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Studying Electricity Theft in Peshawar: An Analysis of Patterns, Causes, and Preventive Measures

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Abstract

Electricity has become a basic need for humans. Electricity theft is a major concern of the developing and underdeveloped nations. This study aims to study the patterns, causes & the preventive measures of electricity theft in Peshawar. Through convenience sampling, primary data was collected, using interview schedule, from the concerned officials of PESCO at 5 offices. The research was quantitative having sample size 50. Research findings reveal that the methods used for electricity theft include: meter tampering; shunt in meter; tilting the meter; cutting and connecting the neutral line to an outer conductor; Kunda or Hook System; shunt in the PVC cable; and connecting the neutral line to an outer conductor. Findings also indicates that the causes of electricity theft include rising expenses & high electricity tariffs. This study suggests these measures for the prevention of electricity theft: decreasing electricity's cost & taxes; increasing the duration for surveillance & the role of police; shifting of meters to poles; increasing the staff; reducing billing irregularities & corrupt practices; replacing sluggish & old meters; installing AMR-Automatic Meter Reading meters; eliminating bill's fuel price adjustment prices, staff's corrupt practices, protection of electricity stealers by the powerful elite and politicians.

Keywords: Electricity Theft, Energy Losses, Power Sector, Patterns of Electricity Theft, Causes of Electricity Theft, Prevention of Electricity Theft.



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Introduction

Electricity theft is a concerning issue of the developing world, where a considerable amount of electricity is stolen every year. As a result, the financial state of the utility companies worsens and investments for the improvement of electricity industry reduces, which results in shortage of electricity. The electric supply companies may ask government for subsidies for the financial backup and continuous power supply if these companies belong to public sector (Jamil & Ahmad, 2014).

Electricity theft has many parameters to be examined for carrying out steps for detection and control of this complicated practice. Problems related to society, economy, regions, management, politics, infrastructure, education, crimes, lobbies, corrupt practices and electricity standard are some of these parameters. Irregularities in billing are another form of non-technical losses in many developing countries. The reasons for billing irregularities are corrupt practices and lack of will in power sector employees to control the illegal consumption of electricity (Depuru *et al.*, 2011). The users do not get cent percent of the electricity produced by the companies. A considerable amount of power is lost in the form of technical losses and non-technical losses by the distribution system. The difference between the quantity of power received by the users in the form of charged bills and the quantity of power given to the system is called “Distribution Losses”.

The energy lost in the transmission, inner power resistance of transformers and similar physical phenomenon constitutes Technical losses. While the energy lost due to the consumer usage, external factors and other sources not monitored and accounted by the distribution system are termed as Non-Technical losses. The calculation of Non-Technical losses is not easy as these losses are usually not calculated by the distribution companies. Non-Technical losses are the result of power theft, shunted and tampered meters and illegal supplies. Electricity theft is the main reason of Non-Technical losses which is that electricity that is used by the consumer without been recorded by meter (Navani *et al.*, 2003).

Pakistan experiences widespread electricity theft due to weak infrastructure, inefficient policies, unskilled employees, corruption, political influence, and poor law enforcement. Despite abundant resources for power generation, lack of planning for production and theft control results in billions of rupees in annual economic losses. In the year 2015, global electricity theft losses were \$89.3 billion, with the share of Pakistan at \$0.89 billion. Most theft occurs as Non-Technical Losses (NTL), including unregistered connections, meter tampering, direct theft, and billing errors, while Technical Losses (TL) occur naturally due to inefficiencies in transmission, poor infrastructure, and equipment wear. Power theft overloads grid stations, disrupts power supply, and raises tariffs. To address power theft, the government has taken measures. During the initial months of financial year 2014-2015, 18.6% line losses occurred. According to National Electric and Power Regulatory Authority the justified average limit of line losses is 13.5%, above which would be considered electricity theft.

