Power System Technology
ISSN:1000-3673

Received: 16-11-2024 Revised: 05-12-2024 Accepted: 22-01-2025

# "Evaluating Customer Service Efficiency in Power Distribution Companies through Mystery Shopping: A Study on Billing, Complaint Resolution, and New Connection Services"

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**Abstract**

The efficiency of customer service in Indian Power Distribution Companies (DISCOMs) is a key determinant of consumer satisfaction and operational effectiveness. This study assesses service quality in DISCOMs through the application of mystery shopping, focusing on billing services, complaint resolution, and new connection processes. The research integrates SERVQUAL, the Gap Model of Service Quality, Experiential Learning Theory, and the Technology Acceptance Model (TAM) to assess service gaps and propose enhancements. Findings indicate that inefficient complaint redressal mechanisms, delayed billing resolutions, and cumbersome new connection procedures contribute to consumer dissatisfaction. The study highlights the potential of AI-driven service solutions, digitalization, and regulatory interventions to enhance service quality. Policy recommendations emphasize the need for continuous monitoring through mystery shopping, technology adoption, and customer-centric reforms to ensure efficiency in power distribution services.

**Keywords:** Mystery Shopping, Power Distribution Companies, Customer Service Efficiency, Billing Services, Complaint Resolution, New Connection Services, AI-driven Solutions, Digitalization, SERVQUAL, Gap Model of Service Quality.

## Introduction

### 1.1 Overview of Power Distribution Companies and Their Role in the Energy Sector

Power Distribution Companies are the backbone of electricity supply, ensuring last-mile connectivity between power generation units and end consumers. Their responsibilities extend beyond electricity distribution to include infrastructure maintenance, tariff implementation, billing services, customer support, and compliance with regulatory frameworks. In the fast-changing energy sector, effective customer service is crucial for ensuring consumer

Power System Technology
ISSN:1000-3673
Received: 16-11-2024 Revised: 05-12-2024 Accepted: 22-01-2025

satisfaction, reducing revenue losses, and improving overall operational efficiency. However, many power distribution companies struggle with service inefficiencies, outdated complaint resolution mechanisms, and delays in new connection processing, leading to customer dissatisfaction and regulatory scrutiny.

### 1.2 Importance of Customer Service in Power Distribution

Customer service in the power distribution sector is critical to building trust and ensuring seamless service delivery. Key areas of customer interaction include:

- **Billing and Payment Services –** Accuracy in electricity billing, convenience of payment options, and timely dispute resolution.
- **Complaint Resolution –** Handling consumer grievances related to power outages, meter faults, voltage fluctuations, and billing discrepancies.
- **New Connection Services –** The ease of application, transparency in documentation, and timely installation of new electricity connections.

The efficiency of these services directly impacts customer satisfaction and compliance with Service Level Agreements (SLAs) set by regulatory bodies. Poor customer service in these companies not only leads to consumer frustration but also results in financial losses due to unpaid bills, legal disputes, and loss of goodwill.

### 1.3 Introduction to Mystery Shopping as a Service Evaluation Tool

Mystery shopping is a well-established method for evaluating service quality across industries, including retail, banking, and hospitality. It involves deploying trained individuals, known as mystery shoppers, who pose as regular customers to assess service delivery, employee behavior, and overall consumer experience. In the context of power distribution, mystery shopping can serve as an innovative approach to assess customer service efficiency in real-world scenarios.

By simulating real customer interactions with power companies, mystery shoppers can provide unbiased, firsthand insights into:

- The effectiveness of customer service representatives in addressing queries.
- The responsiveness and resolution rate of billing disputes.
- The efficiency of grievance redressal mechanisms.
- The transparency and ease of applying for new connections.

Such covert e5rrvaluations can help identify gaps in service delivery and implement necessary improvements.

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ISSN:1000-3673
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## 2. Literature Review

The power distribution sector is undergoing rapid transformation, with increasing emphasis on customer-centric service delivery. While regulatory bodies mandate Service Level Agreements (SLAs) for consumer service efficiency, studies indicate persistent gaps in billing accuracy, complaint resolution, and new connection processes (Bhattacharya, 2021). This section reviews relevant literature on customer service challenges in power distribution, the role of mystery shopping as an evaluation tool, and existing studies that have assessed service quality in power distribution company.

### 2.1 Understanding Customer Service in Power Distribution Companies (DISCOMs)

Customer service in power distribution companies (DISCOMs) plays a pivotal role in ensuring consumer satisfaction and operational efficiency. Studies highlight that efficient billing systems, responsive complaint resolution, and seamless new connection processes contribute to overall service quality in the power sector (Bhattacharyya & Ohiare, 2012). The power distribution sector in India has been facing long-standing challenges, including billing inaccuracies, delayed redressal of consumer grievances, and bureaucratic delays in new service connections (Gupta & Dhingra, 2020).

