intensive service, applications are most likely to be experienced this gap. This makes the main area of improvement on the part of service delivery. Training and empowering frontline staff to respond to customers is essential.

SCECO-East should also create a favorable Gap 4 by employing effective external communications to create realistic consumer expectations and to enhance consumer perceptions.

Maintaining a close relationship between SCECO-East and its customers would reduce gaps between expectations and delivered service.

Problem Resolution

SCECO-East management should not focus only on complaining customers, but also on dissatisfied customer as 43% of the customers that have a problem with SCECO-East are not satisfied with the solution of the problem.

The non-complainers may be just as dissatisfied as complainers are and perhaps even more so. They may damage the [Inn by communicating their dissatisfaction to other potential customers. About 76% of the customers that have a problem with SCECO-East do not report the complaint officially. SCECO-East should encourage their customers to complain and make it easy for them to do so. It also needs to encourage their employees to respond effectively to customer problems. Service contact employees need specific training about how to deal with customers and how to help customers solve service problems quickly and personally.

Customers' Suggestions

Several changes and recommendations suggested by SCECO- East customers when they were asked to list the changes they would make if they become members of SCECO- East management to improve the level of service quality. The list includes the following suggestions:

1. Improve employees' positions, benefits and salaries.

2. Decrease cost of connection / consumption charges.
3. Let duty working hours of 2 periods: morning and evening.
4. Implement strictly all SCECO-East rules and regulations in all SCECO-East branches.
5. Give accurate appointments.
6. Reduce number of documents required. 7. Increase the number of civil engineers. 8. Improve procedures and use of PC.
9. Improve communication with engineering/consulting offices.
10. Recruit employees specialized in customer services. 11. Ensure accurate KWH meter readings.
12. Give authority to front line staff.
13. Create friendly relationship, cooperation, trust between customers and SCECO-East employees.
14. Implement strict timetable schedule for customer's applications.
15. Implement energy conservation programs.
16. Clearly show the company requirements for power reinforcement and implement equally for all customers.
17. Coordinate with all government agencies regarding rules and regulations.
18. Reduce cost of farm electrification.
19. Implement incentive plans for good employees based on customer feedback.
20. Increase number of field inspectors.
21. Enhance inspection and test of KWH meters.
22. Speed up the process of solving customer problems and complaints.
23. Ignore of silly remarks.
24. Call customer for any deficiency remark on his application and do not wait for his visit.

Recommendations

The results of the empirical study identify a number of research and managerial implications. They are as follows:

1. It is important to manage and control every service encounter to enhance overall perceptions of service quality.
2. Improving service quality is achieved through understanding the customer's expectation forming process.
3. Due to the lack of customer technical quality which contributed to the decrease in service quality, efforts to be made to socialize customers to improve their technical quality aspects.
4. Service quality can be improved for all customers, but there is considerable cost in doing so. The question which all must ask is whether the expenditure incurred attempting to

satisfy the needs of customers outweighs the potential loss stemming from the effect of having dissatisfied customers.

5. Since the desired service is more stable than adequate service and, therefore, less subject to change, SCECO-East should focus on strategies to manage adequate service levels expectations.
6. The posited difference between the stability of desired and adequate service also implies a need for SCECO-East focusing on measurement of adequate service more frequently than desired service.