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https://doi.org/10.67378/hde48373

Research Article

Influence of Business-Aided Technologies on Economic Sustainability among Entrepreneurs in Bwari Area Council, FCT-Abuja, Nigeria

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Received 8 September 2026; Acceptance 7 October 2026; Published 12 October 2026.

Abstract

This study assessed the Influence of Business-Aided Technologies on Economic sustainability among Entrepreneurs in Bwari Area Council, FCT-Abuja. The study had two specific objectives, two research questions and two null hypotheses. The study adopted the quantitative descriptive survey design. The sample comprised of 200 entrepreneurs who were selected using purposive sampling technique. The instrument used for collection of data was a structured questionnaire titled "Influence of Business-Aided Technologies on Economic Sustainability Questionnaire (IBATESQ)". Mean and standard deviation were used to answer the research questions while the null hypotheses were tested using simple regression at 0.05 level of significance. All the hypotheses were rejected because their calculated p-values were less than the level of significance of 0.05. The findings of the study revealed that point of sale (POS) and unstructured supplementary service data (USSD) had significant influence on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja. Based on the findings, it was recommended that Business Educators as well as technologists should create more awareness on the use of business-aided technologies such as POS and USSD; in order to ensure convenient and real time business transactions and Telecommunications Service Providers should improve network coverage in Bwari Area Council in order to reduce transaction failure and delay; associated with POS and USSD.

Key words: Business-Aided Technologies, business educators, economic sustainability, point of sale, unstructured supplementary service data.

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Introduction

Digital technologies increasingly influence how entrepreneurs conduct transactions, reach customers and manage businesses. Digital financial services can improve transaction efficiency, financial access and business sustainability. The World Bank [1] identified digital financial services, entrepreneurship, platforms, infrastructure and skills as important drivers of Nigeria's digital economic transformation. Entrepreneurship also contributes significantly to employment, income generation, innovation and economic development in Nigeria [2]. According to the International Finance Corporation [3], Nigeria has approximately 39.7 million micro, small and medium-sized enterprises (MSMEs), accounting for about 86% of employment and 50% of nominal Gross Domestic Product (GDP). However, these enterprises continue to face financial, infrastructural and operational constraints.

Economic sustainability refers to the ability of a business to maintain operations, generate adequate income, manage costs and remain viable over time. Digital technologies can support these outcomes by improving transactions, customer access and business management [4]. Two important business-aided technologies in Nigeria are Point of Sale (POS) and Unstructured Supplementary Service Data (USSD). POS facilitates electronic payments and other financial transactions and has become increasingly important with Nigeria's transition towards a cashless economy [5]. According to [6], deployed POS terminals increased by 20%, from 2,448,805 in the second half of 2023 to 2,935,765 in the first half of 2024, while transaction volume increased from 4.97 billion to 6.40 billion and transaction value from ₦61.90 trillion to ₦85.91 trillion. Such technologies can support financial inclusion, which contributes to employment generation, poverty reduction and economic development [7].

USSD similarly enables entrepreneurs to conduct financial transactions through mobile-phone short codes without requiring internet access or smartphones, making it particularly useful where digital infrastructure is limited. The increasing adoption of digital financial services demonstrates the relevance of these technologies. According to [8], 45% of Nigerians used digital financial services in 2023, compared with 34% in 2020, while digital payments for goods and services increased from 29% to 40%. Digital financial solutions can help MSMEs receive payments, make disbursements, pay bills and maintain transaction records [9], while digitalisation can reduce transaction costs and improve financial-service efficiency and outreach [10].

Despite these benefits, the contribution of POS and USSD to entrepreneurs' economic sustainability remains uncertain. Network failures, fraud, transaction errors, service charges, inadequate digital skills and preference for cash may limit their effectiveness. Evidence suggests that access to digital payment infrastructure does not necessarily guarantee adoption by small businesses [11]. Similarly, [12] found that POS and USSD transaction volumes had positive but statistically insignificant effects on Nigeria's GDP, indicating the need for investigation at the business level. Therefore, this study investigated the influence of POS and USSD technologies on the economic sustainability of entrepreneurs in Bwari Area Council, FCT-Abuja, Nigeria.

