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SERVICE QUALITY AND CONSUMER EMPOWERMENT OF ELECTRIC DISTRIBUTION UTILITIES IN BOHOL

Sheryl B. Paga
Manager of Customer Care, Bohol Light Company, Inc. (BLCI).
Board of Director of Employees of Light and Water Multi-Purpose Cooperative (ELAW-MPC).

ABSTRACT
Service quality and consumer empowerment among electric distribution utilities (EDUs) are essential to effective service delivery amid ongoing technological advancements. Examining the differences in and relationship between these variables may help identify areas for performance improvement. Using a quantitative correlational research design, the study involved 384 randomly selected consumers from EDU A (192), EDU B (165), and EDU C (27), representing consumers from 47 municipalities and one city in Bohol. Data were collected using a modified questionnaire and analyzed using weighted and composite means. The Kruskal–Wallis H test and post hoc tests were used to determine differences among the three EDUs, while Spearman's rank-order correlation was used to examine the relationship between service quality and consumer empowerment. The results revealed statistically significant differences in service quality and consumer empowerment among the three EDUs. A strong positive relationship was also found between the two variables, indicating that more favorable perceptions of service quality were associated with higher levels of consumer empowerment. The study recommends establishing a systematic, cross-departmental ticketing system to monitor consumer concerns and reduce backlogs, strengthening employee development through relevant training programs, and conducting continuous information, education, and communication campaigns to improve consumer awareness and engagement.
KEYWORDS: *Service Quality, Consumer Empowerment, Electric Distribution Utilities, Bohol*

INTRODUCTION

Electric distribution utilities (EDUs) faced increasing consumer complaints and growing demands for improved service quality and consumer empowerment[1]. EDUs in Bohol were no exception, as they were expected to provide reliable electricity services and respond to consumer needs. Service quality, particularly in terms of reliability, responsiveness, and tangibility, influenced consumers' experiences with their respective utilities. Consumer empowerment, measured in terms of knowledge and skills, attitude and confidence, and behavior and experiences, enabled consumers to understand their rights and responsibilities and participate in electricity-related transactions. Assessing these variables provided a basis for identifying areas where EDUs could improve their services to the communities they served.

This study used the SERVQUAL model to assess consumers' perceptions of service quality and identify potential gaps in service delivery processes, operating procedures, employee interactions, and responsiveness to consumer concerns. It examined service quality in terms of reliability, responsiveness, and tangibility and its relationship with consumer empowerment in terms of knowledge and skills, attitude and confidence, and behavior and experiences. The findings served as the basis for developing a research-based action plan to address identified service delivery gaps and areas for improvement based on consumers' assessments.

OBJECTIVES OF THE STUDY

This study aimed to assess the levels of service quality and consumer empowerment among electric distribution utilities (EDUs) in Bohol, as perceived by consumers, and to develop a research-based action plan to improve service delivery. Specifically, it sought to determine the following:

1. The participants' demographic profiles in terms of age, gender, civil status, educational attainment, occupation, EDU provider, and type of consumer and its contribution to the study.
2. Level of service quality in terms of reliability, responsiveness, and tangibility;
3. Level of consumer empowerment in terms of knowledge and skills, attitude and confidence, and behavior and experiences;
4. Whether significant differences existed in service quality and consumer empowerment among the three EDUs in Bohol; and
5. Examine the relationship between service quality and consumer empowerment among the three EDUs in Bohol.

[1] *Ong et al., determining factors affecting customer satisfaction of the national electric power company in the Philippines. Utilities Policy, 80, Article 101454. https://doi.org/10.1016/j.jup.2022.10145*

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The findings served as the basis for developing a research-based action plan to address identified service delivery gaps and improve consumer engagement.

RESEARCH METHODOLOGY

Research Design

The study used a quantitative correlational research design to assess the levels of service quality and consumer empowerment among electric distribution utilities (EDUs) in Bohol. It also examined differences in these variables among the three EDUs and determined the relationship between service quality and consumer empowerment. The descriptive component was used to summarize participants' demographic profiles and assess the levels of service quality and consumer empowerment, while the correlational component examined the association between the two variables.