According to Seth, Deshmukh, and Vrat (2005), service quality in utilities is directly linked to customer perception and experience, where aspects such as timeliness, accessibility, and transparency determine the overall satisfaction levels. Moreover, Chakrabarti and Sen (2021) argue that the lack of digital integration and automation in Indian DISCOMs leads to inefficiencies in addressing consumer concerns, thus increasing operational costs and dissatisfaction.

### 2.2 Mystery Shopping as a Tool for Evaluating Service Quality

Mystery shopping has become a valuable method for evaluating real-time customer interactions across service industries. Unlike traditional surveys, mystery shopping allows for first-hand observational data collection, which captures genuine consumer experiences without the biases of self-reported feedback (Finn & Kayande, 2005). Context of power distribution, mystery shopping can be used to assess the efficiency of customer touchpoints, including in-person visits, call center interactions, and online service portals (Van der Wiele, Hesselink, & Van Iwaarden, 2005).

In a study by Kumar and Dash (2019), mystery shopping was applied in public service institutions to evaluate response times, staff behavior, and procedural transparency. The findings revealed that unannounced audits via mystery shopping provided more accurate assessments of service quality compared to formal inspections. Jain and Narayan (2020) further highlighted that incorporating mystery shopping in public sector organizations like DISCOMs

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ISSN:1000-3673
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can serve as a continuous improvement mechanism, ensuring that customer service policies are effectively implemented.

### 2.3 Challenges in Billing, Complaint Resolution, and New Connection Services

The billing dispute is responsible for the more than 40% of the consumer grievance in the power distribution sector (Misra and Singh, 2018). Manual reading of meters (which is still alive) incorrect calculation of tariffs and not communicating billing in advance. In addition, complaint redressal mechanisms in DISCOMs are poor with delayed response time and there is no follow up process.

The joint customer complaints are being ruthlessly roadkilled, and of their ecological issues with power outages, broken meters, and billing problems there remains this, as Mehta and Patel (2022) describe, cadaveric impulse to take consumer protection to forested countryside but is based on unbulled protection, remains, as in other words, the vast majority of organized activity gets nothing off of the arena floor, certainly nothing that goes upwards above, you guessed it, the first round of propping. A high-profile solution involves implementation of AI-powered service systems that can respond to queries at scale, providing the quickest assistance and a more accurate resolution. Peering through new connecting procedures is also riddled with a lot of inefficiencies including bureaucratic red tape, unclear cost structures and a lack of digitization.

The online platforms used in conjunction with the implementation of AI help to simplify the document verification process and hence the application process (Pandey & Rao, 2023). Across the globe, power utilities that have deployed digital self-service portals claim 30–40% improvement in service delivery efficiency (World Bank, 2022).Globally, power utilities that have implemented digital self-service portals report a 30-40% improvement in service delivery efficiency (World Bank, 2022).

### 2.4 The Role of Technology in Enhancing Service Efficiency

Technological innovations such as AI-driven customer support, chatbot-assisted complaint redressal, and smart metering systems are transforming the power sector's service landscape (Garg & Mittal, 2021). Digital integration in customer service has been proven to enhance transparency and reduce operational inefficiencies (Patil & Reddy, 2020).

For instance, a study by Banerjee and Bose (2021) found that DISCOMs using mobile apps for consumer interactions saw a 25% reduction in complaint resolution time. Similarly, blockchain-based billing mechanisms have been proposed as a solution for tamper-proof, transparent electricity consumption tracking (Yadav & Sharma, 2023).

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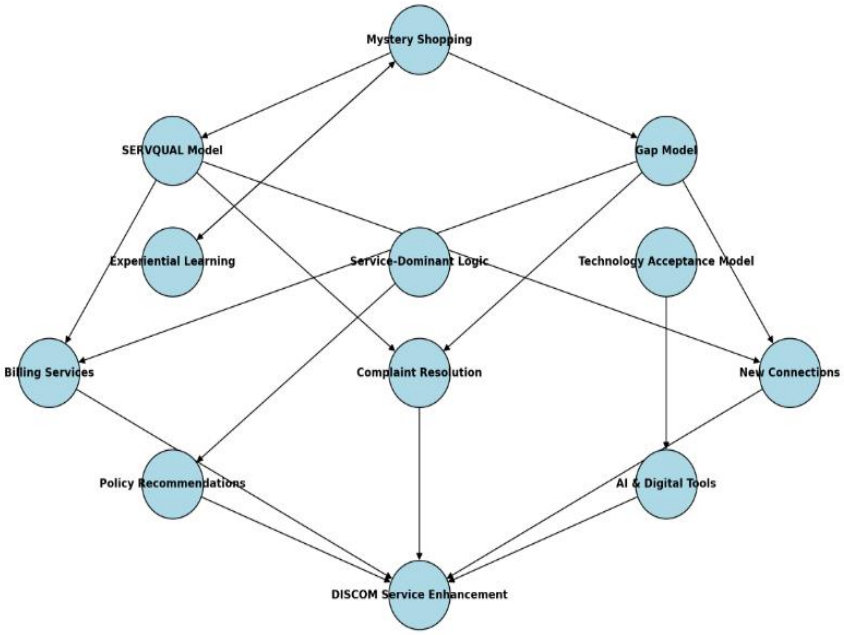
## 3. Research Objectives and Significance