Line losses are much more in the different power distribution companies' than the justified average limit set by NEPRA. Line losses in different companies are such as SEPCO (Sukkur Electric Power Company) has 39.4% line losses, PESCO (Pakistan Electric Supply Company) 37.4%, HESCO (Hyderabad Electric Supply Company) 27.6%, QESCO (Quetta Electric Supply Company) 21.7%, MEPCO (Multan Electric Power Company) 19.3%, LESCO (Lahore Electric Supply Company) 14%, GEPCO (Gujranwala Electric Power company) 11.1%, FESCO (Faisalabad Electric Supply Company) 10.8% and IESCO (Islamabad Electric Supply company) has 6.1% line losses respectively (Hussain *et al.*, 2016).

Literature Review

Electricity theft refers to all illegal methods used to consume electricity without proper payment, including meter tampering, interference, bypassing meters, or manipulating them to under-record usage. Although practices such as non-payment of bills, unauthorized reconnection, and other corrupt activities are often excluded from this definition, they also effectively constitute forms of electricity theft. (Dick, 1995). Electricity theft also occurs through illegal direct connections to distribution lines and nonpayment of bills, often enabled by weak monitoring and enforcement. These nontechnical losses—such as theft, fraud, and unpaid bills—raise costs because nonpaying consumers obtain electricity at little or no cost. As a result, their consumption is indirectly paid for by utilities, paying customers, or society through subsidies and taxes. These losses are ultimately recovered by increasing tariffs for paying customers, reducing utility profits, or shifting the financial burden to society as a whole. (Amin *et al.*, 2015).

Patterns of Electricity Theft

In Pakistan, electricity theft occurs through both direct and indirect methods. Common practices include illegal direct connections from low-tension lines or meter cables to bypass recording, use of hooks or the *kunda* system, and temporary illegal supply before formal meter installation. Other methods involve long-term nonpayment of bills and various forms of meter tampering, such as reversing counters, using magnets, tilting meters, altering wiring to disrupt circuits, or tightening meter screws to slow or stop meter rotation, resulting in unrecorded electricity consumption (Hussain *et al.*, 2016). Methods of electricity theft used by tampering meters are;

(i) Methods of Power Theft used in Non-PC Single Phase¹ & Three Phase Meters:

Various technical methods are used to steal electricity by interfering with meter operation. These include phase-to-phase swapping in single- and three-phase meters, where incoming and outgoing phase lines are interchanged to slow down or stop meter recording, sometimes reducing readings by up to 99%, particularly in industrial settings. Another method is the loop system, in which heavy loads are directly connected to the incoming phase before the meter, while smaller loads pass through the meter to avoid suspicion. Theft is also carried out by inserting iron filings or X-ray film strips inside the meter to obstruct or stop the rotating disk, usually done secretly at night. Additional techniques include breaking meter seals to enable wire shunting or gear cutting, attaching shunted wires to bypass part of the current, altering meter gears to reduce recorded consumption, and cutting potential or current coil connections in three-phase meters, which significantly lowers the recorded electricity usage.

(ii) Methods of power theft used in PC Single Phase & Three Phase Meters:

PC-type meters are designed with internal seals and locked wiring that prevent most common electricity theft techniques such as X-ray strips, shunted wires, and gear cutting. However, power theft is still possible in PC single-phase and three-phase meters through limited methods, including phase-to-phase swapping, loop systems, and the use of fine iron filings. These techniques are applied in the same manner as in non-PC type meters.

(iii) Methods of power theft used in Digital Single Phase & Three Phase Meters:

¹ PC stands for polycarbonate, which is a type of plastic, often called organic glass.

In this category, power theft is mainly carried out through shunting and remote-control techniques in digital single-phase and three-phase meters. Shunting involves bypassing electric current either internally by tampering with the meter to insert a shunt wire between incoming and outgoing phase lines, or externally by directly connecting the main phase to the load phase, resulting in little or no recorded consumption. Another method uses a remote-control device installed inside a tampered meter, where a switch and sensor are connected between the potential coil and display to manipulate and reduce the recorded electricity usage (Khan *et al.*, 2016).

