Chapter 8
Summary of Findings, Conclusions and Recommendations

8.0 Introduction

Based on data analysis in Chapter 7, findings, conclusions and recommendations are drawn in this chapter. For corresponding linking of data, respective numbers of questionnaires are given in findings for ready reference. This chapter also covers researcher’s contribution to the body of knowledge/model developed by researcher; limitations of the study and the scope for further research.

8.1 Major findings of the study:

i. 37. It is found that overall customer satisfaction of MSEDCL’s domestic customers in Pune city (on a rating scale of 1 to 5 where 1 is the lowest and 5 is highest) are: 30 numbers (11.1%) at 1, 80 numbers (29.6%) at 2, majority 97 numbers (35.9%) at 3, 58 numbers (21.5%) at 4 whereas minority 05 numbers (01.9%) at 5.

ii. 42. It is found that overall customer satisfaction of MSEDCL’s industrial customers in Pune city-(Rating on a scale of 1 to 5 where 1 is the lowest and 5 is the highest.) are found as: 03 numbers (10%) at 1, majority (70%) 21 numbers at 2, 05 numbers (16.7%) at 03, 01 minority number (3.3%) at 4 whereas no customer has rated at 5.

iii. It is found that the domestic customers are not price sensitive as they are willing to pay 5% higher power tariff if MSEDCL offers value for money services whereas the majority of industrial customers are not willing to pay 5% higher power tariff if MSEDCL offers value for money services. It is also found that both domestic and industrial customers are not satisfied with the present power tariffs leaving a scope for improvements of 43.1 points for domestic and 47.4 points for industrial customers.

iv. Comparison of customer satisfaction is based on comparative study of importance average values and overall customer satisfaction average values for both domestic and industrial customers.
For domestic customers in Pune city-

It is found that for domestic customers, attributes with most satisfaction are -

- K. To evaluate effect on advertising by MSEDCL on its customers
- C. Complaint handling system
- D. Reliability of supply/service

It is found that for domestic customers, attributes with average satisfaction are-

- H. Power tariff
- F. Accurate and punctual meter reading
- I. Interaction with customers

It is found that for domestic customers, attributes with least satisfaction are-

- J. Measures taken by MSEDCL in detecting and control of power thefts
- G. Accuracy and reliability of billing
- E. Quality of supply/service
- A. Criticality of service
- B. Consumer’s safety

For industrial customers in Pune city-

It is found that for industrial customers, attributes with most satisfaction are -

- I. Interaction with customers
- K. To evaluate effect of advertising by MSEDCL on its customers
- C. Complaint handling system
- F. Accurate and punctual meter reading

It is found that for industrial customers, attributes with average satisfaction are-

- H. Power tariff
- G. Accuracy and reliability of billing

It is found that for industrial customers, attributes with least satisfaction are-

- B. Consumer’s safety
- L. Impact on business performance
- D. Reliability of supply/service
- J. Measures taken by MSEDCL in detecting and control of power thefts
- A. Criticality of service
- E. Quality of supply/service
v. 51. & 56. Customer satisfaction levels study of utility sectors (On a scale of 1 to 5 where 1 is the lowest and 5 is the highest), the following utility sectors are considered:

a) Electric supply MSEDCL,
b) Gas supply,
c) Telecom,
d) Banking and
e) Water supply.

For 51, domestic customers, it is found that electricity-MSEDCL is rated at lowest at 2.9 whereas telecom is rated at highest at 3.3 by customers. The ratings of other utilities such as gas supply, banking and water supply are 3.2, 3.0, and 3.2 respectively. For 56, industrial customers also, it is found that electricity-MSEDCL is rated lowest at 2.2 whereas water supply is rated at highest at 3.7. The other utilities such as gas supply, telecom, and banking are rated at 3.1, 3.3 and 3.1 respectively.

vi. Based on the discussions with MSEDCL officials and secondary data, it is found that MSEDCL has put in efforts by undertaking the following steps in improving operations for both domestic and industrial customers in Pune city.

