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COMPARATIVE ANALYSIS OF AVAILABILITY OF E-ADMINISTRATION PLATFORMS IN PUBLIC AND PRIVATE SECONDARY SCHOOLS IN EBONYI STATE, NIGERIA.

GERMAN Ihihian Oluwatoni , IKEDIUGWU Nkechi Perpetua

Abstract

Emerging administrative challenges combined with global economic downturn in the wake of 21st century, and very recently, the covid-19 pandemic more than any combination of factors, observably, compelled managers to adopt and use more efficient technologies in work places. Educational institutions such as secondary schools are not left out. This study is a comparative analysis of the availability of e-administration platforms in the management of public and private secondary schools in Ebonyi State. Three research questions guided the study and three null hypotheses were tested at 0.05 level of significance. Descriptive Survey research design was used and multistage sampling procedure was used to draw a sample of 120 out of 350 respondents from both public and private secondary schools in the state. Instrument for data collection was a 15-item researcher-developed questionnaire whose reliability of 0.70 was obtained using Kudder-Richardson 21. Data collected was analysed using frequencies and percentages while χ^2 was used to test the null hypotheses at 0.05 level of significance. Findings showed that open source e-administration platform and proprietary e-administration platform were unavailable to neither public secondary school principals nor private secondary school principals, but social media e-administration platform was available to the two categories of principals. Also, there was no significant difference in the open source platforms available to principals in management of public and private secondary schools. It was recommended, among others that the state government should establish a public-private partnership with software development companies so as to make the cost of proprietary software available at more affordable prices thereby encouraging their availability to principals and teachers in public and private secondary schools.

Key words: Comparative analysis. Availability. E-administration

Background

The perennial and emerging administrative challenges combined with global economic downturn in the wake of 21st century, more than any combination of factors, observably, compelled managers to adopt and use more efficient technologies in work places. The management of educational institutions such as secondary schools are not left out of this. In addition, insecurity of school children in Nigeria and the current Covid-19 pandemic have further made adoption of technology an imperative in school management. For example, lockdowns and closure of schools to limit the spread of the disease effectively halted learning activities throughout some countries, including Nigeria. It is unimaginable to think of the man power gap that will be created in national economies if the lockdowns and school closures were to be prolonged for say two years or more without an intervention through school management related technology such as e-administration.

According to Korean Educational Research and Information Service (KERIS, 2016), e-administration involves integration of school-unit systems into education office-unit systems and devising operating infrastructure by replacing old equipments and practices as well as developing education administration programs to meet new policies and various needs. Concisely, e-admin is an information and communication technology (ICT) driven administrative solution that can be used for school management, supervision of instruction, examination administration, reporting, communication and many other functions can be handled

with e-administration. Functionally, with appropriate peripheral devices connected, it can be used to track attendance of students and staff as well as enhance principals' ability to mitigate security risks in school remotely. In fact lots of emerging school management functions and challenges mentioned above can be handle with e-administration.

It is important to add that the use of e-administration platform in school management will ensure effective utilization of resources, non-availability of it will result in situation where scarce resources are held up without commensurate value especially in time of emergencies and uncertainties. After all, socio-temporal indices like time, societal expediencies and location have often influenced educational planning and policies of nations (German, 2019). For example, the unprecedented application of information and communication technology (ICT) to education sector during cataclysmic social change as was the case of the lockdown during the first wave of Covid-19 pandemic ensured continuous flow of school work and unbroken school calendar thereby maximizing budget and time. The reverse is the case of non-availability or use of ICT which resulted to paying school staff while no school work was going on. But, this application is preceded by the availability of such technology.

While the availability and application of the e-administration platform in school management will ensure effective utilization of resources, non-availability of it will result in situation where scarce resources are held up without commensurate value. After all, socio-temporal indices like time, societal

expediencies and location have often influenced educational planning and policies of nations (German, 2019). For example, the unprecedented application of information and communication technology (ICT) to education sector during cataclysmic social change as was the case of the lockdown during the first wave of Covid-19 pandemic ensured continuous flow of school work and unbroken school calendar thereby maximizing budget and time. The reverse is the case of non-availability or use of ICT which resulted to paying school staff while no school work was going on. But, this application is preceded by the availability of such technology.

