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The Implication of Prepaid Metering System on Customer Satisfaction

A.F. Aribisala^a, M. Mohammed

Department of Project Management Technology, Federal University of Technology, Minna.

^aTel: +2348161215679. Email: aribisala2016@gmail.com

Abstract

Metering in the Nigerian Electricity Industry is in desperate need of an emergency response to close the large gap in satisfaction. Energy consumers in Nigeria have long complained about Distribution Companies' unfair billing practices. The objectives of the study were to find out the benefits and challenges of the prepaid metering system among users in Minna, Niger State. The study adopted descriptive survey with a structured questionnaire as part of the research design. The questionnaire sought responses from 100 randomly selected residential (domestic) users of prepaid meter in Minna, Niger State. The findings of the study revealed that the most prevalent benefits of the meter are no accumulated debt; no struggle with bill payment; careful with electricity usage and no disconnection fee. The findings also show that, while customers have been satisfied (benefited) in many ways, the prepaid metering system has also caused them challenges, the highest level of dissatisfaction expressed by users is the delay in receiving and installation of prepaid meters; increase in electricity tariff and limited use of electrical appliances. The findings enabled this study to reach far-reaching recommendations that are thought to be ideal to improve customer satisfaction and reduce dissatisfaction among users and those planning to switch to prepaid meters. These include receiving and installation of prepaid meters on time, decrease in electricity tariff, increase vending points (stations), good customer care service (units)

Keywords: prepaid metering system, postpaid metering system, customer satisfaction

1. INTRODUCTION

Metering is the process and method of using devices to measure the amount and direction of electrical energy flow, particularly for end-use. It can also be defined as the installation of equipment that allows a utility to determine how much electricity a specific customer has consumed [1]. The introduction of electricity in Nigeria started with the postpaid metering system, which requires employees of the Distribution Company (DISCO) to physically read meters and pay for electricity that has already been consumed. The implementation of the prepaid meter was prompted by the electricity company's (Power Holding Company of Nigeria) difficulties in collecting revenue from electricity bills and reducing losses [2]. The majority of clients did not agree with the amount of electricity billed to their households and did not pay for it, resulting in high debt levels. As a result, prepaid meters were introduced primarily to address billing and revenue issues.

Customer satisfaction is one of the most important concepts for evaluating the performance of a company or a product. For analyzing a business's success, there is a strong link between retaining a customer and customer satisfaction; the customer is satisfied when product quality meets their expectations and assumes the item to be of high quality; on the other hand, if it does not meet their parameters of perceived quality, they would assume the product to be of low quality [3]. An organization's performance is determined by the ability to recognize and meet the needs and desires of its

customers on a regular basis. In today's ever-increasing competitive climate, customer satisfaction is one of the most important tools a company can use to gain an advantage over its rivals. Any company that wants to grow its market share must constantly recognize and improve the factors that increase customer satisfaction, as well as identify and avoid the factors that decrease customer satisfaction [4]. The implementation of the prepaid metering system is a good way to guarantee customer satisfaction while also ensuring the corporation collects revenue on time [1]. Prepaid meters are being introduced by countries and utilities to increase accessibility, reduce non-payment of electricity by households, and recover costs [5]. Prepaid metering, in general, is used as a credit monitoring mechanism and/or a way to improve access to electricity in rural areas. Prepaid meters, according to [6], result in improved customer welfare, reduced account arrears, and lower operating and financial service costs. The specific objectives are to identify the benefits and challenges of the prepaid metering system.

A study conducted by [7] on customer perceptions of the prepaid meter system show that the majority of customers are happy with their prepaid meters and are interested in learning more about the prepaid energy meter system. According to the findings, prepaid meter vending stations, mobile vending, technological features, vending time, awareness programs, fear of new technologies, and support systems are some of the factors that contribute to customer dissatisfaction.

Table 1: Benefits of Prepaid Meter.

Factors	Mean	Std. Deviation	Rank
No accumulated debt and I avoid non-payment problems	4.23	.908	1
No struggle for bill payment since I buy before I use	4.21	.924	2
Careful with my usage of electricity.	4.18	.809	3
Conscious of how much I spend in a month.	4.14	.829	4
No disconnection fee	4.10	1.150	5
No need to pay reconnection fee.	4.09	1.156	6
No hazard of billing process (under billing/over-billing/bill missing).	3.89	1.127	7
No more meter readers.	3.88	1.066	8
The prepaid meters are efficient and do not easily spoil.	3.87	1.116	9
No need pay any money when the meter is not in use.	3.80	1.247	10
User Friendliness	3.63	1.134	11
Less payment as compared with postpaid meter	3.36	1.514	12

Table 2: Challenges of Prepaid Meter.