Research Questions

The study was guided by two research questions as follows:

1. What is the influence of point-of-sale (POS) on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja?
2. What is the influence of unstructured supplementary service data (USSD) on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja?

Hypotheses

The study was guided by two research questions as follows:

H_{01}: Point of Sale (POS) has no significant influence on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja.

H_{02}: Unstructured supplementary service data (USSD) has no significant influence on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja.

Results and Discussion

The two research questions earlier raised in the study were answered descriptively using mean. The results of the two research questions are presented in Tables 1 and 2.

Research Question 1: What is the influence of point-of-sale (POS) on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja?

Table 1. Mean analysis showing influence of point-of-sale (POS) on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja.

S/N	Item	Level of Agreement				Mean	Std Dev.	Decision
		SA	A	D	SD			
1	The use of POS terminals enables my business to process customers' payments quickly and efficiently	80	65	30	25	3.00	1.03	Agreed
2	POS services help my business to increase sales by providing customers with convenient payment options	95	65	30	10	3.23	0.88	Agreed
3	The use of POS reduces the risks and costs associated with handling large amounts of cash in my business	80	80	25	15	3.13	0.90	Agreed

4	POS transactions help my business to maintain accurate records of sales and financial transactions	90	60	35	15	3.13	0.96	Agreed
5	POS services contribute to the sustainability of my business	90	55	30	25	3.05	1.05	Agreed
	Average Mean/Standard Deviation					**3.11**	**0.96**	**Agreed**

Source: Field Survey, 2026 Scale Mean = 2.5, n=200

Table 1 shows the mean analysis of influence of point-of-sale (POS) on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja. The mean ratings of items 1, 2, 3, 4 and 5 gave an average mean of 3.11 which was above the cut-off point of 2.5, indicating that point-of-sale (POS) had a high influence on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja. To test whether it was significant or not, it was subjected to a simple regression analysis in hypothesis one.

Research Question 2: What is the influence of unstructured supplementary service data (USSD) on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja?

Table 2. Mean analysis showing influence of unstructured supplementary service data (USSD) on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja.

S/N	Item	Level of Agreement				Mean	Std Dev.	Decision
		SA	A	D	SD			
6	The use of USSD services enables me to conduct business-related financial transactions conveniently	65	115	10	10	3.18	0.74	Agreed
7	USSD services reduce the time and cost involved in accessing banking services for my business	105	45	35	15	3.20	0.98	Agreed
8	The use of USSD enables my business to make and receive payments without requiring internet access	90	60	25	25	3.08	1.04	Agreed
9	The use of USSD helps my business to maintain continuity when access to physical banking services is difficult	110	65	20	5	3.40	0.77	Agreed
10	USSD services contribute to the sustainability of my business	110	45	30	15	3.25	0.97	Agreed
	Average Mean/Standard Deviation					**3.22**	**0.90**	**Agreed**

Source: Field Survey, 2026 Scale Mean = 2.5, n=200

Table 2 shows the mean analysis of influence of unstructured supplementary service data (USSD) on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja. The mean ratings of items 6, 7, 8, 9 and 10 gave an average mean of 3.22 which was above the cut-off point of 2.5, indicating that of unstructured supplementary service data (USSD) had a high influence on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja. To test whether it was significant or not, it was subjected to a simple regression analysis in hypothesis two.

Tests of Null Hypotheses

The null hypotheses were tested at 0.05 level of significance using simple regression. The results of the two null hypotheses are presented in Tables 3 and 4.

H_{01}: Point of Sale (POS) has no significant influence on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja.

Table 3. Regression analysis showing influence of point of sale on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja.