It matters little as to which school type is in question as the above emerging challenges and routine management functions are not selective. And, while the principals in public secondary schools are constantly required to justify why they need more of taxpayers' funding, their private secondary schools counterparts are faced with termination easy of their appointment if they do less to meet their proprietors' targets. This is so as resources for achieving the schools goals are in short supply in juxtaposition to their demand. This is especially so in Ebonyi State where Nwankwo (2016) that funding gap has plagued implementation of educational programme such as is the case of Universal Basic Education Programme.

This investigation in Ebonyi State is to give insight into availability of e-administration platforms in the management of secondary schools in the educationally less developed states (ELDS) in Nigeria. The state however, is

determined to fast track its educational development since return to civil rule in 1999. For instance, secondary schools in the state in the past decade have improved in performances in external examination and national competitions. This, coupled with the present state administration's effort at innovation in education and provision of infrastructure in the state for the past five years, it becomes important for one to investigate the availability of educational infrastructure such as e-administration platforms in the management of public and private secondary schools in the State.

This study, being a comparative analysis of availability of e-administration in public and private schools gives a holistic view of the various complex factors affecting the availability of e-administration platforms both private secondary schools and public secondary schools. As Schatz and Welle, cited INTRAC (2019) put it, comparative analysis as method of investigation enables the analysis of multiple cases and variables in complex situations. As such, this work compared the availability e-administration platforms in public schools against private secondary schools in 3 broad categories of 15 of instances and with 15 factors under which their similarities or differences were analysed.

Research questions

1. What are the open source e-administration platforms available to principals in public and private secondary schools in Ebonyi State?

2.   What are the proprietary software platforms available to principals in public and private secondary schools in Ebonyi State?

3.   What are the social media platforms available to principals in public and private secondary schools in Ebonyi State?

Hypotheses

The following null hypotheses were formulated to guide the study and they will be tested at 0.05 level of significance.

1.   There will be no significant difference between the mean ratings of principals on open source e-administration platforms available in public and private secondary schools in Ebonyi State.

2.   There will be no significant difference between the mean ratings of principals on proprietary software e-administration platforms available in public and private secondary schools in Ebonyi State.

3.   There will be no significant difference between the mean ratings of principals on the social media e-administration platforms available in public and private of secondary schools in Ebonyi State.

Method

A descriptive survey research design was used. The population was 350 principals, while multistage sampling procedure was used to sample 120 respondents from 6 out of 13 LGAs in the state. A 15-item researcher-developed

questionnaire was used to collect data. Three experts validated the instrument. KR-21 formula was used to establish reliability of the instrument and it yielded a reliability coefficient of 0.70. The data collected was analysed using frequencies and percentages. χ^2 was used to test three hypotheses at 0.05 level of significance.

Results

Research Question 1: What are the open source platforms available to principals in the management of public and private secondary schools in Ebonyi State?

Table 1: Frequencies and percentages on available open source platforms by school type

The open source platforms available to principals in public and private secondary schools in Ebonyi State are:	Public School (N=60)					Private School (N=60)				
	Available		Not Available			Available		Not Available		
	Freq	%	Freq	%	Remark	Freq	%	Freq	%	Remark
1. School Time	14	23.3	46	76.7	NA	17	28.3	43	71.7	NA
2. SchoolTool	16	26.7	44	73.3	NA	21	35.0	39	65.0	NA
3. FeKara	2	3.3	58	96.7	NA	1	1.7	59	98.3	NA
4. Gibbon	-	-	60	100	NA	1	1.7	59	98.3	NA
5. Populli	-	-	60	100	NA	1	1.7	59	98.3	NA

Key: NA= Not available; A= Available

Table 1 shows the frequencies and percentages on the open source platforms available to principals in the management of public and private secondary schools in Ebonyi State. Analysis indicates that all fiveopen source platforms listed are not available in both school type in Ebonyi State. This, notwithstanding, the

percentage availability for four out of the five platforms which are SchoolTime, SchooTool, Gibbon and Populli is more in private schools than public schools.

