

## **The Implementation and Adoption of Electronic Payment System by Hospitals in Nigeria: A Case Study of Good Shepherd Clinic**

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### **Abstract**

*Information Communication Technology play a major role in the implementation and adoption of electronic payment systems in Nigeria. The rapid growth of the internet has facilitated the exponential growth in the electronic payment systems (EPS) as a result business transaction is constantly moving from cash-based to electronic-based hence leading to economic growth in Nigeria. This study examines the implementation and adoption of Electronic Payment System by Hospitals in Nigeria. A case study of Good Shepherd Clinic. A random sampling of 150 patients of the clinic was carried out and the data gathered through structured questionnaire consistent with the Technology Acceptance Model (TAM). Based on the findings, it revealed that most of the clients preferred to use the electronic payment system (EPS) or has intention to use the EPS method. It is also seen that economic growth has a significant positive effect on the implementation of electronic payment system in the hospital. To continuously promote the adoption of EPS in Nigeria, it is necessary to address the barriers identified and encourage clients to use the services of the bank where the money is kept for easy usage.*

**Keyword:** *Cash-based, Electronic Payment System, Information Communication Technology, Questionnaire, Random Sampling, Technology Acceptance Model.*

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### **Introduction**

The recent evolution of information and communication technology (ICT) across the world has changed the lives and operations of individual and companies. According to [1], the global proliferation of the internet and its speedy use over the years has facilitated electronic commerce in the global business environment. The techniques for business transaction completion are moving away from the conventional in- person trading of product and services to the recent electronic payment system.

Subsequently, with the emergence of the EPS, the world payment system tends to align with the current trend of cashless society hence paper and coin-based money is gradually changing to electronic form. The EPS is an operational system governed by rules, laws, and standards which links customer's bank account and monetary exchange through their bank deposits.

EPS is flourishing and increasingly becoming an acceptable means of payment in today's business world because of its openness, digitization, convenience, speed, efficiency, timeliness, and global accessibility characteristics of the internet which has enabled real time payment of transactions and other medical activities. Electronic payment system brought about efficiency, innovation, and fraud reduction in the world payment system [2].

The Nigeria payment system was predominantly cash-based until January 2012 when the federal government introduced the cashless based policy. One of the main reasons for its development was to modernize the payment system, stabilize the financial institutions, promote economic activities, and create a secure and efficient means of conveniently making and receiving payments from all locations, at any time through the

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various electronic channels. These include debit cards, electronic funds transfer, credit cards, internet banking, Automatic Teller Machine (ATM), POS, online banking, and e-commerce payment systems.

Good shepherd Clinic has a large clientele base of in-patient and out-patient and attracts more customers due to their top-notch services and state of the art equipment. The introduction of the e-payment system has reduced the security problem of handling cash, cut administrator costs and lower liquidity leakage in the hospital.

ICT has made it easier for electronic payment to be used for medical treatment in Good Shepherd Clinic where debit card is used by patients for service payment. This enables faster bill payments, induce cost savings, better transaction tracking, transparency, promote trusting relationship between the patient and the staff of the hospital. [3] opined that E-payment systems provides a crucial support service in the digital economy due to its efficient and reliability. However, E-payment still comes with some negativity, patients get discouraged in using the e-payment system for the payment of medical services because of the difficulties experience in getting a strong network to complete the payment or where they must wait for a long time to make payment.

A detailed literature review will be evaluated as well as the description of the research methodology with the data collection method employed. The data used will be analysed on the factors that influenced the effective adoption of e-payment systems. Eventually, the key findings and the conclusion will be based on the given analysis.

The study will evaluate the determinants for the adoption and implementation of electronic payment system amongst patients in Good Shepherd Clinic in Nigeria and the objective will specifically assess:

1. The patient's intention to adopt electronic payment system for the hospital bill payment.

2. The factors that affect the patient's intention to use electronic payment system amongst clients of the hospital.
3. The obstacles that will affect the adoption of the electronic payment system amongst the clients of Good Shepherd Clinic.

