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Statistical Investigation of Satisfaction Level of Automated Teller Machine (ATM) Users in a Nigeria University [University of Benin, Benin City: A Case Study]

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Abstract

This study aims at investigating the satisfaction level of Automated Teller Machine (ATM) users in a Nigerian University (University of Benin, Benin

City, Nigeria: A case study). We observed that there were no differences in the mean knowledge of ATM features among the sex and status of the staff and students (respondents) of the University. The study also revealed that the staff and students of the University are satisfied with the present ATM facilities in the University, but preferred 200 naira notes to the present 500 and 1000 naira notes being dispensed by ATM at various locations in the University.

Keywords: Automated Teller Machine, questionnaire, respondent, satisfaction, surcharge, hypothesis.

Introduction

An Automated Teller Machine (ATM) is a computerized telecommunication device that provides the customers of financial transactions (cash withdrawal, balance enquiry, transfers etc) without the need for human clerk or bank teller. It is merely computers in a large secure enclosure that handles normal Banking transactions. The sole purpose is to provide customers with services 24hours a day, 7 days a week and 365 days a year at many locations dispensing cash. ATMs are known by various other names including Automated Transaction Machine, Automated Banking Machine, Cash Machine, Hole-In-The Wall Machine, Cash Point and Any Time Machine.

Litan (1999) described the introduction and rapid use of ATM as the most visible revolutions in banking sector. According to Litan (1999), ATMs offer customers the convenience of Banking in many more locations than ever before. The development of ATM's services occurred to improve bank's competitive positions by attracting more customer's accounts and also to perform many of the same tasks as a human teller at lower cost.

In Nigeria, the deployment of ATM by banks and its use by banks customers is just gaining ground and has grown rapidly in recent times. This has happened especially after the consolidation of banks which has in all probability made it possible for more banks to acquire more ATMs (Fasan, 2007).

ATM services have a history that is less than 12 years in Nigeria. At first, they were operated as elitist services designed for those desirous of exclusive services. Cards were rare and the process for obtaining them tortuous. Agboola (2006) reported that although only a bank had an ATM in 1998, by 2004 the number of ATM transactions via the interswitch Network had

increased from 1,065,972 to 144,110,773 in March 2009, and now there were over billions of ATM transactions in Nigeria.

The usage of ATM in Nigeria Universities started as for back as late 2006, and in 2007 University of Benin, Benin City had only one ATM which grew up to 22 by December 2011. However, among the modern banking services such as e-banking, internet banking, point of sale (POS) transaction, money transfers ATMs emerged as the most popular with 96% awareness level (WWW.intermarc ng.com).

The widespread of ATM in Nigeria Universities calls for a study that would give insight into the issues surrounding its usage, that is: if ATM is being adequately adopted by the users; and if necessary, what could be done to improve on its use in the university.

Services offer by ATM to the bank's customers (students & staff) in the University are mainly cash withdrawal, balance inquiry and PIN change. Hence, ATM reduces the queues in the banking hall; saves the banks the cost of hiring tellers by automating many teller transactions; and creates extended service hours provided by banks beyond traditional 8am-4pm banking hours, etc.

Materials and methods

The location of the study is University of Benin, Benin City, Nigeria. The University has a population of about 44,000 comprising about 40,000 students and 4000 staff. The study population comprises the students and staff of the University who make use of ATM facilities. These customers come from different background and are of different ages with other individual differences. As at the time of this research there were 8 commercial banks in the University with 22 ATMs located within the University.

The data collection instrument used in this research was structured questionnaire divided into four sections namely.

* Section A: questions 1-6 border on individual's category which are used in data classification based on either sex, faculty or status.

** Section B: questions 7-17 border on respondent's knowledge of the various features or services offered by ATM, and the suitability of locations of ATM on campus.

*** Section C: questions 18-24 border on the effectiveness of the ATM in terms of downtime, availability and speed.

****Section: D questions 25 and 26 border on the menace of the ATM such as ATM surcharges, unauthorized withdrawals and ATM card seizure.

A fairly representative sample size of 1000 respondents was drawn by employing stratified random sampling technique (Okafor 2002). This method ensures that each Faculty (stratum) was included. Table 1 shows the presentation of various data collected from the Faculties in the University of Benin, Benin City, Nigeria.

Table 1: Faculties Represented in the Study

Faculty	Phy. Sci.	Med. Sci.	Mgt. Sci.	Soc. Sci.	Art.	Pharmacy	Agric.	Law	Eng.	Edu.	Life Sci.
Number of Respondents	80	80	80	80	80	14	28	80	50	58	72

A total of 702 questionnaires were collected from the respondents from eleven (11) Faculties.

Definitions

ATM Downtime is a situation where the ATM is unable to perform any of its functions or services due to network issues, cash jams or out of cash situations. ATM surcharge is the fee debited to customer's account wherever the ATM is used to withdraw money.