Research Question 2: What are the proprietary software platforms available to principals in the management of public and private secondary schools in Ebonyi State?

Table 2: Frequencies and percentages on the available proprietary software platforms by school type

The proprietary software platforms available to principals in public and private secondary schools in Ebonyi State are:	Public School (N=60)					Private School (N=60)				
	Available		Not Available			Available		Not Available		
	Freq	%	Freq	%	Remark	Freq	%	Freq	%	Remark
6. Applane,	1	1.7	59	98.3	NA	2	3.3	58	96.7	NA
7. School Software Pro	6	10	54	90	NA	8	13.3	52	86.7	NA
8. EMIS	6	10	54	90	NA	12	20	48	80	NA
9. Magora	-	-	60	100	NA	1	1.7	59	98.3	NA
10. School Cater	1	1.7	59	98.3	NA	5	8.3	55	91.7	NA

Key: NA= Not available; A= Available

The analysis in Table 2 shows the frequencies and percentages on the proprietary software platforms that are available to principals in the management of public and private secondary schools in Ebonyi State.The analysis indicates that the fiveproprietary software platforms listed are not available in public and private secondary schools in Ebonyi State. These platforms are not available in over 50% of the public and private schools. However, the percentage availability for the five platforms are more in private schools compared to public school.

Research Question 3: What are the social media platforms available to principals in the management of public and private secondary schools in Ebonyi State?

Table 3: Frequencies and percentages on the available social media platforms by school type

The social media platforms available to principals in public and private secondary schools in Ebonyi State are:	Public School (N=60)					Private School (N=60)				
	Available		Not Available			Available		Not Available		
	Freq	%	Freq	%	Remark	Freq	%	Freq	%	Remark
11. Facebook	52	86.7	8	13.3	A	31	51.7	29	48.3	A
12. WhatsApp	50	83.3	10	16.7	A	31	51.7	29	48.3	A
13. Messenger	54	90.0	6	10	A	49	81.7	11	18.3	A
14. Linked-in	4	6.7	56	93.3	NA	9	15	51	85	NA
15. Instagram	6	10	54	90	NA	15	25	45	75	NA

Key: NA= Not available; A= Available

The frequencies and percentages on the available social media platforms displayed in Table 3 indicates that the three social media platforms which are: Facebook, WhatsApp and Messenger are available in both public and private schools. The percentage availability of the three social media platforms is more in public schools compared to private schools. The remaining two platforms which are Linked-in and Instagram are not available in public and private schools. However, the percentage availability of the two platforms are more in private schools compared to public schools.

Hypothesis 1. There is no significant difference in the open sourceplatforms available to principals in management of public and private secondary schools in Ebonyi State.

Table 4. Chi-square analysis on the open source platforms available to principals in management of public and private secondary schools

		Public School N=60		Private School N=60		X^2	*P*-value	Remark
		Available	Not Available	Available	Not Available			
1	School Time	14(23.3%)	46(76.7%)	178(28.3%)	43(71.7%)	.39	.53	**NS**
2	SchoolTool	16(26.7%)	44(73.3%)	21(35%)	39(65%)	.97	.32	**NS**
3	FeKara	2(3.3%)	58(96.7%)	1(1.7%)	59(98.3%)	.32	.55	**NS**
4	Gibbon	0(0.0%)	60(100%)	1(1.7%)	59(98.3%)	1.00	.31	**NS**
5	Populli	0(0.0%)	60(100%)	1(1.7%)	59(98.3%)	1.00	.31	**NS**

The analysis in table 9 shows that all the five open source platforms had *P*-values greater than the stipulated 0.05 level of significance. This indicates that there was no significant difference in the open source platforms available to principals in management of public and private secondary schools in Ebonyi State. The first null hypothesis was therefore not rejected.

