SMART CAMPUSES AND THEIR ECONOMIC POTENTIALITIES TO NIGERIA: A CASE STUDY OF PUBLIC UNIVERSITIES IN EBONYI STATE

[1]**Ekechi, Jeffrey Chikwado**
09042663424 / 08163116368
ekechijeffrey@ebscoe.edu.ng

[2]**Chima Agwuama Okporie**
chimaagwuamao@gmail.com

[3]**Anikeze Christiana**
get2christyanikeze@gmail.com

Department of Computer Science
Ebonyi State College of Education, Ikwo, Ebonyi State

Abstract

The concept of smart campuses has gained significant attention in recent years, with potential economic benefits for institutions and surrounding communities. This study investigates the economic potentialities of smart campuses in public universities in Ebonyi State, Nigeria. A descriptive survey design was employed, with a stratified random sample of 210 staffers and 90 students from the three public universities in the state, bringing the total population and of the sample size of the study to 300. Six research questions were formulated to guide the study. A questionnaire instrument was used to collect data, which was analyzed using mean and percentage. The study reveals that smart campuses have significant economic potentialities, including job creation, increased investment, and improved infrastructure. However, challenges such as inadequate funding, infrastructure, and technical expertise hinder the implementation of smart campus initiatives. The study concludes that smart campuses can contribute significantly to the economic development of Nigeria, particularly in Ebonyi State. Recommendations include increased funding, infrastructure development, and capacity building for staff and students.

Keywords: Smart Campuses, economic potentialities, public universities, Nigeria, Ebonyi State.

Introduction

Technologically, the 21st century is witnessing great and unprecedented evolution and revolution. According to William, Xavier and Sergio (2019), technological advances modify the immediate future and create new paradigms on human interactivity with things. The integration between technologies and their applications in social environments promote the generation of intelligent environments, which support the automation of processes, remote control, and decision making in their environment. In the view of Zhang, Yip, Lu and Dong (2022), the smart revolution has penetrated in a wide range of applications. Smart campus, as the high-end form of education

systems, deploys cutting-edge information and communication technologies to enhance the effectiveness and efficiency of campus services.

Cormack (2019) asserts that the use of ICT, as in cities, improves educational campuses and the quality of life of the inhabitants. It allows areas of educational control to monitor their students and those involved in university education. University campuses are places where thousands of people study or work daily. The university campuses are in communication with the cities in which they are located on tangible issues related to infrastructure, and on intangible issues such as social relations or innovation (Popoola, Atayero, Badejo, John, Odukoya & Omole, 2018). A smart campus allows a better coexistence between the university population and its surroundings, adequately manages the resources within the campus, and provides favorable places for learning (Zhang et al, 2022).

In the education sector, campus, as the core place to provide educational services, has also been given the concept of ‘‘smart’’, mainly referring to deploying advanced information and communication (ICT) technologies to enhance the effectiveness and efficiency of campus activities (Zhang et al, 2022). In the words of Ikechukwu and Amos (2023), recent advances in information technologies are affecting our education and training approaches, methods, practices, and tools, increasing internet speeds and storage areas together with the advances in cloud computing technologies, making the information available to everybody, from everywhere, at all times.

Transitioning from the fourth industrial revolution to the fifth, Rezaid (2024) observed that we have become so used to the fast pace of innovation that we continue to expect ever more effective and work efficient technological solutions. The development of the smart campus would not be possible without the innovation in technology. Among others, Dong, Zhang, Yip, Swift and Beswick (2020) identified the main technologies supporting the smart campus revolution to include Cloud Computing, Internet of Things (IoT), Augmented Reality (AR), and Artificial Intelligence (AI). These technologies according to them make life more convenient, economical, efficient, secured and sustainable. With their help, so many tasks can be handled simultaneously with minimal effort; by way of optimizing the use of energy, less energy is used to achieve more thereby reducing energy bill; their ability to track and analyze data and using it to deliver better result(s) in the future makes for efficiency and higher productivity; Smart security gadgets such as door sensors, alarm systems, security cameras, and video doorbells help warn building owners about the various threats to their property and also alert law enforcement agencies thereby helping to take protective measures such as, blocking certain pathways or locking rooms; and by way of regulating and automating the use of energy, smart technologies play pivotal role in helping us to optimize or

conserve energy. In the researcher's opinion, all of these, no doubt has many positive economic implications.

