

# Application of E-Administration Platforms in the Management of Public and Private Secondary Schools in Ebonyi State: A Comparative Analysis.

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## **Abstract**

*Emerging administrative challenges combined with global economic downturn in the wake of 21<sup>st</sup> century are compelling school management to rethink means of performing their traditional and emerging functions in order to achieve efficient schools administration. Principals of public and private schools are all caught up in this need to look for more efficient ways of managing their respective secondary schools. This work aims to investigate and compare how the management of public and private schools leverage e-administration in context of challenges and demand placed on them. Three research questions guided this comparative study and three null hypotheses were tested at 0.05 level of significance. 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. Cronbach's Alpha was used to establish the reliability and the reliability coefficient was 0.89. The data collected was analysed using mean and SD. Z-test was used to test the three hypotheses at 0.05 level of significance. The finding that the extent to which principals of both school types applied open source e-administration platforms in school management is low, showed there is low level of adoption of technology and consequently low level of effectiveness in managing secondary schools in the state.*

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**Key words:** Application. Comparative analysis. E-administration. Management.

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## **Introduction**

The school management functions performed by principals, without prejudice to traditional functions such as planning, organizing, staffing, directing, coordinating and budgeting, are contingent upon emerging social changes. Such social changes compelling changes and expansion in management functions are in form of social upheavals, needs, prospects and futures (German, 2019). Added to these are emerging functions to modern school managers which Hallinger (2011) noted are expanding over the years. For example, there more pressure on principal to play key role in "safe school project" as a result of deteriorating security of school children where children are regularly abducted and even killed. These expansion and varying of school management functions come with the need to seek out more effective technological tools to aid the principals.

Hence, to more effectively perform the aforementioned traditional and emerging school management functions, principals, who according to Ezeugbor and Anozie (2019) are

foremost heads of administration in secondary schools, have in recent years ensured modern technologies are available and are applied in the management of schools. Often, these technologies are more versatile, multi-functional and round the clock technological innovations. Electronic administration, also known as e-administration is one of such current multifunctional technological innovations.

E-admin is an ICT driven administrative solution that can be applied a variety of school management functions. According to Korean Educational Research and Information Service (KERIS, 2016), it involves integration of school-unit systems into education office-unit systems and devising operating infrastructure by replacing old equipment's and practices as well as developing education administration programs to meet new policies and various needs. This means that e-admin provides solution to some old and new functions which school managers face.

E-administration provides electronic control that allows instant control with the help of the internal network of the educational institution. This increases the ability of electronic controls to provide the possibility of follow-ups on various operations, temporary decisions and correction of errors. In other words, it creates technological leadership where the manager, in this case, the principal, is virtually everywhere in control. This is important because controlling function is to administrators or managers such as principals, a tool that put them in the driver's seat in school management. E-admin helps them to monitor and evaluate the school management processes in relation to the expected goals. It is through this that the management objectives are tracked, assessed and evaluated to be sure staffs are moving in the direction of such stated goals. It is what makes the principal to know whether results are matching expectations and if there is deviation, then a need to change and the capacity to effect such.

While application of e-administration to school management is very helpful in examination administration, reporting, communication, marketing, fundraising, etc, Holland and Powel (2011) as well as Straub (2017) indicated that application of technology should be directed towards achieving various purposes. This is important for justification and to measure impact. As such, by expanding the scope of the e-administration platform in use and attaching some related peripherals such as cameras and biometric data capture machine, for example, attendance and punctuality of staff and students can be taken. This way, the movements around the school can be detected and action taken to mitigate by application of e-administration. It is becoming imperative that such technology be used to ensure continuity of schooling and school management processes during social emergency such as Covid 19. Some unexpected unpleasant fallout of incestuous relationship and teenage pregnancies, spike in crime rate reported during the protracted lock down of Covid-19 could have been minimized if not totally avoided had e-administration platforms and associated technologies been employed to keep educational sector running. Had e-administration platforms been employed massively, it would have ensured continuous flow of school work and unbroken school calendar thereby maximizing budget and time for both the public secondary schools and private secondary schools alike.