## **Literature Review**

Adoption of technology is deep-rooted in so many research on information systems. Payment is a cash or money transferred from person to a seller when goods are purchased. Electronic payment is a method whereby money is transferred from one party to another party electronically without using paper or cheques.

In developing countries, researchers have focused on electronic payment system and have identified some e-payment system issues in respect to customer, seller's point of view and security of the users. It is necessary to identify appropriate articles in this context, E-payment system definition by different scholars, its benefits, adoption and implementation and the constraints affecting the e-payment system will be considered in this section.

## **Definition of Electronic-Payment System**

In the last decades, E-payment systems have received much attention from various researchers, scholars, and information system developers due to the important role it plays in the modern electronic commerce. Different researchers have different perspectives on the definition of e-payment. [4] defined e-payment as an inter-connection between individuals and organisations assisted by banks and inter-switch houses to carry out monetary exchange electronically. In addition, [5] opined that e-payment is a form of fund transfer via the internet. In another perspective [6] sees e-payment as cash and associated transactions carried out using electronic means. In a nutshell, electronic payment system is a platform that enables two or more parties to settle financial monetary transactions via electronic means.

## The Evolution of the E-Payment System in Nigeria

Electronic payment is relatively new and growing in Nigeria. Majority of the transactions are done with cash, as cash remains the preferred medium of payment. This can be attributed to poor awareness of the e-payment system, lack of trust, ignorance, illiteracy, poor banking culture and love of the status quo.

Currently, payment in Nigeria has changed and become digitized which gave rise to online payment and has aided a lot of individual, government, and organisations to grow their businesses online as this reduces the burden of carrying and processing physical cash transactions manually. We cannot completely rule out cash transaction, but online payments cannot be ignored as the digital era with the help of the internet is transforming a lot of lives.

Nigeria started with cheque payment, as cheque was the only option to cash, then moved to electronic payment in 2012. This opened

doors to other payment systems like card payments, online payments, online banking, mobile payment, ATM, and others.

The Automatic Teller Machine (ATM) is the most population e-transaction method in Nigeria because of its convenience. Some ATM deployment leaders like VPay, InterSwitch, QuickCash, ETranzact etc, has all bank connected to their network which makes it possible for users to use their cards in all ATM machines and banks nationwide. While the ATM is making cash withdrawal seamless, Debit/Credit cards, e-wallets, makes cashless transaction a lot more convenient which makes the economy of Nigeria to be referred to as a cashless economy.

It is evident that electronic payment systems have contributed a lot in growing the Nigeria economy as can be seen in the diagram below which shows the volume and trend analysis of E-payment transactions in Nigeria from 2012 to 2018.

**Table 1.** Volume of E-Payment Channels

<b>Volume of E-Payment Channels from 2012 to 2018</b>							
	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>2012</b>
Cheques	9,019,278	10,808,983	11,719,847	13,466,461	15,283,933	14,211,078	12,161,694
NEFT	26,760,852	31,034,624	29,754,182	28,935,605	29,690,765	29,834,317	28,941,559
ATM	875,519,307	800,549,099	590,238,934	433,695,748	400,269,140	295,416,724	375,513,154
POS	295,890,167	146,267,156	63,715,203	33,720,933	20,817,423	9,418,427	2,587,595
WEB	50,815,901	28,991,097	14,088,247	7,981,361	5,567,436	2,900,473	2,276,464
MMO	87,086,260	47,804,561	47,053,252	43,933,362	27,744,797	5,930,181	2,297,464
NIP	663,124,139	370,870,672	153,616,450	71,223,545	40,829,854	17,112,158	4,449,654
EBILLSPAY	1,053,342	905,941	1,026,886	1,208,556	593,579	557	-
REMITA	44,461,846	39,706,264	38,249,886	19,417,371	15,029,627	-	-
NAPS	27,384,756	11,900,008	3,965,212	936,667	-	-	-
M-CASH	229,328	77,832	-	-	-	-	-
CENTRALPAY	1,260,380	375,356	70,239	66,031	-	-	-

Source: Central Bank of Nigeria Bulletin (2018)

## Benefits of Electronic Payment System

The benefit of using E-payment system in Good Shepherd Clinic for patients and the management outweigh its disadvantages. One of the significant benefits that electronic payment

system provides is anonymous flexible electronic payment with added security required for internet transactions. The anonymity of patients of the hospital are guaranteed and illegally issued digital money are traceable.