Causes of Electricity theft in Pakistan

Electricity theft is largely driven by socio-economic factors. Many offenders perceive stealing from the government as morally acceptable, unlike theft from individuals. Unemployment, social insecurity, and illiteracy further contribute, as people either feel compelled to steal or are unaware of the legal consequences. Higher electricity tariffs, taxes, and weak law enforcement systems are directly associated with increased levels of electricity theft, while corruption and administrative irregularities also worsen the problem. Although theft is more common among middle- and lower-income groups due to financial pressure and limited power access, affluent consumers also engage in non-payment and theft. Additionally, weak transmission, monitoring, and surveillance systems in developing countries facilitate large-scale electricity theft across domestic, agricultural, industrial, and commercial sectors, unlike in developed countries where stronger infrastructure and enforcement significantly reduce such practices (Depuru *et al.*, 2011).

How to control and prevent electricity theft?

Electricity theft is a major problem in developing countries and requires both effective detection and strong control measures. Policies such as subsidized tariffs for low-income users, efficient utility management, and regular audits help discourage illegal consumption. Strict law enforcement is essential to prevent corruption and protect the system from influential offenders. Technical and managerial improvements—such as upgrading infrastructure and using advanced metering technologies—along with public awareness initiatives and location-specific strategies, play a key role in reducing electricity theft and associated economic losses (Depuru *et al.*, 2010). Revenue Assurance and Audit Process (RAAP) helps utilities detect and analyze electricity theft, aiming to reduce commercial losses and increase revenues by around 20% annually. Effective deployment and maintenance of distribution networks, along with upgrading substations with higher-capacity transformers, are key strategies to control these losses (Depuru *et al.*, 2011).

Reducing electricity theft requires a combination of technical, managerial, and systemic approaches. Technically, modernizing outdated transmission and distribution systems, investing in advanced meters, and implementing IT-based monitoring can prevent meter tampering and reduce losses, though these require substantial infrastructure and investment. Managerially, utilities must conduct targeted inspections, curb employee corruption, enforce strict legal penalties, and adopt efficient billing and payment systems to minimize theft. Systemically, restructuring state-owned power companies through deregulation, privatization, or corporatization can create stronger incentives to control theft, as seen in some cases, though success depends on effective implementation and cannot be guaranteed, given political, economic, and social challenges in different regions (Smith *et al.*, 2004).

Research Gap

Most studies on electricity theft focus on its financial losses, technical detection systems, or policy issues at national level. Very few studies examine electricity theft at the local level using first-hand

information from utility employees who directly deal with consumers, meters, and distribution lines. In Pakistan, and particularly in district Peshawar, there is limited research based on primary data that explains the actual methods of electricity theft, the main causes behind it, and the practical measures used to prevent it. The experiences and opinions of field staff such as linemen, meter readers, and supervisory officers are often ignored, despite their direct involvement in theft control. This study fills this gap by providing local, ground-level evidence to better understand electricity theft and to support more effective prevention strategies.

Research Methodology

(a) Objectives of the Study

Objectives of this study are;

- i.** To understand the different modes and patterns of electricity theft.
- ii.** To understand the causes of electricity theft.
- iii.** To suggest preventive measures to eradicate electricity theft.

(b) Universe of the Study

The universe of the study was district Peshawar. Peshawar district has 35 PESCO Sub-divisional offices, providing electricity services. Data was collected from different sub-divisional offices of Peshawar.

(c) Population of the study

The data was collected from every such category of employees who deals the electricity consumers, electricity connection, disconnection, recording consumption of electricity and all those officials who can and are in capacity to answer the questions regarding modes, techniques, causes and prevention of electricity theft. Sample was taken from the whole population keeping in view the nature of the study.

(d) Methodology of Research

Our research was quantitative in nature. We collected both primary and secondary data. For primary data we used interview schedule for data collection; while books, published research articles, published reports, newspapers and other sources were used for secondary data.

(e) Sampling Procedure

i. Sample Size

The sample size was 50 respondents. We selected five sub-divisional offices of PESCO and interviewed 10 respondents from each office namely;

- Sub-Divisional Office Town-1
- Sub-Divisional Office Town-2
- Sub-Divisional Office Hayatabad-1
- Sub-Divisional Office Hayatabad-2
- Sub-Divisional Office Tajabad

ii. Sample Technique

Convenience sampling was adopted for sample selection; which belongs to the category of non-probability sampling. In convenience sampling, samples are drawn from that part of the population

that is close to hand and easy to contact or reach. Keeping in view these traits, we easily reached the respondents from the population and collected data conveniently.