a) Introduced photo meter reading
b) Started electronic clearing system
c) Opened call centers
d) Introduced communication via the internet
e) Formed squads to detect and control power thefts and
f) Established consumer redressal forums for redressing consumer complaints.

g) Efforts made by MSEDCL in reducing distribution losses

MSEDCL’s efforts to improve operations have not lead to satisfaction for its both domestic customers and industrial customers in Pune city.

vii. In comparison with electricity distribution companies in Mumbai and Pune, least gaps are observed in case of Tata Power for both domestic and industrial customers.
Based on gaps analysis, the following attributes indicate higher scope for improvement for domestic customers in Pune city:

- H. Power tariff
- J. Measures taken by MSEDCL in detecting and control of power thefts
- D. Reliability of power supply/service
- A. Criticality of service

Based on gaps analysis, the following attributes indicate higher scope for improvement for industrial customers in Pune city:

- L. Impact on business performance
- D. Reliability of supply/service
- A. Criticality of service
- J. Measures taken by MSEDCL in detecting and control of power thefts

8. 1.1 Overall attribute wise findings for domestic customers are:

The findings of the scope for improvement based on gaps analysis of overall attribute for domestic customers are:

- A. Criticality of service 32.7 points,
- B. Consumer’s safety 26.5 points,
- C. Complaint handling system 25.5 points,
- D. Reliability of supply/service 36.6 points,
- E. Quality of supply/service 28.5 points,
- F. Accurate and punctual meter reading 23.1 points,
- G. Accuracy and reliability of billing 28.5 points,
- H. Power Tariff 43.1 points and majority of respondents are aware of revision in the power tariff,
- J. Interaction with customers 26.8 points.
- K. Measures taken by utility company in detecting and control of power thefts 39.50 points,
- L. For evaluation of effect of advertising by MSEDCL on its customers, the scope for improvement is 28.3 points. Majority of respondents have noticed in newspaper and magazine but do not recall the advertisement.
ii. Customer satisfaction Index (CSI) - It is found that customer satisfaction index is 58.08 with levels as: level I- core service package 39.35, level II- auxiliary services 12.15, power tariff, level III 3.0 and advertising –level IV 3.58 on weighted average values.

iii. Based on responses from customers the other findings are-

• 38. Majority numbers of respondents are aware of Pune Model.
• 39. There is a mixed opinion on the current supply in Pune compared to that in last two years. Significant portion of customers feel that there is marginal improvement. A small percentage of respondents opined that supply position remained unchanged and some portion of respondents stated that supply position has deteriorated.
• 40. Majority number of respondents feels that MSEDCL should reward people who inform about power thefts.
• 41. There is a mixed response on whether speed money helps in dealing with MSEDCL.
• 42. Majority number of customers thinks that MSEDCL should be privatised.
• 43. Majority respondents attach higher value to energy generated in an environment friendly way.
• 44. Majority number of respondents think that the efforts of power utilities at impacting the environment should be monitored.
• 45. Majority number of customers have not applied for new meter connection. Among those who have applied for new connections majority number of respondents have not encountered some problem in the release of new connection. Thoughts are divided on easiness of application form for new connection. Majority number of respondents thinks that there is no smooth and transparent procedure to get new connection.
• 46. Majority number of respondents are not aware about rights conferred on them by Electricity Act 2003.
• 47. Majority number of respondents are not aware about power sector reforms, restructuring and regulatory imitative.
• 48. Majority number of customers think that efforts of MSEDCL in promoting energy saving devices are not adequate.

• 49. Majority number of respondents think that efforts of MSEDCL in educating consumers on proper usage of electricity and reducing wastage are not adequate.

• 50. Top attributes where respondents have given higher weightage are: criticality of service, consumer’s safety, complaint handling system and reliability of supply.