Statement of the Problem

Nigeria has maintained status quo as a developing economy in this 21st century; despite the great wave of technological revolutions sweeping across the globe, particularly in the education sector, and the incontrovertible economic boost they offer to the societies that embrace them. The efforts of Nigerian government and other stakeholders in the education sector toward lifting her tertiary education institutions, particularly the public universities to the 21st century technological standard seem not to be enough and as such, have not and may never yield the desired result. This is probably due to the unwillingness and failure of the government and the critical stakeholders to embrace and implement the present-day technological advances (smart technologies) in the University system. The unwillingness could be as a result of the high cost involved, lack of political will (neglect) on the part of the government and/or lack of awareness of the attendant economic fortunes of smart campuses.

The fact that the products (graduates) of public universities in Ebonyi state and Nigeria in general could not receive the needed technological exposure to help the present (deteriorating) traditional economic system that is yearning for digitalization is the reason for the unproductiveness of most Nigerian graduates in the contemporary job/labour market. Consequently, the country resorts and depends on the services of foreign engineers, expatriates and/or technocrats to develop her economy. This ugly situation has really done the country little or no good at all. Hence, the urgent need to proffer solution.

Purpose of the Study

The main purpose of this study was to investigate Smart Campuses and their economic potentialities to Nigeria: A Case Study of Public Universities in Ebonyi State.

Specifically, the study was an attempt to:

i. Find out why public Universities in Ebonyi State should opt for Smart Campuses.
ii. Identify the modern technologies used to implement Smart Campuses in public universities in Ebonyi State.
iii. Explain different ways Smart Campuses impact the economy of Ebonyi State.
iv. Ascertain the extent Smart Campuses can impact the economy of Ebonyi State.
v. Determine the major beneficiaries of Smart Campuses in Ebonyi State.
vi. Identify the various challenges facing the implementation of Smart Campus in public Universities in Ebonyi State, Nigeria.

Research Questions

The following research questions were posed to guide the study.

i. Why should public Universities in Ebonyi State opt for Smart Campuses?
ii. What are the modern technologies that enable the implementation of Smart Campuses in public universities in Ebonyi State?
iii. In what ways do Smart Campuses impact the economy of Ebonyi State?
iv. To what extent can Smart Campuses impact the economy of Ebonyi State?
v. Who are the major beneficiaries of Smart Campuses in Ebonyi State?
vi. What are the challenges facing the implementation of Smart Campuses in public Universities in Ebonyi State?

Conceptual Framework

Concept of Universities

Over time, a university has been defined and redefined as a complex and multifaceted institution. Oxford English Dictionary defines a university as "an institution of higher education and research, which provides academic degrees in various fields" (OED, 2022).

In the view of Altbach (2011), universities are "institutions of higher learning that provide a wide range of academic programs, research opportunities, and community service". Therefore, Scott (2006) asserted that universities are "multiversities" that encompass a range of functions, including teaching, research, and community service. They are also "global institutions" that are increasingly interconnected and interdependent (Marginson, 2007).

A university can be public (state or federal government owned) or private (owned by individual or organization). Meanwhile, this study focuses on public universities. As such, Altbach (2011) defined public university as “an institution of higher education that is funded and controlled by the government. The funding according to Johnstone (2006) can come in the form of appropriations, grants, or subsidies.

Typically, there are several key characteristics of Universities (public and private), such as:

1. Academic programs: Universities offer a range of academic programs, including undergraduate and graduate degrees, in various fields of study (Brennan & Shah, 2000).
2. Research: Universities are expected to engage in research and scholarship, contributing to the advancement of knowledge in various fields (Hattie & Marsh, 1996).
3. Community service: Universities often have a commitment to community service, providing outreach and engagement programs to benefit society (Bok, 2009).

4. Autonomy: Universities typically value autonomy and academic freedom, allowing faculty and students to pursue their academic interests without undue interference (Berube & Berube, 2010).

Concept of Smart Campus

Firstly, a Campus according to Merriam-Webster dictionary, is either "the grounds and buildings of a university, college, or school", "a university, college, or school viewed as an academic, social, or spiritual entity", or "grounds that resemble a campus". While Chagnon-Lessard, Gosselin, Barnabé, Bello-Ochende, Fendt, Goers, Pereira da Silva, Benedikt Schweiger, Simmons, Vandersickel and Zhang (2017) consider Campus as a set of physical infrastructures serving higher education and research.