(f) Data Collection Tool

Keeping in view the complexity and technical nature of the problem, we used interview schedule for collecting data. An interview schedule is a set of questions asked from the target respondents. Interview schedule was in English but questions were asked in Urdu and Pashto to make it easy for the respondents.

(g) Pre-Testing & Data Collection

i. Pre-Testing

We conducted a pre-test of the interview schedule on five respondents and noted down all the discrepancies and errors in it. Afterwards all the changes and suggestions were incorporated to the tool.

ii. Data Collection

After the phase of pre-testing, we collected data from 50 respondents in all the mentioned sub-divisional offices of PESCO.

(h) Ethical Consideration

During the study, high standard of research ethics was the foremost priority of the researchers. All the data was collected and represented with honesty and without any biased approach. The respondents were assured that their names and identities will remain confidential and they can openly share their opinions. No violation of copyrights and intellectual property was made during the study. All the data was collected with keen interest and care. The routine official activities of PESCO officials were not disturbed.

(i) Data Analysis Technique

SPSS (statistical package for social sciences) was used for analyzing and interpreting the collected data. Quantitative research is based on statistical method in which data is presented in the form of figures. The aim is to measure the quantity or amount and compare it. This type of research is useful because the results are valid, authentic and easily comprehensible. Moreover; it can be easily generalized to a larger population.

(j) Duration of Study

The duration of study was from April, 2024 to January, 2025.

Results

Table 1: Modes of Electricity Theft from Meter and Line

S. No	How electricity is stolen from meter?	Frequency/ Percentage %	How electricity is stolen from line?				
			A	B	C	D	E
1	Through meter tampering	12 (24%)	6 (12%)	2 (4%)	4 (8%)	-	-
2	Through shunt in meter	12 (24%)	-	-	10 (20%)	2 (4%)	-
3	By cutting neutral line and connecting to a conductor out of meter	4 (8%)	-	-	4 (8%)	-	-
4	By tilting the meter	2 (4%)	-	-	2 (4%)	-	-
5	All of the above-mentioned methods	20 (40%)	2 (4%)	-	10 (20%)	-	8 (16%)
	Total	50 (100%)	8 (16%)	2 (4%)	30 (60%)	2 (4%)	8 (16%)

Denotation:

(A) Through bypassing meter, (B) Connecting joint in line outside of meter, (C) Kunda or Hook, (D) Concealing the connected line for theft in tree etc. and (E) All of the above.

Table 2: Other techniques of electricity theft

S. No	What other ways are used? for electricity theft?	Frequency	Percentage %
1	Shunt connected in PVC line out of meter	16	32%
2	Display of meter intentionally damaged or washed	6	12%
3	Remote control or other devices installed inside meter	6	12%
4	PT cut	4	8%
5	Injecting chemicals or water to damage meter's screen	6	12%
6	Reversing the meter	4	8%
7	Others	8	16%
	Total	50	100%

Table 3: Hardly Traceable Electricity Theft Techniques

S. No	Does some electricity theft techniques exist that are hard to trace?	Frequency / Percentage	Hardly traceable theft techniques					
			A	B	C	D	E	F
1	Yes	22 (44%)	4 (8%)	4 (8%)	4 (4%)	8 (16%)	2 (4%)	-
2	No	28 (56%)	-	-	-	-	-	28 (56%)
	Total	50 (100%)	4 (8%)	4 (8%)	4 (8%)	8 (8%)	2 (4%)	28 (56%)

Denotation

(A) Remote control or other devices inside meter, (B) Meter's screen intentionally damaged or washed, (C) Meter tampering, (D) Resistors inserted in meter for slowing it down, (E) Other ways, (F) No reply.