Research Participants and Sampling

The study involved 384 consumers from 47 municipalities and one city in Bohol who had experienced the services provided by their respective EDUs. The participants included 192 consumers (50%) from EDU A, 165 (43%) from EDU B, and 27 (7%) from EDU C. The study used simple random sampling to select participants. The sample included residential, commercial, and government consumers.

Research Instrument

Data were collected using a modified questionnaire designed to assess service quality and consumer empowerment based on consumers' perceptions. The questionnaire used a Likert scale to measure participants' assessments of the two variables and was supplemented by observations based on their experiences, opinions, and insights. It was originally written in English and translated into the local vernacular to facilitate participants' understanding of the questions. The questionnaire consisted of three parts: (1) the participants' demographic profiles; (2) the level of service quality in terms of reliability, responsiveness, and tangibility; and (3) the level of consumer empowerment in terms of knowledge and skills, attitude and confidence, and behavior and experiences. To establish the instrument's validity, three experts evaluated the questionnaire for content validity. Pilot testing was also conducted to assess the clarity, comprehensibility, and appropriateness of the questionnaire items before the actual data collection.

Data Collection Procedure

The researcher obtained approval from the General Managers or Chief Operating Officers of the three electric distribution utilities (EDUs) in Bohol to conduct the survey among selected consumers. Before the actual data collection, the research instrument underwent pilot testing and evaluation by three experts to establish its reliability and content validity. After securing the necessary approvals, the researcher obtained informed consent from the selected participants before distributing the questionnaires and providing guidance on completing them. The accomplished questionnaires were collected, tabulated, and analyzed using appropriate statistical tools. The findings served as the basis for the study's conclusions, recommendations, and proposed action plan. Throughout the process, participants' information was treated confidentially and used solely for academic purposes

Statistical Analysis

Descriptive statistics, including frequency counts and percentages, were used to summarize participants' demographic profiles. Weighted means and composite means were used to determine the levels of service quality and consumer empowerment. The Kruskal–Wallis H test was employed to examine differences in service quality and consumer empowerment among the three EDUs. Post hoc tests were conducted to identify which groups differed significantly when the overall test indicated a significant difference. Spearman's rank-order correlation was used to examine the relationship between service quality and consumer empowerment. Statistical significance was evaluated at the 0.05 level.

Geographical area

The study was conducted in the Province of Bohol, Philippines, covering consumers served by three electric distribution utilities (EDUs). The study covered 47 municipalities and one city in Bohol, where the selected participants had experienced the services provided by their respective electric distribution utilities.

RESULTS

The demographic profile of 384 participants where 67% were female, and the largest age group was 31–40 years. Most participants were married, college graduates, private employees, and residential consumers. In terms of EDU representation, 192 participants (50%) were from EDU A, 165 (43%) were from EDU B, and 27 (7%) were from EDU C. Comparing the two variables, consumer empowerment had a slightly lower p-value than service quality, indicating a stronger statistical evidence of differences among

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the three EDUs. Both variables showed statistically significant differences. However, the small difference did not establish that consumer empowerment varied more substantially than service quality.

Service quality differed significantly among the three EDUs in terms of reliability, responsiveness, and tangibility. Participants generally agreed that the EDUs delivered reliable services. The readiness of linemen to respond to emergencies and power disruptions received the highest rating under responsiveness, while convenient payment channels received a high rating under tangibility. These findings highlighted the importance of dependable service delivery, prompt responses to power interruptions, and accessible payment options. In the level of consumer empowerment**,** participants were assessed as empowered in terms of knowledge and skills, attitude and confidence, and behavior and experiences. They reported understanding available service information, exercising their rights and responsibilities, using payment options, and communicating concerns to their respective EDUs. They also expressed confidence in raising concerns and willingness to share their service experiences. These findings emphasized the importance of maintaining professional, courteous, and responsive communication to support consumer engagement.

The results indicated statistically significant differences in both service quality and consumer empowerment among the three EDUs. Furthermore, the analysis revealed a strong positive relationship between service quality and consumer empowerment. This suggested that more favorable perceptions of service quality were associated with higher levels of perceived consumer empowerment. However, the relationship did not establish a causal effect between the variables.