However, Smart campus as defined by Juice (2023) is a digitally enabled campus that uses Internet of Things (IoT) devices, sensors, and other advanced technologies to collect and analyze data in real time. This data is then used to make informed decisions about campus operations, optimize resource usage, and improve the overall campus experience for students, faculty, and staff. Similarly, Bandara, Jayalath, Rodrigo, Bandaranayake, Maraikar, and Ragel (2016) posit that smart campus is an initiative to use ICT (Information and Communication Technology) within a University Campus to improve the quality and performance of the services, to reduce costs and resource consumption, and to engage more effectively and actively with its members".

Moreover, a smart campus is considered by Min-Allah and Alrashed (2020) as the integration of computing in the cloud and the IoT, that help in managing, teaching, research, and other activities of universities. A smart campus adheres to smart cities concepts and copes with the same challenges

In Pollin, Yigitcanlar, Limb and Washington (2023), smart campus was conceptualized under three major themes: smart city development focused, advanced technology infrastructure focused and enhanced education experience focused.

- ***Smart Development Focused:*** Here, Zaballos, Briones, Massa, Centelles and Caballero (2020) considered smart campus as a small city that acts within the context of smart cities, which offer intelligent services and applications to their citizens to improve their quality of life.
- ***Advanced Technology Infrastructure Focused:*** Smart Campus under this theme is a collaboration of technologies such as big data, cloud computing, IoT, internet and high-performance computing, virtualization, mobile network and social network, sensors and common communication interfaces (Omotayo, Awuzie, Ajayi, Moghayedi and Oyeyipo, 2021).

- ***Enhanced Education Experience Focused:*** On their part, Dong, Zhang and Yip (2020) posited that smart campus is an educational environment that is penetrated with enabling technologies for smart services to enhance educational performance while meeting stakeholders' interests, with broad interactions with other interdisciplinary domains in the smart city context. In the same vein, Chen and Liu (2021) explained that it means integrating information technology into teaching and education to provide a teaching environment with network, data, integration, and intelligence. In short, smart campus to Zhang (2022) is the high-end form of education systems.

The Role of Smart Campuses in Manpower Development

Institutions of higher education remain priceless assets in human capital development. It is a sine quo non to achieving national economic development. Ideally, governments are concerned with economic and social needs of its citizens; and fulfilling this obligation requires institutions with educated, skilled and competent people (Idris, Kolawole, Abdulkadir, Haruna and Sulaiman, 2022).

The university is a good example of tertiary education institutions. According to Min-Allah and Alrashed (2020), the knowledge generation at universities facilitates entrepreneurships and employability of the graduates. In addition to advancement of knowledge in various disciplines, a key performance indicator for the university reputation are the employability of its graduate, research publications, patents, innovation, and entrepreneurship. The smart campus sub-themes coordinate in a seamless fashion to achieve such indicators. Commercializing the ideas generated at campus need a clear business model that focuses on enabling digital economy starting from campus and can be scaled to larger spectrum.

Smart campuses have the potential to revolutionize manpower development by providing students with industry-relevant skills and training, addressing skill gaps and labor market needs (Chen, Wang, Liu, & Zhang, 2020). According to Giones, Raggiotti, Maccani, and Poponi (2020), smart campuses can enhance student employability by providing experiential learning opportunities, industry partnerships, and access to cutting-edge technologies.

Santos, Martínez, Fernández, and Ramos (2020) highlight the importance of smart campuses in workforce preparation, noting that they can provide students with the skills and knowledge required to succeed in the modern workforce. Furthermore, Wang, Chen, Liu, and Hou (2019) argue that smart campuses can play a critical role in addressing skill gaps and labor market needs, particularly in emerging technologies such as AI, data science, and cyber security.

Martínez, Santos, Fernández, and Castillo (2020) emphasize the need for smart campuses to focus on human capital development, highlighting the potential for smart campuses to drive innovation, entrepreneurship, and economic growth through talent development.

Economy Domain of Smart Campuses

In the view of Sciarelli, Landi Turriziani, & Tani (2021), economy domain is concerned with business or capital investment activities that are responsible for the efficient provision of services for the operation of organizations and citizens. Universities are expected to promote entrepreneurial activities, while serving their role in academic. There are four main domains of a Smart Campus: Economy Domain, Society Domain, Environment Domain and Governance Domain. However, of particular interest in this research is the Economy Domain. Economy Domain of Smart Campus has to do with the entrepreneurial capacity of the campus (Pollin et al., 2023). In the same vein, Sciarelli, Landi, Turriziani & Tani (2021) posit that economy domain is concerned with business or capital investment activities that are responsible for the efficient provision of services for the operation of organizations and citizens; and Universities are expected to promote entrepreneurial activities, while serving their role in academic research.