Table 4: Causes of Electricity Theft

S. No	Why people steal electricity?	Frequency	Percentage
1	Poverty	10	20 %
2	Poor hold of police	-	-
3	Weak monitoring by PESCO	4	8 %
4	To save money	4	8 %
5	Less income	-	-
6	Increased expenses	17	34 %
7	High cost and tariff of electricity	15	30 %
	Total	50	100 %

Table 5: Penalty and Legal Codes regarding Electricity Theft

S. No	Response of PESCO towards apprehended thieves	Frequency/ Percentage	Penalty/ punishment of electricity theft				Law and legal codes about electricity theft				
			A	B	C	D	E	F	G	H	I
1	Register FIR	22 (44%)	-	5 (10%)	17 (32%)	-	8 (16%)	2 (4%)	2 (4%)	2 (4%)	8 (16%)
2	Call police	-	-	-	-	-	-	-	-	-	-
3	Call witnesses	-	-	-	-	-	-	-	-	-	-
4	Impose fine	20 (40%)	20 (40%)	-	-	-	12 (24%)	-	2 (4%)	4 (8%)	2 (4%)
5	Disconnection	6 (12%)	5 (10%)	-	1 (2%)	-	-	-	2 (4%)	2 (4%)	2 (4%)
6	Other measures	2 (4%)	-	-	-	2 (4%)	-	2 (4%)	-	-	-
	Total	50 (100%)	25 (50%)	5 (10%)	18 (36%)	2 (4%)	20 (40%)	4 (8%)	6 (12%)	8 (16%)	12 (24%)

Denotation:

(A) Fine, (B) Court Trial, (C) Police Custody, (D) Other measures, (E) Law exists but I don't know the wordings and sections, (F) It is 462 (i), (G) NEPRA Act, (H) 462 (i) & 462 (k), and (I) Others.

Table 6: PESCO measures to prevent electricity theft

S. No	What measures are taken by PESCO to prevent electricity theft?	Frequency	Percentage
1	Increased legal actions/ FIRs	24	48 %
2	Increased public awareness	8	16 %
3	Increased monitoring	12	24 %
4	Advance theft proof/ tampering proof meters	2	4 %
5	Other measures	4	8 %
	Total	50	100 %

Table 7: Respondents suggestions for preventing electricity theft

S. No	Do you have any suggestions for preventing electricity theft?	Frequency	Percentage
1	Decreasing electricity's cost and tariff	12	24 %
2	Increasing staff	7	14 %
3	Increasing inspection, surveillance and monitoring	9	18 %
4	Increasing role of police	6	12 %
5	Controlling corrupt practices	6	12 %
6	Others	10	20 %
	Total	50	100

Discussion

The main purpose of this study is to understand the different modes and patterns of electricity theft, to understand the causes of electricity theft, and to suggest preventive measures to eradicate electricity theft. It will help identify the different methods and root causes of electricity theft, which leads to significant economic losses and power shortages. Understanding these causes will help utilities and policymakers to design effective preventive measures, improve energy efficiency, and ensure fair billing. It will also help in supporting the development of better monitoring technologies and contribute to reliable and sustainable power systems.

As per primary data collected, among 50 respondents, questions were asked from the respondents of Sub-Divisional Office Town-1, Sub-Divisional Office Town-2, Sub-Divisional Office Tajabad, Sub-Divisional Office Hayatabad-1 and Sub-Divisional Office Hayatabad-2. Among 50 respondents, 4(8%) were Sub-Divisional Officers, 14(28%) were Linemen, 16(32%) were Meter Readers, 16(32%) were Superintendents and no one among the clerks and other ranks were interviewed. Most of the respondents were among the technical staff. And qualification-wise, 10(20%) of the respondents were matric, 5(10%) were inter, 12(24%) were bachelors, 6 (12%) masters, 10 (20%) were DAE, 2 (4%) were engineers, and the rest of 5 (10%) respondents were having different education e.g. B. Com, B.Tech, B. Tech (Hons), primary etc.

The respondents also answered the question of different modes and techniques used by culprits for electricity theft. 12 (24%) respondents answered electricity theft through meter tampering, 12 (24%) answered the option of using meter shunt technique, 4 (8%) respondents answered the option of cutting neutral line and connecting to a conductor out of meter, 2 (4%) answered the option of meter tilting technique. 20 (40%) of the respondents answered the option of all the above-mentioned techniques are used for electricity theft. None of the respondents selected the option of other techniques being used for electricity theft. As far as, the modes of electricity theft from distribution

lines are concerned, electricity theft through bypassing meters was the answer of 8 (16%) respondents, through Connecting joint in line outside of meter was the response of 2 (4%) respondents, through Kunda or hook system was the answer of 30 (60%) respondents, through Concealing the connected line for theft in tree etc. was the option of 2 (4%) respondents, and 8 (16%) respondents replied that all the above mentioned techniques are being used for electricity theft.