Thus, Post covid-19 Ebonyi State, which is one of the educationally less developed states in Nigeria but which recently has shown visible innovation in educational policies, cannot afford to ignore the application of e-administration platforms in the management of its public and private secondary schools. After all, socio-temporal indices like time, societal expediencies such as the indefinite lockdown of 2020 as well as the location have often influenced educational planning and policies of nations (German, 2019).

The contribution and imperative of e-administration can be better appreciated when we know that the similar effort which started in 2001 in Europe has made such progress that nearly half of government services have become fully online by 2014. According to Ana-

Maria et al. (2014), apart from increasing digitalization, 2014 and the following years witnessed an era of developing the skills of citizens and entrepreneurs in applying e-administration as well as increasing e-administration services efficiency and establishing pan-European operation. The efficiency in services are not only similar in comparative analysis, they cut across public and private sectors.

Thus, comparative analysis of the application of e-administration platform in management of secondary schools is important as it aims to ascertain how variables under consideration compare with each and one another on the same term. Often, a comparative study such as the present study offers lucid and yes concise explanation of differences as well as the explanation of similarities of the item or variables under consideration. Pattyn, Molenveld and Befani (2019) on their part, noted that in a comparative analysis, for each outcome to explain, a separate set of condition is to be selected and a separate analysis has to be done for both the presence and the absence of the outcome. Azarian (2011), and Awan and Zia (2015) noted that this comparison seeks to establish a principle of variation in character or intensity of a phenomenon by examining systematic differences between instances. As such, this study compared variation in character and intensity of variables by systematically examining the differences in the application of the various e-administration platforms investigated between the moderator variable– school type–public secondary schools and private secondary schools.

### Research questions

1. To what extent do principals apply open source software platform in the management of public and private secondary schools in Ebonyi State?
2. To what extent do principals apply proprietary software platforms in the management of public and private secondary schools in Ebonyi State?
3. To what extent do principals apply social media platforms in the management of public and private secondary schools in Ebonyi State?

### Hypotheses

1. There is no significant difference between the mean ratings of principals on the extent to which they apply open source e-administration software platform in the management of public and private secondary schools in Ebonyi State.
2. There is no significant difference between the mean ratings of principals on the extent to which they apply proprietary software e-administration platforms in the management of public and private secondary schools in Ebonyi State.
3. There is no significant difference between the mean ratings of principals on the extent to which they apply social media e-administration platforms in the management of public and private 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. Cronbach's Alpha was used to establish the reliability and the reliability coefficient was 0.89 $\alpha$ . The data collected was analysed using mean and SD. Z-test was used to test the three hypotheses at 0.05 level of significance.

### Results

**Research Question 1:** To what extent do principals apply open source software platforms in management of public and private secondary schools in Ebonyi State?

**Table 1: Mean ratings on the extent to which principals apply open source software platforms in management by school type**

The extent principals apply open source software platforms in management of public and private secondary schools in Ebonyi State.	Public School (N=60)		Private School (N=60)		Mean	SD	Remark
	Mean	SD	Mean	SD			
Items							
1. I use SchoolTime for managing this school.	2.43	1.41	2.50	1.33	2.50	1.33	High Extent
2. I use SchoolTool for school management.	1.83	1.17	2.32	1.31	2.32	1.31	Low Extent
3. I use FeKara in managing my school.	1.23	.43	1.33	.51	1.33	.51	Low Extent
4. I use Gibbon in managing this school.	1.23	.43	1.33	.51	1.33	.51	Low Extent
5. I use Populli for school management purposes.	1.27	.45	1.33	.54	1.33	.54	Low Extent
Mean of Means	1.60	.78	1.76	.84	1.76	.84	Low Extent

The analysis in Table 5 shows the mean of means and standard deviation scores of 1.60 and 0.78 for principals of public schools while that of private schools had 1.76 and 0.84. This shows that the extent to which principals of both schools apply open source software platforms in school management is low. The analysis of the items shows that principals of public schools apply the five listed open source software platforms to a low extent, indicated by their mean ratings on the five items which ranged from 1.23 to 2.43. However, principals of private schools apply only one open source software platform (item 1, mean=2.50) to a high extent. The remaining four platforms (item, 2, 3, 4 and 5) are applied to a low extent as shown by their mean ratings which ranged from 1.33 to 2.32.