The Good Shepherd clinic introduced the e-payment system to increase efficiency and revenue collection, this enables staffs to reduce the time it takes to deal with transaction processes. According to [8] EPS increases efficiency, enhance productivity, improve security and customer convenience and ease of payment.

In addition, the patients feel more secured to send their debit numbers to settle medical services since they are aware of the secured system of payment and are a lot mindful of their protection and security unlike cash payment which makes them more vulnerable to threats and frauds.

Furthermore, Electronic payments lower accounts receivable outstanding and ensure faster updates on accounts receivable. It also aids automatic deposits which speed up cash availability and leads to better cash flow in the hospital.

More so, EPS brings down expenses for the hospital as the more payment is processed electronically, the less cash is spent on paper and postage. Offering electronic payment by the hospital help to improve customer retention.

### **Implementation and Adoption of E-payment Systems**

The advancement of Information Technology has changed the traditional system of payment into a more efficient and viable system. The effectiveness of financial transactions execution, quick access to funds, security and many more advantages has moved e-payment to a more celebrated pace than the paper money hence implementation and adoption of electronic payment systems in Good Shepherd Clinic is a lot easier to achieve.

The e-payment framework is fast gaining ground in Nigeria. Clients prefer using the e-payment medium to perform financial transactions instead of carrying cash or going to the bank to settle their bills as it is convenience and perceived as easy to use. They see the e-payment system as easy to learn, understand,

control, flexible and easy to implement because the system provides support, actual information, and reduction in error rates. According to [9] perceived ease of use is the extent to which a person believes that less effort is required in the use of information technology.

Laws and regulations by the federal government of Nigeria in promoting a cashless economy has also assisted in the seamless implementation of the e-payment systems in the hospital. The enactment of the Apex Bank Act, 1991 and the formulation of regulations has strengthened the banking and the financial institutions in Nigeria. The central bank is charged with the responsibility of promoting the e-payment system in the country, this is viewed as a positive contributing factor.

### **Factors Affecting the Implementation and Adoption of E-payment Systems**

The major concern affecting the adoption of e-payment system is the level of security. The client see money transferred in each step of the transaction but no direct contact between the involved parties and the fear that the payment system may not be secured hence the trust and confidence in the system is eroded. More so, they are afraid of what will happen if their private information is made public or hacked.

Secondly, people's behaviour has hindered the fast adoption of the e-payment system. Some clients are accustomed to physical cash and cheque and feel safe knowing that the cash is with them than carrying a chip which represents thousands of naira in the wallet.

Poor infrastructure management in the telecommunication and the power sector as well as top notch development of ICT in the country is one of the major factors that affected the speedy promotion, deployment, and adoption of the electronic payment systems.

In addition, the cost of each transaction is borne by the users both the direct and the indirect cost hence this delays the speedy adoption of the e-payment systems.

## **Research Methodology**

### **Data Collection and Sample**

The study was designed to examine the adoption and implementation of Electronic Payment System by Good Shepherd clinic. A cross-sectional in-patients and out-patients as well as the accompanying relatives that pay the hospital bill for services received and are 18 years old and above.

Good Shepherd clinic has an estimated population of 600 patients, out of which a total of 150 respondents was used as the sample size. A systematic random sampling with a starting point from the first patient that arrived at the hospital reception desk was employed. This gives enough time to interview a patient before the next patient arrives to avoid delaying patients from their primary mission.

In this study, a quantitative data collection method was used. A standard questionnaire with structured questions was written in English Language and understood by the patients was used in the data collection. The questions entail the social demographic features of the respondents in terms of electronic payment systems ease of use, the attitude towards usage, perceived usefulness, and the behavioural intention to use. The respondents used the 5 points Likert-scale, ranging from 1 being poor to 5 very good to indicate their agreement level.