When the respondents were asked about some other techniques of electricity theft apart from the meter and distribution line, their responses were; Shunt connected in PVC line out of meter was the reply of 16 (32%) respondents, through intentional damage or washing of display technique was the answer of 6 (12%), through remote control or other devices installation inside the meter was the option of 6 (12%), through PT cut was the reply of 4 (8%), through injecting chemical or water to damage the meter's screen was the option selected by 6 (12%), and through reversing the meter was the answer of 4 (8%). 8 (16%) respondents selected other techniques for electricity theft which include CT cut, through mutual interchange of phase and neutral lines going inside a meter, the method of cutting the neutral line and earthing it or connecting it to outside conductor e.g. water tap etc., phase-phase shunt, heating meter on fire or in oven for damaging its display, inserting resistors in meters, placing internal shunts in meters by opening the body of a meter and then closing it with glue or epoxy, bribing staff not to disconnect meter connection due to consecutive non-payments, bribing staff to reduce the number of consumed units before billing and lastly connecting a second neutral line in digital meters and earthing it to slow down the meter.

When the respondents are asked whether such techniques exist which are very hard to trace and find, 22 (44%) said that such techniques do exist while the rest 28 (56%) said that such techniques don't exist. Among the respondents, 4 (8%) said that remote control or other devices installed inside a meter are very hard to trace, 4 (8%) respondents said that screen of meter intentionally damaged is. such technique, 4(8%) said that meter tampering is very hard to trace, 8 (16%) said that resistors installed inside a meter and 2 (4%) said that techniques like internal tampering of meter, PT cut and shunt in meters are very hard to trace. When the respondents were asked about the causes of electricity theft, 10 (20%) said that poverty is the main cause, 4 (8%) said that it is due to weak monitoring by the PESCO officials, 4 (8%) said that it is because the people want to save their money, 17 (34%) said that it is due to increased and more expenses, 15 (30%) said that people steal electricity due to high cost and tariff of electricity, while no one mentioned poor hold of police or less income among the causes.

Any consumer who violates and steal electricity, is bound to bear penalty or fine. Reply to the question regarding the response of PESCO towards the caught culprits who steal electricity, 22 (44%) respondents said that PESCO registers an FIR against such violator, 20 (40%) said that fine is imposed on electricity thieves, 6 (12%) said that the electricity of such offenders is disconnected as a penalty and the rest 2 (4%) gave different replies e.g. sometimes they call us from high-ups or politicians to not take any action against them and sometimes the violator bribes the staff and officials to turn a blind eye towards them and thus they continue to steal electricity. When the respondents were asked about the penalty of electricity theft, 25 (50%) said that the penalty of electricity theft is fine, 5 (10%) said that the penalty is court trial, 18 (36%) said that it is police custody and the remaining 2 (4%) mentioned that the official get bribed from such offenders to let them go or they are charged with heavy assessment bills. Regarding the question that whether any legal section in the law regarding electricity theft exist or not? And what is it? The replies of the respondents were; 20(40%) said that such a law exist but they don't know the exact wordings and section number, 4 (8%) said that it is section 462-I, 6 (12%) said that it is 462-I and 462-K in

the criminal law, 8 (16%) said that it is NEPRA act, while the remaining 12 (24%) had different answers e.g., like 362-I, 462-I 462-J 462-K, Rs. 50 thousand rupees fine and 3 years' imprisonment, and some answers that imprisonment that can be extended up to 10 years.