8.1.2 Overall attribute wise findings of industrial customer are:

i. The findings of the scope for improvement based on gaps analysis of overall attribute for industrial customers are -

A. Criticality of service 53.1 points,

B. Focus on safety 45.3 points.

C. Complaint handling system 35.3 points.

D. Reliability of supply/service 58.0 points,

E. Quality of supply/service 49.4 points,

F. Accurate and punctual meter reading 26.6 points,

G. Accuracy and reliability of billing 37.1 points,

H. Power Tariff 47.4 points.

I. Interaction with customers 12.8 points,

J. Measures taken by MSEDCL in detecting and control of power thefts 50.2 points,

K. To evaluate effect of advertising by MSEDCL on its customers 24.0 points and majority of respondents notice advertisement in newspaper and TV.

L. Impact on business performance 58.0 points.

ii. Customer Satisfaction Index (CSI):

It is found that the customer satisfaction index is 44.5 with levels as: level I- core service package as 33.6, level II- auxiliary services 8.1, level III- power tariff 2.5 and level IV- advertising 0.30 on weighted average values.
Based on responses from customers, the other findings are-

43. Majority of customers are aware of efforts put in by CII and 30 companies (Pune model) to ensure almost zero-load shedding till early 2008 in Pune city.

44. There is a mixed opinion on the current supply situation in Pune as compared to last two years. A small percentage has expressed their opinion as deteriorated supply situation while no respondent has opined that there is a significant improvement.

45. Majority number of customers think that MSEDCL should reward people who inform them about power thefts.

46. Majority number of customers state that while dealing with MSEDCL, “speed money” helps.

47. Majority number of respondents think that MSEDCL should be privatised.

48. All respondents have stated that they would attach higher value to energy generated in environment friendly way.

49. Overwhelming majority number of customers feel that the efforts of power utilities at impacting the environment be monitored.

50. Majority number of customers have not applied for new meter connection. Among those who applied for new connection, majority number of respondents have encountered problems during the release of new connection and feel that there is no smooth and transparent procedure for release of new connection.

51. There is a mixed response on awareness of rights conferred on them by Electricity Act 2003. 56.7% customers are aware about rights conferred on them by Electricity Act 2003, 51.a & 43.3% customers are not aware about right conferred on them by Electricity Act 2003, 51.b.

52. There is a mixed response on their awareness about power sector reforms, restructuring and regulatory initiative. 56.7% customers are aware about power sector reforms, restructuring and regulatory initiative, 52.a &
43.3% customers are not aware about power sector reforms, restructuring and regulatory initiative, 52,b

- 53. All respondents think that efforts of MSEDCL in promoting power saving devices are not adequate enough.
- 54. All customers think that efforts of MSEDCL in educating consumers on proper usage of electricity and reducing wastage are not adequate.
- 55. The respondents have given higher weightage to the following three attributes: a) Criticality of service. b) Impact on business performance. c) Consumer’s safety.

8.1.3 Findings of open-ended questions:

1. Majority number of domestic customers are in favour of MSEDCL offering incentives to their employees who quickly attend customer complaint with the objective of better customer satisfaction and there are mixed responses from industrial customers on this issue.

2. Majority number of domestic customers have expressed different comments when quizzed on present metering system. Some of the comments to be noted are; a) The present photometer reading is not visible and should specify the date of meter reading, b) Meters should be made tamper proof and c) Pre paid meter should be installed. Majority of industrial customers are not in favour of present metering system.

3. Significant number of domestic customers have felt that bi-monthly billing is good and MSEDCL should open more bill collection centers. The opinion of industrial customers is equally divided on present billing system.

4. When suggestions were asked for reducing power thefts, both domestic and industrial customers expressed different comments. Some of the notable comments are: a) MSEDCL area engineers should be responsible for power thefts and to be penalised. b) Reduce corruption and increase controlling system. c) Accountability and strict supervision is required and d) Regulator should be involved in detecting, monitoring and penalising power thieves.