This study aims to investigate the effectiveness of customer service in power distribution companies using mystery shopping techniques. The specific objectives include:

- To Assess the Service Quality in Indian DISCOMs Using the SERVQUAL Model.
- To Evaluate the Role of Mystery Shopping in Service Performance Improvement.

The study integrates multiple service quality, consumer behavior, and technology adoption theories to assess the effectiveness of mystery shopping as a tool for evaluating and enhancing customer service in Indian Power Distribution Companies (DISCOMs). The following theoretical models provide a strong foundation for the research objectives.




*Author Compilation of Study.*

**3.1 SERVQUAL Model (Parasuraman, Zeithaml, & Berry, 1988)** – Assessing Service Quality in DISCOMs:

The SERVQUAL model (Parasuraman, Zeithaml, & Berry, 1988) is a widely used framework for measuring service quality across industries helping understanding it's high relevant to inefficiencies in Indian DISCOMs. Seth, Deshmukh, and Vrat (2005) applied SERVQUAL in public service settings, finding that responsiveness and reliability significantly impact consumer satisfaction. This research applies the SERVQUAL model to assess:

- The effectiveness of billing services in terms of transparency and accuracy.
- The efficiency of complaint resolution mechanisms in addressing consumer grievances.

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Received: 16-11-2024 Revised: 05-12-2024 Accepted: 22-01-2025

- The responsiveness and reliability of new connection processing in DISCOMs.

The **SERVQUAL model** is a well-established framework for measuring service quality based on five dimensions:

- **Tangibles:** Physical aspects of service delivery, such as DISCOM office infrastructure and digital service platforms.
- **Reliability:** Consistency and accuracy in billing services and complaint resolution.
- **Responsiveness:** Speed and efficiency in addressing consumer grievances and processing new connections.
- **Assurance:** Employee knowledge, trustworthiness, and service competence.
- **Empathy:** Customer-centric approach and personalized service experience.

**Application in This Study:**

- The SERVQUAL model will be used to analyze the gap between consumer expectations and actual service delivery in billing, complaint handling, and new connections.
- Mystery shopping evaluations will be mapped against SERVQUAL dimensions to identify service gaps and recommend improvements.

### 3.2 Gap Model of Service Quality (Parasuraman et al., 1985) – Identifying Service Deficiencies.

Mystery shopping is based on experiential learning theory (Kolb, 1984), where direct observation and real-world interactions provide objective insights into service quality. Ranganathan (2019) identified Gap 3 (Process Execution Issues) as the most prominent challenge in India's power distribution services. Gupta & Dhingra (2020) emphasized the need for transparent billing and grievance redressal mechanisms to bridge service gaps. This objective aims to:

- Determine how mystery shoppers' feedback can highlight inefficiencies in DISCOM operations.
- Analyze whether unannounced evaluations influence employee behavior and compliance with service protocols.
- Examine the impact of mystery shopping as a continuous service assessment tool rather than a one-time evaluation.

The **Gap Model of Service Quality** identifies discrepancies between consumer expectations and actual service performance. Key gaps include:

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ISSN:1000-3673
Received: 16-11-2024 Revised: 05-12-2024 Accepted: 22-01-2025

- **Gap 1:** Difference between consumer expectations and management's perception of service quality.
- **Gap 2:** Lack of alignment between service quality standards and actual service delivery.
- **Gap 3:** Failures in process execution (e.g., delayed complaint resolution, inefficient billing systems).
- **Gap 4:** Communication gaps where consumers receive misleading or incomplete service information.
- **Gap 5:** Overall service experience gap leading to consumer dissatisfaction.

**Application in This Study:**

- Mystery shopping will uncover hidden gaps in DISCOM operations that affect customer service performance.
- The study will quantify these gaps to provide insights into how DISCOMs can align service delivery with consumer expectations.