According to Pollin et al., (2023), Economy Domain is reviewed further under four aspects: business opportunity, improved efficiency, innovation ecosystem, and utility cost saving.

- **Business Services:** Business services opportunity is created within the economy domain of smart campus using smart technology. The global agenda of Industry 4.0 has forced universities to transform to meet its requirements by modernizing existing programs, facilities, and infrastructure (Mian, Salah, Ameen, Moiduddin & Alkhalefah, 2020).
- **Improved Efficiency:** Improved efficiency benefits are created with smart technologies where smart campus provides advanced education systems using AI for information and communication to enhance efficiency (Zhang, Yip, Lu, & Dong, 2022). There are opportunities for better experiences to improve campus efficiency through internet-of-things, and community-based digital technology to enhance resource utilization in a university (Debauche, Abdelouahid, Mahmoudi, Moussaoui, Marzak & Manneback, 2020). Smart campus involves the development of a trading platform for optimizing resource allocation, including Blockchain-based applications, to foster efficient production at low-cost in new business approaches (Kuzior, & Sira, 2022). Though it is demonstrated that there are few attempts in smart technology development for improving efficiency, it is, however, worth noting that efforts have begun.

- **Innovation Ecosystem:** Innovative ecosystem comprises two main areas of sustainability and smart campus solutions. Sustainability innovations explored campuses as urban living labs (ULL) for prototyping an open architecture for sustainable evolution (Martínez-Bello, Cruz-Prieto, Güemes-Castorena & Mendoza-Domínguez (2021). These included the following developments: a platform for promoting sustainable campus, smart green campus to reduce carbon footprint using solar photovoltaic (PV) power, mobility for promoting decarbonization and credit trading, and finally, a smart waste bin (Longo, Sahin, Redondi, Bolzan, Bianchini, Maffei (2021).
- **Utility Cost Savings:** Utility cost saving is an economic benefit created by smart campus using smart technology in electrical energy reduction through the development of energy management systems, smart buildings, and smart parking. According to Yee, Yaakob, Elshaikh & Azahar (2020), Smart campus facilitates electrical energy reduction through the development of energy management systems minimizing grid electricity cost. These were achieved through the application of smart technology in green energy production where the hybrid renewable power distribution is supported through IoT.

Methodology

A descriptive survey design was used to carry out the study in three (3) public universities in Ebonyi State including Alex-Ekwueme Federal University Ndufu-Alike Ikwo (Ebonyi Central zone), Ebonyi State University, Abakaliki (Ebonyi North zone) and David Umahi Federal University of Health Sciences, Uburu (Ebonyi South zone). Precisely, the study focused on investigating Smart Campuses and their economic potentialities to Nigeria: a case study of public universities in Ebonyi State.

The data needed for the study was sourced primarily from a population of 300 respondents drawn from the above stated universities - comprising of staff and students. It consisted of a total of 70 staff members and 30 students from each of the universities (i.e. population/sample size of 100 from each of the three universities). A stratified random sampling technique was used to randomly select 70 staffers and 30 students from each of the universities. The staffers were made up of 50 Lecturers and 20 senior Non-Teaching staffers. However, the students were not classified. On the whole, 300 respondents were used for the study.

Questionnaire was employed as the main instrument for data collection in this study. A simple and well designed questionnaire was distributed to the targeted staffers and students of the selected three universities in Ebonyi State to thoroughly investigate smart campuses and their economic potentialities to Nigeria and Ebonyi State in particular. The instrument used in gathering of data was

validated by three experts in Measurement and Evaluation – one each from the three universities under study. The reliability of the instrument was obtained using test re-test method.

Through the questionnaire administered to the respondents, responses obtained formed the primary data for the study. While the secondary sources of data included journals, internet resources, textbooks, lecture notes and magazines. Data obtained from the instrument used were analyzed using simple statistical tools of mean and percentages. Since these tools gave clear and easily comprehensible results from the analysis of the responses collected, they were assumed most suitable the study.

Results

The findings of the study were presented and analyzed in this section in order to provide answer to the research questions posed during the study. Mean scores and percentages were used to compute the 4-point Likert rating scale used in the analysis. The results are presented below:

Table 1: Mean and Percentage scores of responses on why public universities in Ebonyi State should opt for Smart Campuses.
No. of Responses – 300.

Key: Strongly Agreed (SA) = 4, Agreed (A) = 3, Disagreed (D) = 2, Strongly Disagreed (SD) = 1.