**Research Question 2:** To what extent do principals apply proprietary software platforms in the management of public and private secondary schools in Ebonyi State?

**Table 2: Mean ratings on the extent to which principals apply proprietary software platforms by school type**

Items	Public School (N=60)		Remark	Private School (N=60)		Remark
	Mean	SD		Mean	SD	
6. I use Applane in managing my school.	1.33	.48	Low Extent	1.42	.65	Low Extent
7. I use School Software Pro in managing school.	1.43	.70	Low Extent	1.62	.94	Low Extent
8. I use EMIS in managing school.	1.52	.79	Low Extent	1.58	.93	Low Extent
9. I use Magora in managing my school.	1.32	.50	Low Extent	1.38	.58	Low Extent
10. I use School Cater for school management.	1.28	.56	Low Extent	1.25	.47	Low Extent
Mean of Means	1.38	.61	Low Extent	1.45	.71	Low Extent

The analysis in Table 7 shows the mean of means and standard deviation scores of 1.38 and 0.61 for principals of public schools while that of private schools had 1.45 and 0.71. This shows that the extent to which principals of public and private secondary schools in Ebonyi State apply open source software platforms in school management is low. The analysis of the items shows that principals of public and private schools apply the five listed open source software platforms to a low extent. This is shown by their mean ratings on the five items which ranged from 1.28 to 1.52 for public school principals and from 1.25 to 1.62 for private school principals.

**Research Question 3:** To what extent do principals apply social media platforms in management of public and private secondary schools in Ebonyi State?

**Table 3: Mean ratings on the extent to which principals apply social media platforms by school type**

Items	Public School (N=60)		Private School (N=60)		Mean	SD	Remark
	Mean	SD	Mean	SD			
<b>The extent principals apply social media platforms in management of public and private secondary schools in Ebonyi State.</b>							
11. I apply Facebook for school management purposes.	1.62	.80	2.03	1.16			Low Extent
12. As a principal, I use WhatsApp to organize PTA meetings.	1.68	.95	2.17	1.14			Low Extent
13. I use Messenger for school related communication.	1.45	.77	1.83	1.01			Low Extent
14. I use Linked-in to connect people that school management resource persons.	1.45	.62	1.80	1.01			Low Extent
15. I use Tweeter for school related communication.	1.28	.49	1.80	1.07			Low Extent
Mean of Means	1.50	.73	1.93	1.08			Low Extent

Table 7 shows the mean of means and standard deviation scores of 1.50 and 0.73 for public schools while private school principals had 1.93 and 1.08. These means were less than 2.50 indicating that the extent to which principals of public and private secondary schools in Ebonyi State apply social media platforms is low. The item by item analysis shows that principals of public and private schools apply the five listed social media platforms to a low extent, with mean ranging from 1.28 to 1.68 for public school principals and from 1.80 to 2.17 for their counterparts in private schools.

**Hypothesis 1:** There is no significant difference between the mean ratings of public and private school principals on the extent to which they apply open source software platform in the management of secondary schools in Ebonyi State.

**Table 4: t-test of significant difference in the mean ratings public and private secondary school principals' application of open source software platform**

Item Description	Public School N=60		Private School N=60		t-cal	P-value	df=118	Remark
	Mean	SD	Mean	SD				
1 I use SchoolTime for managing this school.	2.43	1.41	2.50	1.33	-.27	.79		Not-Sig
2 I use SchoolTool for school management.	1.83	1.17	2.32	1.31	-2.14	.03		Sig
3 I use FeKara in managing my school.	1.23	.43	1.33	.51	-1.17	.24		Not Sig
4 I use Gibbon in managing this school.	1.23	.43	1.33	.51	-1.17	.24		Not-Sig
5 I use Populli for school management purposes.	1.27	.45	1.33	.54	-.74	.46		NotSig

As displayed in Table 13, the *P*-values associated with the calculated *t*-values in four of the five items were greater than the stipulated 0.05 level of significance. This shows that there was no significant difference in the mean ratings public and private school on the extent of application of open source software platform in management of secondary schools in Ebonyi State. The 5<sup>th</sup> null hypothesis was therefore not rejected.