Hypothesis 2. There is no significant difference in the proprietary software platforms available to principals in management of public and private secondary schools in Ebonyi State.

Table 5. Chi-square analysis on the proprietary software platformsavailable to principals in management of public and private secondary schools

	Public School N=60	Private School N=60

	Available	Not Available	Available	Not Available	X^2	P-value	Remark
6. Applane,	1(1.7%)	59(98.3%)	2(3.3%)	58(96.7%)	.34	.55	**NS**
7. School Software Pro	6(10%)	54(90%)	8(13.3%)	52(86.7%)	.32	.57	**NS**
8. EMIS	6(10%)	54(90%)	12(20%)	48(80%)	2.35	.12	**NS**
9. Magora	0(0.0%)	60(100%)	1(1.7%)	59(98.3%)	1.00	.31	**NS**
10. School Cater	1(1.7%)	59(98.3%)	1(8.3%)	55(91.7%)	2.80	.09	**NS**

The analysis in table 10 shows that all the five proprietary software platforms had *P*-values greater than the stipulated 0.05 level of significance. This shows that there was no significant difference in the proprietary software platforms available to principals in the management of public and private secondary schools in Ebonyi State. The second null hypothesis was therefore not rejected.

Hypothesis 3. There is no significant difference in the social media platforms available to principals in management of public and private secondary schools in Ebonyi State.

Table 6. Chi-square analysis on the social media platforms available to principals in management of public and private secondary schools

	Public School		**Private School**				
	N=60		**N=60**				
	Available	Not Available	Available	Not Available	X^2	P-value	Remark
11. Facebook	52(86.7%)	8(13.3%)	31(51.7%)	29(48.3%)	17.23	.00	**Sig**
12. WhatsApp	50(83.3%)	10(16.7%)	31(51.7%)	29(48.3%)	13.71	.00	**S**

13. Messenger	54(96%)	6(10%)	49(81.7%)	11(18.3%)	1.71	.19	**NS**
14. Linked-in	4(6.7%)	56(93.3%)	9(15%)	51(85%)	2.15	.14	**NS**
15. Instagram	6(10%)	54(90%)	15(25%)	45(75%)	4.67	.03	**S**

Table 11 shows that three of the five social media platforms had *P*-values less than the stipulated 0.05 level of significance. This indicates that there was a significant difference in the social media platforms available to principals in management of public and private secondary schools in Ebonyi State. The third null hypothesis was therefore rejected.

Discussion

Analysis Table 1 indicates that all five open source platforms listed are not available in both school type in Ebonyi State. The finding is surprising given that open sources e-administration platforms are easily available and accessible at almost or no cost.

The finding is supported by Venkatesh et al. (2003) who did not include cost as an independent variable in UTAUT Model. Instead, Venkatesh et al indicated that when the Performance Expectancy is high, Social Factor is compelling and Effort Expectancy low, there will be high Behavioural Intention and it will lead to Use Behaviour.

However, the finding is in contrast with Morpus (2017) who found out that open source platforms are among the most popular and most available software all

over the world and are available for free. It further differs from from Obiadazie and Obijiofor (2016) who found that there is availability of basic ICT platforms in schools, but that there is lack of the technical know-how and application of such tools. One plausible explanation for this disagreement is found in Nwankwo, (2016), who found that funding gap has plagued implementation of educational programme such as is the case of Universal Basic Education Programme in Ebonyi State. This funding gap explains, perhaps, why despite the availability of most open source e-administration platforms at no cost, such were not available to principals in the state.

The finding of the hypothesis shows that there was no significant difference in the open source e-administration platforms available to principals in management of public and private secondary schools in Ebonyi State. This is in contrast with Barua and Viechnicki (2017) and the finding of Omachonu (2019) that private schools, in most items of comparison, perform significantly better than the public schools. The reason for this may be linked to the fact that the state in not very metropolitan as to have made most private schools principals to be very open to, and feel compelled by others, by the virtue of their position, to have and apply of e-administration platforms in management of schools.