S/N	ITEMS	RESPONSES				Mean	Percentage	Decision
		SA	A	D	SD	$\bar{X}$	%	
1.	Smart Campus has the potential to provide students of various public universities in Ebonyi State with personalized learning experiences, real-time feedback and access to digital resources.	157	122	14	07	3.43	85.75	Accepted
2.	It can equip students of public universities in Ebonyi State with modern-day skills as the potential workforce of any society	193	91	09	07	3.57	89.25	Accepted
3.	In Smart Campus settings, processes in public universities in Ebonyi State can be streamlined, costs reduced and resource allocation optimized.	176	103	10	09	3.47	86.75	Accepted

Source: Researcher's field survey, 2025

Table 1 above showed the mean and percentage scores distribution on why public Universities in Ebonyi state should opt for Smart Campuses. The table 1 showcased that all the statements have acceptable mean scores above the midpoint of 2.50 and percentage scores high above 50%, implying that Smart Campuses are worth craving for in public universities in Ebonyi state and by extension, Nigeria owing to their positive outcomes. With the mean score of 3.43 and 85.75% of the

respondents, the table revealed that Smart Campus has the potential to provide students of various public universities in Ebonyi State with personalized learning experiences, real-time feedback and access to digital resources. Equally, the table respectively shows with the mean of 3.57 and 89.25%, 3.47 and 86.75% that smart campus can equip students of public universities in Ebonyi State with modern-day skills as the potential workforce of any society and it also has the potential to streamline processes, reduce cost and optimize resource allocation in public universities in Ebonyi State.

Table 2: Mean and Percentage scores of responses on modern technologies that enable the implementation of Smart Campuses in public universities in Ebonyi State.

No. of Responses – 300.

S/N	ITEMS	RESPONSES				Mean	Percent-age	Decision
		SA	A	D	SD	$\overline{X}$	%	
4.	Wireless communication technologies such as Wi-Fi and cellular networks.	210	70	15	05	3.62	90.5	Accepted
5.	Internet of Things (IoT).	190	85	20	05	3.53	88.25	Accepted
6.	Artificial Intelligence	150	100	30	20	3.27	81.75	Accepted

Sources: Researcher's field survey, 2025

The analysis of the results in table 2 revealed the various technologies that enable a Smart Campus. Statistically, the data in the table 2 showed in their descending order of magnitude as follows: Wireless Communication Technologies has a mean score 3.62 representing 90.5%, while Internet of Things (IoT) and Artificial Intelligence have mean of 3.53 and 3.27 representing 88.25% and 81.75% respectively. This is a strong proof that items in table 2 are truly part of the modern technologies that support the implementation of a smart campus in public universities in Ebonyi state.

Table 3: Mean and Percentage scores of responses on the various ways Smart Campuses impact the economy of Ebonyi State.

No. of Responses – 300.

S/N	ITEMS	RESPONSES				Mean	Percen-tage	Decision
		SA	A	D	SD	$\overline{X}$	%	
7.	Smart campuses have the capacity to create jobs in various sectors including technology, education and research.	205	74	15	06	3.59	89.75	Accepted
8.	They can increase property values in surrounding areas, making them more attractive to businesses, residents and investors.	145	131	14	10	3.37	84.25	Accepted

9.	They can facilitate the development of new industries such as clean tech, biotech and fintech.	197	91	10	02	3.61	90.25	Accepted

Sources: Researcher's field survey, 2025

With all the mean scores of the clusters above the midpoint of 2.50, table 3 made it obvious that Smart Campuses positively impact the economy in various ways. The respondents rated that Smart Campuses facilitate the economy through job creation in different sectors (3.59 and 89.75%), helping to boost local property values (3.37 and 84.25%), and creating new industries and opportunities in tech support and innovation which equally lead to job creation (3.61 and 90.25).

Table 4: Mean and Percentage scores of responses on the extent Smart Campuses can impact the economy of Ebonyi State.

No. of Responses – 300.

S/N	ITEMS	RESPONSES				Mean	Percentage	Decision
		SA	A	D	SD	$\bar{X}$	%	
10.	Smart campuses can impact the economy of Ebonyi State to a very large extent	205	74	15	06	3.59	89.75	Accepted
11.	Smart campuses impact moderately on the economy of Ebonyi	145	131	14	10	3.37	84. 25	Accepted
12.	Smart campuses have very low impact on the economy of the state.	02	10	197	91	1.74	43. 5	Accepted

Source: Researcher's field survey, 2025

Responses of the respondents in table 4 attest to the fact that smart campuses impact greatly on the economy of Ebonyi state. Questionnaire items 10 and 11 were positive, thereby scoring high in mean and percentage (3.59, 89.75%) and (3.37, 84.25%) respectively. While item 12 containing negative questionnaire scored low in mean and percentage (1.74, 43.5%).