**Hypothesis 2:** There is no significant difference between the mean ratings of public and private school principals on the extent to which they apply proprietary software platforms in management of secondary school in Ebonyi State.

**Table 5: t-test of significant difference in the mean ratings of public and private secondary school principals' application of proprietary software platforms**

	Item Description	Public School N=60		Private School N=60		t-cal	P-value	df=118 Remark
		Mean	SD	Mean	SD			
6	I use Applane in managing my school.	1.33	.48	1.42	.65	-.81	.42	Not-Sig
7	I use School Software Pro in managing school.	1.43	.70	1.62	.94	-1.21	.22	Not-Sig
8	I use EMIS in managing school.	1.52	.79	1.58	.93	-.42	.67	Not Sig
9	I use Magora in managing my school.	1.32	.50	1.38	.58	-.67	.50	Not-Sig
10	I use School Cater for school management.	1.28	.56	1.25	.47	-.35	.72	Not Sig

Table 14 shows that the *P*-values associated with the calculated *t*-values in all the five items were greater than the stipulated 0.05 level of significance. This indicates that there was no significant difference between the mean ratings of public and private school principals on the extent to which they apply proprietary software platforms in the management of secondary schools in Ebonyi State. The null hypothesis was therefore not rejected.

**Hypothesis 3:** There is no significant difference between the mean ratings of public and private school principals on the extent to which they apply social media platforms in management of secondary school in Ebonyi State.

**Table 6: t-test of significant difference in the mean ratings of public and private secondary school principals' application of social media platforms**

Item Description	Public School N=60		Private School N=60		t-cal	P-value	df=118	Remark
	Mean	SD	Mean	SD				
11 I apply Facebook for school management purposes.	1.62	.80	2.03	1.16	-2.28	.02		Sig
12 As a principal, I use WhatsApp to organize PTA meetings.	1.68	.95	2.17	1.14	-2.53	.01		Sig
13 I use Messenger for school related communication.	1.45	.77	1.83	1.01	-2.34	.02		Sig
14 I use Linked-in to connect people that school management resource persons.	1.45	.62	1.80	1.01	-2.29	.02		Sig
15 I use Tweeter for school related communication.	1.28	.49	1.80	1.07	-3.40	.00		Sig

The analysis displayed in Table 15 shows that the *P*-values associated with the calculated *t*-values in all the five items were less than the stipulated 0.05 level of significance. This indicates that there was a significant difference between the mean ratings of public and private school principals on the extent to which they apply social media platforms in management of secondary school in Ebonyi State. The null hypothesis was therefore rejected.

## Discussion

### The extent to which principals apply open source software platform in management of public and private secondary schools in Ebonyi State.

The finding in Table 5 shows that the extent to which principals of both schools apply open source software platforms in school management is low even though it higher in private school than public schools. But, open source software being free to be to obtained and applied are expected to be common to all principal who use e-administration platforms in school management. The finding above is worrying given that open sources software e-administration are more easily available for application to school management. This view is supported by Morpus (2017) who noted that open source platforms are available for free for application by prospective users. Being free and more available than the proprietary software it was expected that most principal would have applied these software which, according to Morpus, are the most popular and used in the world.

The possible reason for non-availability could be insufficient information on ease-of-use as well as Usefulness of e-administration platforms. This submission is supported by Venkatesh et al. (2003), who, in explanation of the interactions between various variables in Technology Adoption Model (TAM), pointed out that once there is perceived ease-of-use and perceive usefulness of a technology there is likely intention to use and eventual application of such technology.