5. Majority number of domestic respondents are willing to pay 5% higher power tariff if MSEDCL supplies electricity which gives value for money. However
majority number of industrial customers are not willing to pay 5% higher power tariff even if MSEDCL supplies power which gives value for money.

8.1.4 Findings of problems faced by MSEDCL engineers:

1. The present MSEDCL procedure causes delay in taking immediate actions to improve customer satisfaction.
2. Majority number of engineers have stated that there is a political pressure and pressure from other government organizations with a particular class of customers while providing a new connection or disconnection of electric supply even when the earlier bills are not paid by some consumers.
3. All engineers are satisfied with measures taken by MSEDCL in detection and control of power thefts.
4. Majority number of engineers face problems due to non-availability of essential materials like fuses, cables, switches etc
5. All engineers are of the opinion that they do not foresee any competition in electricity distribution in future.

8.2 Principal Conclusions:

1. The customer satisfaction levels are low for both domestic and industrial customers of MSEDCL even though MSEDCL’S domestic customers are relatively more satisfied than industrial customers.
2. Comparative study of customer satisfaction levels of utility sector reveals that for both domestic and industrial customers, MSEDCL is the lowest.
3. Tata Power is benchmarked.
4. The customer satisfaction index of industrial customers is low as compared with domestic customers leaving more scope for improvements.
5. Except for interaction with customers and evaluation of effect of advertising by MSEDCL on its customers attributes, there is more scope for improvement in case of industrial customers than domestic customers.
6. The advertisement recall is more in case of domestic than industrial customers. For domestic customers, major media in which advertisements are noticed are: a. news paper and b. magazine. For industrial customers,
the major media in which advertisements are noticed are: a. news paper
and b. T.V.

7. Speed money helps industrial customers more than domestic customers.

8. Application form for new connection is not easy and there is no smooth
and transparent procedure in getting new connection.

9. Efforts of MSEDCL in educating customers on proper usage and power
savings are not adequate.

10. Efforts of MSEDCL in promoting energy saving devices are not adequate.

11. Present billing system needs improvement

12. Present metering system needs improvement.

13. More concentrated efforts are required by MSEDCL in detection and
control of power thefts.

14. MSEDCL engineers are facing problems in meeting customer satisfaction
due to present procedure which causes delay as they have to get
maintenance materials like cables, fuses etc from headquarters.

15. There is a political pressure that causes hindrance to MSEDCL engineers
in meeting customer requirements

8. 3 Major recommendations:

1. It is recommended that MSEDCL should prepare a strategic marketing plan by
setting up performance and quality standards in comparison with the benchmarked
company, that is, Tata Power and come out with proactive strategy before
competition sets in.

2. It is recommended that MSEDCL should develop vision, mission and objectives
statements for framing out right strategies.

3. It is also recommended that MSEDCL should work out SWOT analysis and
monitor and implement the strategic plan at regular intervals.

4. It is recommended that MSEDCL should prepare a marketing orientation plan by
considering all the elements of marketing mix that is, products, price, promotion,
place, people, physical evidence and process.

5. It is recommended that MSEDCL should carry out audit at regular intervals to
review progress.
6. It is recommended that MSEDCL should use the customer focused model developed by the researcher. It is also recommended that MSEDCL should have services marketing approach and should first focus attention to Level I, that is, core services as a package.

7. It is recommended that MSEDCL should ensure that power tariff revisions are not done for at least 3 years period by reducing power losses, proper detection and control of power thefts and entering into long term contracts for power purchase during power shortage.

8. It is recommended that MSEDCL should aggressively promote power saving devices like CFL lamps, LEDs and solar heaters/cookers etc to customers.

9. It is recommended that MSEDCL should educate consumers in proper usage and avoiding wastage of electricity. MSEDCL to take a cue from Tata Power who is inculcating these power saving and proper power usage habits to school children in Mumbai city as these school children are prospective customers of electricity.