Factors	Mean	Std. Deviation	Rank
Delay in receiving and installation of prepaid meters.	4.17	1.288	1
Increase in electricity tariff	4.15	1.250	2
Limited use of electrical appliances.	3.65	1.218	3
Low training/awareness program about prepaid meter.	3.63	1.228	4
Tokens (Units) purchased get finished quickly.	3.56	1.290	5
Higher taxes are charged which increase the cost of electricity.	3.49	1.330	6
Misunderstanding when using in groups.	3.34	1.350	7
Not much aware of the technical feature(s) of prepaid meter.	3.27	1.302	8
Limited vending point	3.02	1.271	9
Unable to buy tokens on Sundays and holidays.	2.98	1.435	10

Customers weigh a variety of factors before accepting the prepaid meter for use, according to [8], including user friendliness of the prepaid meter, reliability of the prepaid meter, and access to prepaid meter vending points. Prepaid meter users, according to [9], want their meters to do more for them, particularly in terms of being able to recharge and communicate with their meters wirelessly via mobile phones, rather than the current manual methods of recharging and obtaining information from the meters. Users, in particular, want value-added services such as wireless token recharge through cell phones and wireless information sourcing from the meter, such as unit balance, time of power outage and restoration, and so on. The absence of a local meter manufacturer, corruption, a lack of quality consultation and education, a high level of electricity consumption, difficulty in changing tariffs, and the high cost of meter acquisition are all factors impeding the provision of prepaid meters [10]. Also [1] identified several challenges, including the lack of vending infrastructure, the contractor's failure to trip, the cost of acquiring the meter, and delays in receiving and installing prepaid meters. Although similar studies had been conducted on the benefit and challenges of the prepaid metering system such as [1, 7, 8], this study differed from theirs by investigating user satisfaction of using the prepaid metering system and in addition, this study was conducted in Niger State.

2. RESEARCH METHODOLOGY

The study is a descriptive survey with a structured questionnaire as part of the research design. The

questionnaire sought responses from 100 randomly selected residential customers in Minna, Niger State, who are using prepaid meters. This questionnaire was created using a five-point likert scale, with 1 indicating "strongly disagree," 2 indicating "disagree," 3 indicating "neutral," 4 indicating "agree," and 5 indicating "strongly agree." This set of 100 responses served as the foundation for the study's data presentation, analysis, conclusion, and recommendations. Some of the variables and factors used by [1, 7] were adopted by this study.

3. DISCUSSION AND FINDINGS

The ability of the prepaid meters to provide value to customers and thus meet their needs is critical. Table 1 shows the variables that influence customer satisfaction with regard to prepaid meter usage. According to the findings, the most prevalent causes of customer satisfaction are; 'no accumulated debt and the users avoidance of non-payment problems' with mean value of 4.23 ranked first, 'no struggle with bill payment' (4.21), 'careful with electricity usage' (4.18), 'Conscious of how much I spend in a month' (4.14), and 'No disconnection fee' (4.10) ranked second, third, fourth and fifth respectively. The result implies that these factors have caused an increase in the level of satisfaction of users. Setbacks have often characterized human endeavour, and it is only natural that there are difficulties associated with prepaid meter usage. Table 2 shows the causes of dissatisfaction among users of prepaid metering system. The highest level of dissatisfaction expressed by

users is the delay in receiving and installation of prepaid meters with mean value 4.17, dissatisfaction was also expressed as a result of increase in electricity tariff (4.15). Limited use of electrical appliances (3.65) and low training/awareness program about the prepaid metering system (3.63). The result implies that these factors have caused an increase in the level of dissatisfaction of users.

4. CONCLUSION AND RECOMMENDATION

The findings of this study show that, while customers have been satisfied (benefited) in many ways, the Prepaid Metering System has also caused them dissatisfaction (problems) in some ways. As a result, there is a need to improve the prepaid metering system's services. One of the study's objectives was to make appropriate recommendations to improve customer satisfaction and reduce dissatisfaction among users and those planning to switch to prepaid meters. Based on the findings, the recommendations worth considering include: receiving and installation of prepaid meters on time; decrease in electricity tariff; increase vending points (stations); good customer care service (units).

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