Table 5: Mean and Percentage scores of responses on the major beneficiaries of Smart Campuses in Ebonyi State.

No. of Responses – 300.

S/N	ITEMS	RESPONSES				Mean	Percentage	Decision
		SA	A	D	SD	$\bar{X}$	%	
13.	University Administrators benefit greatly from data-driven decision-making, improved resource allocation, and enhanced campus safety and security offered by smart campuses.	193	102	04	01	3.62	90.5	Accepted

14.	Students of public universities gain a lot from access to digital resources, real-time feedback and personalized learning experiences of smart campuses.	202	75	15	08	3,57	89.25	Accepted
15.	Ebonyians in particular and Nigerians at large benefit from the development of innovative solutions, improved education outcomes, and enhanced economic growth and development which smart campuses offer.	172	95	20	13	3.42	85.5	Accepted

Source: Researcher's field survey, 2025

Table 5 above showed that Smart Campus benefits all and sundry, with all the statements scoring statistical means greater than criterion mean point of 2.50. Specifically, the table indicated that University Administrators, Students and indeed all Ebonyians/Nigerians benefit from smart campuses with the mean scores of 3.62, 3.57, 3.42 respectively and percentage scores of 90.5%, 89.25% and 85.5% respectively.

Table 6: Mean and Percentage scores of responses on the challenges of implementing Smart Campuses in public universities in Ebonyi State.

No. of Respondents – 300.

S/N	ITEMS	RESPONSES				Mean	Percen-tage	Decision
		SA	A	D	SD	$\overline{X}$	%	
16.	The absence of clear policy framework is a factor against the implementation of smart campuses in public universities in the state.	250	45	05	00	3.82	95.5	Accepted
17.	Resistance to change by education and university authorities pose serious threat to the implementation of smart campuses in public universities in the state.	100	70	70	60	2.93	73.25	Accepted
18.	Limited funding by the Government is the major constraint to the implementation of smart campuses in public universities in the state.	160	115	15	10	3.42	85.5	Accepted

Source: Researcher's field survey, 2025

Results from table 6 showed the perceived challenges associated with the implementation of Smart Campuses in public universities in Ebonyi state to include lack of well defined policies and guidelines with the mean and percentage scores of 3.82 and 95.5%, resistance to change on the part of education stakeholders and university authorities with the mean and percentage scores of 2.93 and 73.25%, while limited funding by the government has the mean score (3.42) and percentage score 85.5%).

Conclusion

Smart campuses leverage on smart technologies to produce smart graduates/workforce which if inject their knowledge and technological expertise into the economy, will transform it into a smart one (smart economy) and the end-result a smart city. The smart and of course, the enabling technologies of the smart campus do not only make campus life and services (learning, teaching, administration, security, etc) seamless for students, lecturers, faculty, stakeholders and the generality of the campus citizens but also have overall positive impacts on the economy of both the campus and the society at large.

A smart campus, among other things has the potential to attract government funding and other external supports, get connected to global knowledge networks, research collaborations and virtual libraries, streamline processes, reduce cost, optimize resources allocation, and encourage entrepreneurship and innovation. These are beneficial to all and sundry.

Smart Campus initiatives in public universities in Ebonyi State is faced with such challenges as inadequate funding considering the costliness of hardware, software and other infrastructures needed to set up a Smart Campus, lack of well defined policies and guidelines, limited technical skill among faculty, staff and students, and Conservativeness on traditional teaching methods.

Recommendations

The following recommendations were made based on the findings of the study:

1. Considering the enormous gains associated with it and its viability on university education system, public universities in Ebonyi State should crave and opt for smart campuses.
2. The government should set up a smart campus steering committee to develop clear policy framework for smart campus adoption, implementation and development.
3. In addition to government funding, universities willing to adopt smart campus initiatives should explore alternative funding sources such as private sector partnerships, grants, alumni donations, etc.
4. Government and University authorities should consider providing training on innovative teaching and encourage faculty to adopt new pedagogies.
5. Among others, government and other critical stakeholders should be able to address concerns and fears about job security, workload and other potential impacts of smart campus initiatives.

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