10. It is recommended that MSEDCL should arrange training for industrial customers on ‘energy audit ‘and ‘preventive maintenance’ of electrical equipments.

11. It is recommended that MSEDCL should focus attention on industrial customers on top priority as non availability of power has adverse impact on their business performance.

12. It is recommended that MSEDCL should put in efforts to ensure that ‘criticality of service attribute is met for both domestic and industrial customers.

13. It is recommended that MSEDCL should arrange for a ‘customer meet ‘to be addressed by top executives of MSEDCL to interact and to know customers problems. Separate ‘customer meet’ has to be arranged for domestic and industrial customers and get their feedback for carrying out customer focused strategies.

14. It is recommended that MSEDCL should reward people who inform about power thefts.

15. It is recommended that MSEDCL should prepare ‘customer friendly’ easy, application form for new meter connection with smooth and transparent procedure.

16. It is recommended that MSEDCL should reward employees who care for customer satisfaction.
17. It is recommended that MSEDCL engineers should be given free hand and should be removed from clutches of politicians and other government officials.

18. It is recommended that MSEDCL should observe tendency between reliability and complaint handling system in the long run.

8.4 Major suggestion based on Primary data:
It is suggested that MSEDCL should aim at customer delight as it is observed that Tata Power has exceeded customer expectations and delighted them for some attributes.

8.5 Major suggestions based on secondary data:
1. Like Scottish Power, MSEDCL should monitor the total Customer Minutes Lost and Customer Interruptions on a yearly basis to take a remedial action
2. It is suggested that MSEDCL should offer innovative products including a price freeze tariff, along with a choice of green energy products on similar lines as Scottish Power.
3. MSEDCL should improve the feedback given to customer service call center agents by utilising call recording capability for coaching.
4. It is suggested that MSEDCL should carry out improvements in the ways in which they handle disputed accounts.
5. MSEDCL should establish root causes of problems and working out solutions, such as changes in their systems, through 6 sigma, a technique widely used in industry to eliminate defects.
6. It is suggested that MSEDCL should find out analysis tools to identify customers who have complained and had poor service and proactively contact them to put things right.
7. It is suggested that MSEDCL should listen to the customers through a voice of the Customer Research Programme and act on what they tell.
8. It is suggested that MSEDCL should introduce harnessing new call routing technology to contact customers quickly.
9. MSEDCL should enhance Employees' Customer Service Skills through training - including an increased induction period for new service staff.
10. MSEDCL should invest in their prepaid service through new systems and modern new key meters.

11. In Namibia, Northern Electricity Distribution Company carries out customer interaction through a newsletter and radio talks. Northern Electricity in order to curb power loss focuses on three core principles: *eliminate theft, ensure all meters work correctly and implement a trustworthy administrative system*. It is suggested that MSEDCL should follow such customer interaction practices.

12. In Australia, there is raising level of customer satisfaction in Australian electricity and gas sector and they are rated higher relative to banks and telecoms. It is suggested that MSEDCL should study the Australian distribution companies and make efforts to meet similar targets as set by the Australian distribution companies.

13. Vattenfall sets targets in comparison with leading service companies (mainly power, telecom and insurance companies) in Europe and communicates the same to the organisation once a year. The long-term targets for customer satisfaction, as measured by Vattenfall's Customer Satisfaction Index (CSI) should be on top of the leading competitors in each market. Vattenfall is aiming at customer satisfaction levels of leading players in similar industries such as telecom. Vattenfall started a program called "No 1 for the customer" a few years ago. Within the program a number of projects were started to improve the customer service and the customer communication. They started a project which covered the following:
   - Automatic meter reading.
   - Billing. (Improved billing to increase customer satisfaction)
   - Customer reactions. (listen to the customers' reactions on the company's service to be able to improve)
   - Culture and Values.

   It is suggested that MSEDCL to follow similar practice after carrying out a deep study on how Vattenfall achieves these objectives.