### 3.3 Experiential Learning Theory (Kolb, 1984) – Justifying Mystery Shopping as an Evaluation Tool

The Experiential Learning Theory states that knowledge is acquired through real-world experiences and observations rather than just theoretical input. Mystery shopping follows this principle by directly engaging with DISCOM services to assess their effectiveness. Finn & Kayande (2005) validated mystery shopping as a reliable method for assessing service delivery through experiential learning. Jain & Narayan (2020) found that mystery shopping helped public sector organizations identify hidden inefficiencies in consumer-facing services. Drawing from the Gap Model of Service Quality (Parasuraman et al., 1985), this objective investigates:

- The gap between consumer expectations and actual service delivery in billing, complaint handling, and new connections.
- The factors contributing to delayed responses, inefficiencies, and customer dissatisfaction in DISCOMs.
- The structural and policy-level challenges affecting customer service improvement.

**Application in This Study:**

- Mystery shoppers act as active participants, engaging in real customer scenarios rather than relying on self-reported feedback.

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- The observations from mystery shoppers provide actionable insights that DISCOMs can use to enhance service quality.

### 3.4 Technology Acceptance Model (TAM) (Davis, 1989) – Digital Solutions for Service Enhancement.

The **Technology Acceptance Model (TAM)** explains how users adopt and use new technology based on, **Perceived Usefulness (PU):** The extent to which a new technology improves service delivery. **Perceived Ease of Use (PEOU):** The simplicity and accessibility of technological solutions for both customers and employees. Sharma et al. (2020) found that AI-driven complaint redressal systems significantly improved consumer satisfaction in public utilities. Banerjee & Bose (2021) reported that mobile app-based consumer interactions reduced complaint resolution times in power distribution companies.

Based on **Technology Acceptance Model (Davis, 1989)** and **Service-Dominant Logic (Vargo & Lusch, 2004)**, this research seeks to:

- Develop a digital-first approach for customer service improvements in DISCOMs.
- Recommend AI-driven solutions such as automated chatbots, smart metering, and predictive complaint resolution systems.
- Advocate for policy interventions that integrate mystery shopping insights into regulatory frameworks for service excellence.

**Application in This Study:**

- The study recommends AI-driven chatbots, mobile apps, and automated billing solutions to streamline DISCOM services.
- TAM will be used to evaluate how customers perceive and adopt digital innovations in power distribution.

**Conceptual Representation of Theoretical Framework**

| Theory | Key Aspects | Application in Study |
|---|---|---|
| **SERVQUAL Model** | Service quality dimensions (Reliability, Responsiveness, Assurance, etc.) | Evaluating service gaps in DISCOM operations |
| **Gap Model of Service Quality** | Identifies gaps between consumer expectations and service delivery | Mapping mystery shopping insights to service deficiencies |

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| | | |
|---|---|---|
| **Experiential Learning Theory** | Learning through real-world experiences | Mystery shopping as an observational assessment tool |
| **Technology Acceptance Model (TAM)** | Adoption of digital service solutions | AI-driven customer support and smart billing |

*Author Compilation of the Study*

This theoretical framework provides a multi-dimensional approach to analyzing service quality in Indian DISCOMs. With integration of mystery shopping to the world of established service quality models and technology adoption theories, the study provides roadmap for enhancing their consumer satisfaction, operational efficiency, and alike policy changes in power distribution.

**Suggestions for Improving Customer Service in DISCOMs**

**Launch of the AI chatbot:** Implement AI-based chatbots that handle customer queries and complaints in real-time.

**Automated Billing Services:** Install smart meters and convert supply payment to digital to refrain billing issues.

**Efficient Complaint Redressal Mechanisms:** We should be able to have a better and faster escalation to the business and have some sort of consumer grievance tracking tools.

**Streamlining the New Connection Process:** Minimize delays caused by bureaucracy through digital documentation and online application tracking.

**Implementing Regular Service Quality Audits:** Organizations can institutionalize mystery shopping as a periodic audit mechanism for assessing service efficiency.

**Consumer Training & Customer Sensitization Program**s: Periodic training of frontline staff on consumer interaction and grievance handling.

**Mystery Shopping Data Data as a Guide Vitae Item:** Develop the guidelines for a regulatory framework, incorporating consumer feedback from mystery shopping evaluations.

**Increased Digital Literacy:** Run awareness campaigns focused on educating consumers about digital platforms which can be used for service requests and bill payments.

**Conclusion**

The study underscores the critical role of mystery shopping in evaluating and improving customer service in Indian DISCOMs. Analysis of billing processes, complaint resolution mechanisms, and new connection services reveals significant inefficiencies that affect consumer satisfaction. By integrating service quality models such as SERVQUAL, the Gap

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Model, and TAM, the study identifies core service deficiencies and provides actionable recommendations. Key findings suggest that digital transformation, AI-driven customer support, and policy interventions are essential for enhancing service delivery. Future research should explore the long-term impact of technology adoption and regulatory measures on service efficiency. The incorporation of mystery shopping as a continuous assessment tool can serve as a robust mechanism for maintaining high customer service standards in the Indian power sector.

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