Classification and analysis of data

Classification of data

We classified the data collected in Tables 2, 3, 4 and 5 respectively:

Table 2: Categorization of Number of Respondents

Status	Sex	Knowledge of ATM	Use of ATM other than cash withdrawal	Knowledge of ATM Surcharge	Surcharge influence the choice of ATM
Staff:88	Male: 216	Yes: 400	Yes: 371	Yes: 630	Yes: 554
Student:614	Female:486	No:302	No. 331	No: 72	No: 148

Table 3: Effectiveness of ATM in terms of Speed, Availability and Downtime

Rating	Effectiveness of ATM in terms of speed		Effectiveness of ATM in terms of Availability and Downtime	
Poor	80		92	
Fair	322		380	
Good	266	satisfactory	212	satisfactory
Excellent	34		18	

Table 4: Respondent's Satisfaction Rating and ATM Menace

Respondent's Satisfaction	ATM Menace (Most Sensitive)
Satisfactory: 580	Surcharge: 195
	Debit Without Dispensing Cash: 200
Not Satisfactory: 122	Card seizure: 107
	Unauthorized Withdrawal: 200

Table 5: Respondent's Preference to Naira Notes

Naira Notes (₦)	1000	500	200	100	50
Number of Respondents	86	217	241	139	19

Data Analysis

We shall attempt to verify the following null hypotheses at 5% level of significance:

(a) H_0 : There is no difference in the mean knowledge of ATM amongst various categories (sex and status) of respondents.

(b) H_0 : There is no difference in the mean surcharge influence on the choices of ATM amongst various categories (sex and status) of respondents.

(c) H_0 : Are ATM users on campus satisfied with the present facility?

For verification of hypotheses (a) and (b), we obtain the following analysis of variance (ANOVA) Table 6 and 7 respectively:

Table 6: ANOVA for the Knowledge of ATM amongst Sex and Status of Respondents

Source of variation	Sum of squares (status)	Sum of squares (sex)	Mean squares (status)	Mean squares (sex)	Degrees of freedom (status)	Degrees of freedom (sex)	F_{status}	F_{sex}
Between Groups	13.186	52.878	13.186	52.878	1	1	58.090	310.522
Within Groups	158.894	119.202	0.227	0.170	701	701		
Total	172.080	172.080						

Table 7: ANOVA for the Surcharge Influence on the Choices of ATM amongst Sex and Status of Respondents

Source of variation	Sum of squares (status)	Sum of squares (sex)	Mean squares (status)	Mean squares (sex)	Degrees of freedom (status)	Degrees of freedom (sex)	F_{status}	F_{sex}
Between Groups	40.314	171.193	40.314	171.193	1	1	46.907	254.572
Within Groups	601.612	470.733	0.859	0.672	701	701		
Total	641.926	641.926						

The 5% point $F_{701,1}\left(=F_{\infty,1}\right)$ value is 3.84. Hence, we reject the hypotheses (a) and (b) respectively since F_{status} and F_{sex} are greater than 3.84. We

conclude that there are differences in the mean knowledge of ATM and surcharge influence on the choices of ATM amongst status and sex of respondents respectively.

We verify hypothesis (c) on the basis of effectiveness of ATM in terms of speed, availability and Downtime. From Table 3, 88.6% and 86.9% of respondents rated effectiveness of ATM in terms of speed and, availability and downtime as satisfactory respectively. Hence, on the basis of high satisfactorily rating, we conclude that the ATM users on campus are satisfied with the present ATM facilities.

Evidently, out of 702 respondents, 88(12.5%) were staff, 614(87.5%) were students, 216(30.8%) and 486(69.2%) were males and females respectively. Consequently, 400(57%) respondents know all the features of ATM, 302(43%) respondents do not know all the features of ATM, 331(47.2%) respondents use ATM only to withdraw cash while 317(52.8%) use ATM other than cash withdrawal. Also 630(89.7%) respondents know about the charges that involved when using ATM while 72(10.3%) respondents do not know about charges on the use of ATM. 78.9% of the respondents are very sensitive to ATM surcharge and would rather not use the ATM if they have alternative means that will not charge them but only 148(12.5%) are indifferent about charges. With regard to ATM menace, 28.5% of respondents are most sensitive to Debit without dispensing cash and unauthorized withdrawal respectively, while only 27.8% and 15.2% of respondents are sensitive to ATM surcharge and card seizure respectively. About 34.3% of respondents prefer ₦200 note to other naira notes ₦1000 (12.3%), ₦500 (30.9%), ₦100 (19.8), ₦50 (2.7%) respectively.

Conclusion

Our findings showed that there are no differences in the mean knowledge of ATM features and the surcharge influence on the choices of ATM amongst the sex and status of the respondents respectively.

Obviously, the respondents are satisfied with the present ATM facilities and preferred ₦200 note to the present ₦500 and ₦1000 notes being dispensed. Also, ATM menace such as Debit without dispensing cash and unauthorized withdrawal should be checked.

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