Model	**B**	Std. Error	T	R-cal.	R^2	Adjusted R^2	p-value	Decision
Point of Sale (POS)	0.733	0.023	31.844					
				0.847	0.718	0.717	0.000	Significant
Economic sustainability	6.188	0.493	12.547					

Source: Field Survey, 2026 **Significant at $\alpha = 0.05$, $p < 0.05$; $R^2 = 0.718$

Table 3 shows regression analysis of influence of point of sale on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja. The result revealed that the calculated value of regression was 0.718. The p-value of 0.000 was less than level of significance of 0.05. Since the p-value was less than 0.05 ($p<0.05$), hypothesis 1 was therefore rejected; indicating that point of sale (POS) had significant influence on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja.

H_{02}: Unstructured supplementary service data (USSD) has no significant influence on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja.

Table 4. Regression analysis showing influence of unstructured supplementary service data on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja.

Model	**B**	Std. Error	T	R-cal.	R^2	Adjusted R^2	p-value	Decision
USSD	0.816	0.024	34.129					
				0.863	0.745	0.745	0.000	Significant
Economic sustainability	6.188	0.493	12.547					

Source: Field Survey, 2026 **Significant at $\alpha = 0.05$, $p < 0.05$; $R^2 = 0.745$

Table 4 shows regression analysis of influence of unstructured supplementary service data on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja. The result revealed that the calculated value of regression was 0.745. The p-value of 0.000 was less than level of significance of 0.05. Since the p-value was less than 0.05 (p**<***0.05)*, hypothesis 2 was therefore rejected; indicating that unstructured supplementary service data (USSD) had significant influence on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja.

Discussion of Findings

The findings of null hypothesis one revealed that point of sale (POS) had significant influence on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja, with $R^2 = 0.718$, p-value = 0.000 < 0.05. This finding was in agreement with [13] who investigated the influence of POS terminal services on the performance of SMEs in Lagos State and opined that the use of POS terminals significantly improved business performance by enhancing transaction speed, reducing cash-handling risks, increasing customer convenience, and improving sales volume. However, challenges such as poor network connectivity and unstable electricity supply limited the effective use of POS terminals. In addition, the findings agreed with [14] who investigated Point of Sale and Cashless Policy in Selected Markets with emphasis on the Federal Capital Territory, Abuja and reported that POS services had significantly contributed to the implementation of Nigeria's cashless policy by improving financial inclusion, facilitating faster business transactions, and increasing accessibility to banking services for entrepreneurs and consumers. [14] identified network failures, transaction charges, and occasional cash shortages as major operational challenges.

The findings of null hypothesis two revealed that unstructured supplementary service data (USSD) had significant influence on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja, with $R^2 = 0.745$, p-value = 0.000 < 0.05. The findings agreed with [15] who examined the determinants of USSD mobile banking adoption among bank customers in Katsina State, Nigeria and reported that perceived usefulness, perceived ease of use, efficiency, and affordability significantly

influenced customers' adoption of USSD services, while perceived risk had no significant effect. Therefore, USSD remains a reliable and accessible banking channel, particularly for individuals with limited or no internet access. [15] emphasized further that entrepreneurs who utilized USSD could complete financial transactions more efficiently, thereby reducing transaction costs and improving business operations. In addition, the findings agreed with [16] who investigated the influence of digital financial inclusion on the growth of Small and Medium Enterprises (SMEs) in Lagos and Ogun States and reported that the use of USSD services enabled businesses to receive payments, transfer funds, and access banking services conveniently without requiring smartphones or internet connectivity.

Conclusion

This study has shown that point of sale and unstructured supplementary service data had significant influence on economic sustainability among entrepreneurs in Bwari Area Council, FCT-Abuja. From the findings of this study, the researchers concluded that POS and USSD enabled entrepreneurs as well as their customers to transact business with ease in Bwari Area Council, FCT-Abuja. However, there were challenges of poor network connectivity especially with POS, and high transact charges by financial institutions. Based on the findings of this study, it was recommended that Business Educators as well as technologists should create more awareness on the use of business-aided technologies such as POS and USSD; in order to ensure convenient and real time business transactions and Telecommunications Service Providers should improve network coverage in Bwari Area Council in order to reduce transaction failure and delay; associated with POS and USSD.

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