14. For an electricity distribution company, it is not the customer service department that is communicating with customers, but both technical and commercial personnel have contacts with the customers to offer services and solve problems for the customers. In order to gain customers trust, Vattenfall has started
communicating to the customers during and after the interruptions in the supply etc. In order to improve customer satisfaction it is also important to the customer to get reliable information, besides an improved communication. The information given to the customer should be honest and accurate to be successful. It is suggested that MSEDCL to follow similar practice to improve customer satisfaction levels.

15. In France Capgemini Energy Company is tied up to a number of service level arrangements. One of these is to achieve 15 second answer times on electric answer calls and to improve customer satisfaction by 30 %. It is suggested that MSEDCL to set up such an efficient answer time on electronic calls.

8.6 Researcher’s contribution to the body of knowledge /Model developed by researcher:

The researcher has designed customer focused business model for improvements in levels of satisfaction of domestic and industrial customers of Electricity Distribution Company and is under copyright diary number 7610/2010 COL dated 02-07-2010.

The details of the model are given below-

Today most electricity distribution companies in various countries including India are struggling with low customer satisfaction levels. Electricity consumers complain of higher power tariff and low service levels. It is hard for any distribution company to convince their customers that they offer value for money. This model gives some guidelines in this area. The diagrammed representation of the Customer Focused Business Model for improvements in levels of Satisfaction of Domestic Customers is as shown in Fig.8.1 –
Fig. 8.1: Customer Focused Business Model for improvements in levels of Satisfaction of Domestic Customers
In electricity market there are six services provided, namely, generation, transmission, distribution, power supply or trading, system support and reliability services to its customers.

Electricity utility company cannot function in isolation but is governed by the Central/State Government, policies and regulations. A political will is required in making investment in new power projects which require huge capital and infrastructure. In this market, the policy, act and regulation is necessary to protect the interest of consumers.

2. There are Independent Power Producers (IPP). In India, Electricity Act, 2003 is formed with the basic objective to promote competition in electricity industry. However, electricity consumers have no option than to get electricity from local electricity distribution company.

3. In the electricity distribution market all services provided to its customers incur costs in terms of power flow. Cash flow through revenue and profit generation is possible to electricity distribution company only when electric power is supplied to consumers; accurate punctual meter readings are taken and are billed reliably and accurately. The consumer behavior plays a major role in such market. It is therefore imperative for the company to influence customers to pay bills on time for earning profits by satisfying them.

4. Electricity distribution companies should carry out customer satisfaction surveys on regular basis. The company should monitor the performance of every attribute and reduce gaps subsequently.

Levels of satisfaction of domestic customers of electricity distribution company-
The following Fig 8.2 gives the levels of satisfaction of electricity distribution company.

**Level 1**
Core services as a package

1. Criticality of services
2. Consumer’s safety.
3. Reliability of supply/service.
4. Quality of supply/service.
5. Accurate and punctual meter Reading.
6. Accuracy and reliability of billing.

**Level 2**
Auxiliary services

1. Interaction with customers
2. Complaint handling system
3. Measures taken in detecting and control of power thefts

**Level 3**
Power tariff

**Level 4**
Evaluation of the effect of advertising by electricity distribution company on its customers

---

**Fig. 8.2: Levels of satisfaction of electricity distribution company.**

For industrial customers, apart from the above attributes, one more additional attribute, that is, impact on business performance needs to be considered. This attribute is of prime importance and life line from industrial customer’s perspective. This attribute therefore has to be considered in Level I as core services package.
8.7 Scope for further research:

1. Areawise customer satisfaction levels for domestic customers can be found out for domestic customers in Pune city.
2. Customer satisfaction levels for different types of industry can be found out for industrial customers in Pune city.
3. Research can be carried out to determine customer satisfaction levels of commercial and rural customers as well.
4. Reliability Index can be found.
5. Based on customer satisfaction surveys research can be carried out at other areas of MSEDCL and other distribution companies as well.