### **Test of Data Reliability and Validity**

The Cronbach's Alpha approach was used to test the reliability of the research instrument. An initial 20 patients that did not participate in the main study were used for the pre-test and any value above 0.70 was considered as high

reliability of the instrument. According to [10] any reliability of 0.7 and above on a significant sample is said to be a good instrument. In addition, some administrators were trained on the steps of filling the questionnaires, verifying the suitability and the significance of the questions and the data collection process.

### **Analysis of Data**

The collated data was inputted and analysed using the Statistical Package for Social Sciences. The multivariate linear regression was used for the estimation and testing of the hypotheses. The missing values were verified before the statistical analysis was done. A normalisation of the distribution of the variables was carried out using the Kolmogorov-Smirnov tests, the Variance Inflation Factor (VIF) and the correlation analysis procedure applied to test for multicollinearity. The significance test of ordinal variables was done using Mann Whitney U test, 0.05 level of significance used to test each construct while the adjusted goodness of fit ( $R^2$ ) was used to test the variance explanation by the model.

A theoretical model was used to measure the intention to adopt the EPS because the individual behavioural aspect affecting the adoption could not be captured. The model will be used to predict but not to capture the actual factors affecting the adoption of the e-payment systems.

### **Data Presentation, Findings and Discussion**

The socio-demographic data was used to obtain the characteristics of the one hundred and fifty patients that participated in the Good Shepherd clinic survey.

**Table 2.** Socio-demographic Characteristics of the Respondents

Criteria	Frequency	Percentage Response
<b>Gender</b>		
Female	89	59.3
Male	61	40.7
<b>Educational qualification</b>		
Artisans	11	7.3
Primary Education	16	10.7
Senior Secondary certificate	34	22.7
Higher qualification	89	59.3
<b>Age</b>		
18 - 30	74	49.4
31 – 40 years	44	29.3
41 – 50 years	23	15.3
50 and above	9	6
<b>Occupation</b>		
Handicrafts/Welder/Mechanics	41	27.3
Unemployed	40	26
Employed	54	36
Self Employed	15	10
<b>Monthly Income</b>		
Less than N100,000	43	28.7
N100,000 – N300,000	27	18
N301,000 – N500,000	46	30.7
N501,000 – N700,000	23	15.3
N701,000 and above	11	7.3

In table 2, 59.3% of the respondents were female between the ages of 18 and 40 years with a higher institution education of 59.3%. 36% of

these respondents are employed and about half had a monthly income between N100,000 and N500,000.

**Table 3.** The Association between Socio-demographic, Economic Characteristics, and Preferred Mode of Payment

Criteria	Frequency	Mode of Payment (EPS)	Mode of Payment (Cash)	OR (Confidence level – 95%)	P-value
<b>Gender</b>					
Female	89	61	28	2.1 (0.9-4.6)	0.666
Male	61	50	11		
<b>Educational qualification</b>					
Artisans	11	8	3	1.0	
Primary Education	16	6	10	0.2 (0-1.2)	0.120*
Senior Secondary certificate	34	22	12	0.7 (0.2-3.1)	0.726*
Higher qualification	89	75	14	2.0 (0.5-8.5)	0.392*
<b>Age</b>					

18 - 30	74	54	20	2.0 (0.3-3.1)	0.936
31 – 40 years	44	32	12	1.0 (0.3-3.2)	0.938
41 – 50 years	23	22	1	7.9 (0.8-74.5)	0.075*
50 and above	9	3	6	0.2 (0-1.0)	0.095*
<b>Occupation</b>					
Handicrafts/Welder/Mechanics	41	24	24	1.0	
Unemployed	40	32	32	2.8 (1.0-7.6)	0.038
Employed	54	42	42	2.5 (1.0-6.1)	0.045
Self Employed	15	13	13	4.6 (0.9-23.1)	0.061*
<b>Monthly Income</b>					
Less than N100,000	43	33	10	1.0	
N100,000 – N300,000	27	17	10	0.5 (0.2-1.5)	0.217
N301,000 – N500,000	46	35	11	1.0 (0.4-2.6)	0.942
N501,000 – N700,000	23	16	7	0.7 (0.2-2.2)	0.528
N701,000 and above	11	10	1	3.0 (0.3-26.6)	0.426*
<b>Method of kept money</b>					
At home	7	3	4	0.2 (0-1.0)	0.053*
Bank	46	37	9	1.0	
Mobile phone	46	28	18	0.4 (0.1-1.0)	0.040
Both Bank and Mobile phone	51	43	8	1.3 (0.5-3.7)	0.618
<b>Ever used EPS to make Payment</b>					
YES	97	84	13		
NO	53	27	26	6.2 (2.8-13.8)	<0.001