SUGGESTIONS OR RECOMMENDATIONS

Based on the results, the following recommendations were proposed to improve service quality and strengthen consumer empowerment among the three electric distribution utilities (EDUs) in Bohol:

a. **Improve service request monitoring.** EDU A and EDU B may establish a centralized monitoring or ticketing system to track consumer requests, complaints, and pending applications, improve interdepartmental coordination, and minimize backlogs.
b. **Strengthen consumer communication.** EDU C may enhance its information, education, and communication (IEC) programs and establish clear communication protocols to improve consumer engagement and minimize delays and miscommunication.
c. **Enhance consumer education.** All three EDUs may provide accessible tutorials on electricity bills, rate components, meter readings, and related charges through social media, websites, billing inserts, videos, radio programs, and barangay activities. Visual materials and local-language explanations may help improve consumers' understanding and confidence.
d. **Improve service delivery and consumer engagement.** The EDUs may strengthen emergency response through adequate staffing, equipment, training, and coordinated procedures; promote accessible payment channels; regularly collect and evaluate consumer feedback; and provide employee training in communication, complaint handling, active listening, and professionalism.
e. **Encourage further research.** Future researchers may conduct follow-up studies to assess changes in service quality and consumer empowerment over time and examine how technological developments and changing consumer needs affect electricity service delivery.

CONCLUSION

The service quality among the Electric Distribution Utilities (EDUs) in Bohol extends beyond the provision of electricity to include consumers' access to services, understanding of service processes, and opportunities to engage with their respective utilities. Given the positive relationship between service quality and consumer empowerment, EDUs should continuously improve their operational processes, particularly on the interdepartmental coordination and the clarity of electricity billing information. Strengthening the implementation of consumer education, regular communication campaign, and engagement initiatives may further enhance consumers' knowledge, confidence, participation and good experiences. These improvements can contribute to more reliable, responsive, transparent, and consumer-centered electricity provider in the communities they serve.

Figures, Tables and references

Figure 1. Number of participants per EDU

EDU	POPULATION	(%)	Participants per EDU	CONSUMER TYPE		
				Residential	Commercial	Gov't Building
EDU A	180,000	50%	192	109	62	21
EDU B	156,000	43%	165	155	6	4
EDU C	24,100	7%	27	22	4	2
TOTAL	360,100	100%	384	286	72	27

The participants were the consumers from the three electric distribution utility providers in the province of Bohol. The Cochran's formula was used to determine the sample population of the study to get the data needed. There were 384 total number of

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participants, selected using the simple random sampling, comprising of 192 from EDU A, 165 from EDU B, and 27 from EDU C. The number of participants was equally distributed among EDU's service area using the percentage formula.

Figure 2. Differences in Service Quality and Consumer Empowerment Across Electric Distribution Utilities in Bohol

Variable	χ^2	Df	p	Interpretation	Decision
Service quality	6.08	2	0.048	Significant	H_0 Rejected
Consumer empowerment	6.09	2	0.047	Significant	H_0 Rejected

The finding shows that consumers' opportunities and capacities to obtain relevant information, understand their rights and responsibilities, communicate concerns, and make informed decisions regarding electricity services may vary according to the utility provider (Energy, Research & Social Science, 2023)[2].

Figure 3. Relationship Between Service Quality and Consumer Empowerment Among Electric Distribution Utilities in Bohol

Variables	Computed R-value	Interpretation	p	Interpretation
Level Service Quality	0.883	Strong Relationship	0.048	Significant; H_0: Rejected
Level of Consumer Empowerment	0.883	Strong Relationship	0.048	Significant; H_0: Rejected

There was strong positive relationship between Service Quality and Consumer Empowerment among consumers of the Electric Distribution Utilities in Bohol. The relationship was statistically significant at the 0.05 level of significance, indicating that higher assessments of Service Quality were associated with higher levels of Consumer Empowerment resulting in the rejection of null hypothesis. It shows that service quality experienced by consumers is closely associated with their capacity to become informed, communicate concerns, exercise confidence, and engage with their respective EDUs.

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