We asked the respondents about the steps that PESCO takes to prevent electricity theft. 24 (48%) respondents said that the activity of registering FIRs against the violators has been increased and intensified to decrease electricity theft. 8 (16%) respondents said that the more steps are taken by the utility to make the people more aware about the damages the theft causes to the utility and the country's economy, as well as the consequences in the shape of fine and imprisonment that a violator has to face in case of being caught stealing electricity theft. 12 (24%) said that the monitoring activity has been boosted up to counter electricity theft, 2 (4%) said that in order to prevent electricity theft, advanced theft proof or tampering proof meters have been installed, and in the last the remaining 4 (8%) had given mix responses that are the taken to prevent electricity theft, like Installation of ABC cables, which are theft proof. Some say the initiative of hiring the service of police on deputation and establishing its own lock up for the electricity thieves and some say that the government and utility's strict and stern stance to deal the culprits.

The respondents were asked about suggestions regarding electricity theft, 12 (24%) said that decreasing electricity's cost and tariff would help in the reduction of electricity theft, 7 (14%) said that increasing the staff and officials will help encountering the problem of electricity theft efficiently and effectively, as the utility is facing severe shortage of staff, which affects the monitoring and reporting job of the electricity theft. 9 (18%) respondents said that increasing the inspection, surveillance and monitoring of the lines and connection points will help in the reduction of electricity theft, 6 (12%) respondents said that increasing role of police will do the job, 6 (12%) said that controlling and eliminating the corrupt practices among the staff to protect the culprits will help in preventing electricity theft.

The remaining 10 (20%) respondents gave a number of suggestions to prevent electricity theft which includes; Electricity theft can be reduced by shifting all meters to poles or outside premises, replacing old, defective, and sluggish meters with new digital or static meters, and installing AMR systems for accurate online readings. Public awareness should be increased by informing people about the economic harm and legal consequences of electricity theft, including fines and imprisonment. Preventive measures also include adopting new technologies, improving infrastructure and service delivery, reducing billing irregularities, corruption, and political influence, ensuring staff training and accountability, enforcing electricity laws without discrimination, and promoting large-scale use of renewable energy sources such as solar and wind.

Findings & Conclusion

This study examined the modes, techniques, causes, and prevention of electricity theft in district Peshawar, using primary data collected from 50 male employees of PESCO, including SDOs, linemen, meter readers, and superintendents who directly deal with electricity consumers. All respondents were familiar with electricity theft and identified common techniques such as meter tampering, shunts in meters or PVC, tilting meters, cutting and reconnecting neutral lines, and the use of the "Kunda" or hook system. While many old methods have declined due to the introduction of digital meters and ABC cables, some techniques, such as inserting resistors inside meters, were considered harder to detect. The major causes of electricity theft identified were rising household expenses and high electricity tariffs.

The respondents reported that electricity theft has increased over time and is practiced across all social classes, mostly during night hours and particularly in summer. Theft leads to serious financial and organizational consequences for the utility and the country, including increased load shedding, power tripping, and higher electricity costs. To address losses, PESCO employs measures such as legal action, police raids, increased surveillance, line organization, and placing meters on poles. Most staff members reported theft cases to the office, though some felt they had no direct role.

For prevention, respondents emphasized the effectiveness of SIM-based or AMR meters, stricter legal enforcement, enhanced monitoring, and public awareness about the harms and legal consequences of electricity theft. They also suggested reducing electricity tariffs and taxes, eliminating corruption and political influence, improving infrastructure and service delivery, replacing defective meters, staff training, independent auditing, and promoting renewable energy sources like solar and wind to reduce theft at a broader level.

Recommendations

Utility employees, who are directly involved in monitoring, reporting, and handling electricity theft, are a key source of first-hand information. In this study, respondents suggested several measures to prevent electricity theft, including reducing electricity costs and tariffs, increasing the number of staff to address shortages that affect monitoring, and strengthening inspection, surveillance, and monitoring of lines and connection points. They also emphasized the need to enhance the role of police and eliminate corrupt practices among utility staff that protect offenders.

Additional recommendations included shifting meters to poles or outside premises, replacing old, sluggish, and defective meters with digital and AMR meters, and adopting new technologies for accurate billing. Respondents stressed increasing public awareness about the economic harm and legal consequences of electricity theft, improving infrastructure, service delivery, and maintenance, ensuring independent auditing, providing proper training to staff, enforcing electricity laws without discrimination, and promoting large-scale use of renewable energy sources such as solar and wind.

Conflict of Interest

The authors showed no conflict of interest.

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