In Table 3 above which shows the distribution of where money was kept by the respondent. 4.7% of the respondents kept their money at home, those that kept their money both at the bank and their mobile phone were 34% while there was a tie of 30.7% for respondents that kept their money in the bank and those that kept their money in the mobile phones respectively.

In addition, out of the 150 respondents, 64.7% (Mobile phone and both Bank and Mobile phone) stated that they have made payment using the electronic payment system. 58.8% out of 97 respondents preferred to use the EPS, 33% both cash and EPS while 8.2%- preferred cash payment.

In summarising Table 3, there was an association between socio-demographics, economic characteristics, and the preferred means of payment of the hospital bills in Good Shepherd clinic. Patients who had used the EPS to settle their hospital bills are 6 times

significantly more likely to use it again than using the cash payment method (OR = 6.2, 95% CI = 2.8-13.8,  $p < 0.001$ ) as well as patients that kept money in the bank. More so, patients that kept money in their mobile phone were 0.4 times significantly less likely to prefer EPS than those using cash payments (OR = 0.4, 95% CI = 0.1-1.0,  $p = 0.040$ ) while those that kept money at home were 0.2 times (no significant difference) less likely to prefer EPS. Unemployed employees (2.8 times) and employed employees (2.5 times) were significantly more likely to prefer EPS than cash payment when compared to handicrafts.

There was twice more likelihood that male patients preferred EPS to female patients though the difference was not statistically significant. Some literatures allude that female are reluctant to adopt to new technologies which is related to risk aversion and unawareness of how the system operates. In the same vein, patients

between age 41-50 were 8 times more likely to prefer EPS as well as patient between aged 18-30 (2 times more likely to use EPS) than cash payment, though no significant difference.

Furthermore, patients older than 50 years were 0.2 times less likely to prefer using EPS with insignificant difference. Old patients are less likely to prefer using EPS than the younger

ones. According to [11] older persons not preferring EPS may probably be related to attitude towards risk, inexperience, or negative previous experience. The higher institution patients and self-employed with a monthly income higher than N700,000 were more likely to prefer the electronic payment system than cash payment with no significant difference.

**Table 4.** Socio-demographic, Economic Characteristics of the Respondents on Perceived Ease of Usage (PEOU) and Perceived Usefulness (PU) of EPS

Criteria	Frequency	PEOU Mean Rank	PU Mean Rank
<b>Gender</b>			
Female	89	69.9	72.1
Male	61	83.7	80.5
<b>Educational qualification</b>			
Artisans to Primary Education	27	62.5	59.1
Higher than Primary Education	123	78.4	79.1*
<b>Age</b>			
18 – 40 years	118	75.1	76.3
41 and above	32	77.0	72.5
<b>Occupation</b>			
No formal employment	96	76.9	79.7
Formal employment	54	68.3	68.1
<b>Monthly Income</b>			
Less than N300,000	70	76.9	77.9
N301,000 and above	80	74.3	73.4
<b>Method of kept money</b>			
Not in the Bank	53	65.5*	68.6
In the Bank	97	81	79.3
<b>Ever used EPS to make Payment</b>			
YES	97	85.6	82.4
NO	53	57.1*	62.9*
<b>Preferred mode of Payment</b>			
EPS	111	84.9	84
CASH	39	48.9*	51.3*

In Table 4, perceived ease of use is significantly related by keeping money in the bank, used EPS and preferred EPS as a means of bills payment while perceived usefulness is significantly associated with higher level of education, having used EPS and preferred EPS over cash payment. It is also noteworthy that previous usage of EPS and preference of using

EPS to make payment are significantly related with perceived usefulness and perceived ease of use of the EPS. Contrary to this study, [12] opined that perceived usefulness is significantly noticeable in men than in female and men determined behavioural intention to use new technology.