The finding on Table 2 indicates that the five proprietary software platforms listed are not available in public and private secondary schools in Ebonyi State. This finding is consistent with the finding of Abdul-rasheed and Bello (2015) that

poor socio-economic background of schools is a major problem to principals' effectiveness. It is further corroborated by the finding of Chigona, Chigona, Kayongo and Kausa (2010) that financial limitation and inadequacy of funds hampers adoption, implementation and domestication of educational programme. So whether private or public, the socio-economic condition of the environment can affect availability of proprietary e-administration platform, especially as these types of software require financial commitment from the users (principals). This finding disagrees with Afshari, Bakar, Luan, Samah and Foo (2008) whose finding indicated that the majority of the respondents who are actually in private schools are more likely to be more deliberate in making technology available more than the public schools' counterparts.

The finding from the hypothesis shows that there was no significant difference in the proprietary e-administration platforms available to principals in management of public and private secondary schools in Ebonyi State. This finding agrees with Dowden (2018) contended that there is now a serious effort speeding up efforts to fast-track public service delivery. It is, however, in contrast with the finding of Kiptalam and Rodrigues (2015), which indicated integration of ICT in the teaching and learning in secondary education is getting more widespread. The reason for this contrast may be linked to the fact that Ebonyi State is not very metropolitan and as such principals do not feel the compelling need to adopt it. Also, in line with Venkatesh et al. (2007) when the degree to which an individual

perceives how important others believe he or she should use the new system as well as Facilitating Conditions are low, there may not be strong enough compelling need for adoption and usage of the platform.

Analysis of Table 3 indicates that the social media platforms e-administration platforms: Facebook, WhatsApp and Messenger are available in both public and private schools. This finding is in agreement with CBS Interactive (2017) indicating that billions of people all over the world have come to rely on social media for various reasons ranging from mere socialising to professional networking and even marketing. However, the percentage availability of the three social media platforms is more in public schools compared to private schools. This difference in the percentage of availability agrees with Afshari, Bakar, Luan, Samah and Foo (2008) whose finding indicated that the majority of the respondents who are actually in private schools are more likely to be more deliberate in making technology available more than the public schools' counterparts.

The finding from the hypothesis shows that there was a significant difference in the social media platforms available to principals in management of public and private secondary schools in Ebonyi State. This finding means that although social medial platforms are available to both schools, much of the availability is observed in the private schools. Corroborating this, Ogal (2014) noted that a comparative analysis of the curriculum management and performance

of public and private secondary schools indicated that almost on all indices of comparison, private secondary schools excelled the public schools counterparts. It is further supported by Awan and Zia (2015) who noted that private schools make available infrastructure that can enhance school management. Public secondary schools, on the other hand may have to get layers of approval from different levels of authorities

The reason for this significant difference between public and private secondary schools might be connected with the fact that decision to change, use and adopt a new approach is often faster within private enterprises which private schools belong.

Conclusion

In the investigation, application of each of the e-administration platforms was compared between the public schools principals and their private school counterparts. Given the mean scores for decision, it was generally found from the means of means of each cluster that application of e-administration platform in school management in both school type is low. However the private schools, in all items compared, applied all e-administration platforms in school management. Comparatively, this difference might be linked to a generally agreed notion that private institutions, more than the public institutions, are receptive to changes and are likely to face fewer impediments towards making technology available to staff,

in this case, application of e-administration in the management of secondary schools.

Recommendations

Based on the findings of this study, it is recommended that:

1. ICT companies should enlighten public and private secondary school principals, parents, proprietors and government on this, the need to adopt and use e-administration platform in school management. This will most likely lead to large-scale adoption and application while bringing consequential increase in turnover for such ICT companies

1. The state government should establish a public-private partnership with software development companies so as to make the cost of proprietary software available at more affordable prices thereby encouraging their availability to principals and teachers in public and private secondary schools.

2. Principals, the state government and private school owners should sustain their availability to both public and private schools respectively. The Parents Teachers Association (PTA) can help by donating the ICT peripheral devices that can be used to expand this already in existing capacity and opportunity.

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