**Table 5.** Association between Socio-demographic, Economic Characteristics of the Respondents and the Intention to use EPS

Criteria	Frequency	Intend to use EPS	Do not intend to use EPS	OR (Confidence level - 95%)	P-value
<b>Gender</b>					
Female	89	65	24		
Male	61	47	14	1.2 (0.6-2.6)	0.579
<b>Educational qualification</b>					
Artisans to Primary Education	27	17	10		
Higher than Primary Education	123	95	28	0.5 (0.2-1.2)	0.123
<b>Age</b>					
18 - 40 years	118	88	30		
41 and above	32	24	8	1.0 (0.4-2.4)	0.961
<b>Occupation</b>					
No formal employment	96	70	26		
Formal employment	54	42	12	1.3 (0.6-2.8)	0.511
<b>Monthly Income</b>					
Less than N300,000	70	54	16		
N301,000 and above	80	58	22	1.3 (0.6-2.7)	0.514
<b>Method of kept money</b>					
Not in the Bank	53	36	17		
In the Bank	97	76	21	1.7 (0.8-3.6)	0.160
<b>Ever used EPS to make Payment</b>					
YES	97	82	15		
NO	53	30	23	4.2 (1.9-9.1)	<0.001
<b>Preferred mode of Payment</b>					
EPS	111	95	16		
CASH	39	17	22	7.7 (3.4-17.5)	<0.001

Table 5 shows that out of 150 respondents 74% which is about three quarter intended to use EPS. Patients that preferred using EPS for paying their bills were more than 4 times significantly likely to continually use EPS (OR = 4.4, 95% CI = 1.9-9.1,  $p < 0.001$ ) over cash

payment while patients with previous EPS experience were 8 times significantly likely to continue the use of EPS than those without any previous experience (OR = 7.7, 95% CI = 3.4-17.5),  $p < 0.001$ ).

**Table 6.** Pearson’s Correlation Analysis, Variance Inflation Factor (VIF), Cronbach’s Alpha and Kolmogorov-Smirnov Tests to Test for Multicollinearity

Variables	Behavioural intention to use EPS	Perceived ease of use of EPS	Attitude towards EPS	Perceived usefulness of EPS	Mean (SD)	VIF	K-M p-value
Behavioural intention to use EPS	1				3.9 (0.9)		
Perceived ease of use of EPS	0.659**	1			3.7 (0.8)	1.9	0.07
Attitude towards EPS	0.796**	0.610**	1		3.8 (0.9)	2.0	0.12
Perceived usefulness of EPS	0.610**	0.665**	0.645**	1	3.9 (0.8)	2.1	0.32
Cronbach’s alpha: Instrument reliability	0.94	0.83	0.94	0.94			

\*\* shows Correlation is significant at 0.01 level (2-tailed test)

Using Cronbach’s alpha, the above table shows high reliability of the variables used in this study with alpha ranging from 0.83-0.94 ( $\alpha > 8.0$ ). Pearson correlation coefficients used to test intercorrelation among the variables show the highest correlation coefficient of 0.796 (from 0.610 to 0.796) between attitude towards EPS and the behavioural intention to use EPS. Some research stated that to avoid multicollinearity,

the value of the coefficient should be less than 0.8 hence the result is within the accepted value. Same goes for the VIF test for multicollinearity whose value lies within 1 and 10 (range from 1.9–2.1) showing there is no multicollinearity present. The Kolmogorov-Smirnov test showed that the normality assumption was achieved as the test did not indicate any significant difference.

**Table 7.** Multivariate Linear Regression Analysis Result

Variables	Beta ( $\beta$ )	T	p-value	95% Confidence Interval for $\beta$	
				Lower bound	Upper bound
Constant	1.690	1.532	0.128	-0.490	3.869
Attitude towards EPS	0.610	9.471	0	0.482	0.737
Ease of use of EPS	0.280	3.881	0	0.137	0.422
Perceived usefulness of EPS	0.042	0.675	0.501	-0.080	0.163
Adjusted R <sup>2</sup>	0.675				

The multivariate regression showed that the predictors of behavioural intention to use EPS were due to attitude towards EPS ( $\beta = 0.610$ ,  $p < 0.05$ ) and ease of use of EPS ( $\beta = 0.280$ ,  $p < 0.05$ ). The most significant prediction was attitude towards EPS when compared with ease of use of EPS while usefulness of EPS was not a predictor hampering on behavioural intention to use EPS. The attitude towards EPS and ease of

use of EPS have a variation of 67.5% ( $R^2 = 0.675$ ).

### Hypotheses Testing

The below four (4) hypotheses were tested to identify how they predict patient’s intention to use EPS based on Technology Acceptance Model (TAM).

**Table 8.** Tested Hypotheses

<b>Ho (Null Hypothesis)</b>	<b>Test outcome</b>
Perceived ease of use does not influence patient’s intention to use EPS	Ho is rejected. $p < 0.05$
Perceived usefulness does not influence patient’s behavioural intention to use EPS	Ho is accepted. $p < 0.05$
Attitude towards EPS does not impact on patient’s behavioural intention to use EPS	Ho is rejected. $p < 0.05$
Perceived ease of use does not impact patient’s intention to use EPS	Ho is rejected. $p < 0.05$

The result showed that attitude towards electronic payment systems was predicted by perceived ease of use of EPS ( $\beta = 0.610$ ,  $p < 0.01$ ) and perceived ease of use of EPS ( $\beta = 0.645$ ,  $p < 0.01$ ) which explains the variation of  $R^2 = 0.475$  and supported H1 and H2. The behavioural intention to use EPS was predicted by perceived usefulness ( $\beta = 0.610$ ,  $p < 0.01$ ) and attitude towards use of EPS ( $\beta = 0.796$ ,  $p < 0.01$ ), both explained the variation of  $R^2 = 0.649$  hence supported H3 and H4. The perceived usefulness was predicted by the ease of use of EPS ( $\beta = 0.665$ ,  $p < 0.01$ ) and explained the variation of  $R^2 = 0.665$ . Results are shown in Table 3.

## **Summary, Recommendation and Conclusion**

### **Summary of Findings**

This study evaluated the determinants for the adoption and implementation of Electronic Payment System by Good Shepherd Clinic in Nigeria.

It was observed that two third of the patients preferred making payment through EPS than those that had ever used it while one third preferred both cash and EPS. This shows that the tendency to use EPS attracts continuous usage. Patients with higher education adopts EPS more than those with lower education.

In addition, almost three quarter of the patients showed their intention to use EPS while majority showed the behavioural intention to use the electronic payment systems through their preference and usage experience.

Furthermore, the most factors influencing the use of EPS by the patients were perceived ease

of use, attitude towards EPS, perceived usefulness, and behavioural intention to use EPS.

Lastly, the common obstacles that affects EPS as stated by the patients were internet downtime and poor connectivity, inadequate power supply and power fluctuation, poor technological infrastructure.

### **Recommendation**

There were significant factors that affected the adoption and implementation of EPS which needs to be addressed. There should be continuous awareness on the use of electronic payment system, how it works and convenience of payment to enhance the adoption process.

Secondly, awareness and education should be created for patients with low education to encourage usage as perceived usefulness was found higher with patients with higher education.

In addition, the obstacles identified in the study affecting adoption like poor internet connectivity, internet downtime, power fluctuation etc should be addressed to reduce the stress that affects patients from using the system. The hospital should install a reliable power back or high-speed network connectivity devices to reduce the patient’s waiting time when there is power outage or internet fluctuation.

### **Conclusion**

The adoption and implementation of electronic payment systems in Good Shepherd clinic in Nigeria will build confidence, usage, acceptability, ease of payment and make lives a lot brighter among the patients. This will take a

centre stage in the economic development of the country and will lead to a bigger market in the nearest future.

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## Conflict of Interest Statement

I declare that there is no conflict of interest in this study.

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