Finding from the hypothesis shows that there was no significant difference in the mean ratings of public and private school on the extent of application of open source e-administration platform in management of secondary schools in Ebonyi State. This finding is consistent with a similar finding by Chigona et al. (2010) in a similar economically disadvantaged part of South Africa. The finding indicated that people are often less aware of



technological possibilities in area that are economically disadvantaged. The reason of insufficient awareness is the plausible reason that can be adduced for the no significant difference in the extent of application of open source e-administration platform by the principals of public and privates secondary school observed in the state. And this needs to be addressed urgently because Assaraf (2015) noted that the world is now connected into a global village requiring people to use digital and electronic tools which he called E-Systems. No more can a people or nation pretend to be isolated and indifferent. In fact, the consequence of any principal's indifference to reality of E-Systems approximates to his/her loss of capacity and relevance a few decades from now in the 21<sup>st</sup> century.

### **The extent to which principals apply proprietary software platforms in the management of public and private secondary schools in Ebonyi State.**

The findings in Table 6 show that the extent to which principals of public and private secondary schools in Ebonyi State apply proprietary software platforms in school management, even though it higher in private school than public schools, is low considering the mean of means. The findings also show that principals of public and private schools apply the five listed open source software platforms to a low extent. This finding is in contrast with the finding Awan and Zia (2015) that private schools possess several characteristics for making private schooling more attractive to parents compared to government schools. Some of these include better physical infrastructure such as e-admin software, better test scores resulting from qualitative instructions, and lower rates of teacher absenteeism.

Further, the finding indicated that out that not all principals of schools which have the ICTs have domesticated the technologies. In other words, most educators in the schools are economically challenged and cannot afford a computer at home. This contrast, explains the similarity in an observation by Nwankwo (2016) that funding and measure to increase financial resources to Ebonyi State is a challenge to education in the state and another observation by Abdulrasheed and Bello (2015) that poor socio-economic background of schools as a major problem to principals' ineffectiveness.

Finding from the hypothesis indicates that the difference between the mean ratings of public and private school principals on the extent to which they apply proprietary software platforms in the management of secondary schools in Ebonyi State was not significant. This finding is validated by Venkatesh et al. (2003) and Lai (2017) which find out that where social factor requiring the principal to apply technology is low, it leads to a situation where people may be compelled to do otherwise. To this end, where there is no compelling social factor on the principals who are living in economically disadvantaged state, they will be reluctant in making e-administration platforms available to and applying them in management of schools. This could be the case irrespective of whether the schools are public or private.

### **The extent to which principals apply social media platforms in management of public and private secondary schools in Ebonyi State.**

The findings from the study in Table 7 indicated that social media social media e-administration platform is being applied to school management by principals in secondary schools. However, while principals in the public secondary schools apply in to a low extent, their counterparts in private secondary schools apply Facebook, WhatsApp and Messenger to their advantage. It is interesting to observe that the principals of private secondary school significantly use the leading social media software for their e-admin platforms. Corroborating this assertion, Durmick (2016) and Mehra (2017) noted that those using social media for management, administration and networking functions in the world as today would possibly be using Facebook, WhatsApp, Messenger, Linked-in, Google+ Twitter, Instagram, etc. This

may have come from the principals' knowledge that most customers in the 21<sup>st</sup> century are connected to social media platforms. This is because open source software and these social media apps can be used and applied at no cost, over four billion people could be seen on these platforms and at least one billion people visit daily globally. Principals use this to influence the consumption decision of many prospective parents and thereby increased patronage and profitability especially in private schools. To this end, these marketing and networking tools become very important keys to modern principals in improving the lots of their schools they manage.

The finding of 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. The reason for this significant difference is similar to the one adduced earlier for their availability of the social media platforms in question. And this is the fact that decision to change, use and adopt a new approach is faster with private own business. Application of social media in school management is one of such new changes in modern times and private schools belong to privately owned organization this is similarly found by Awan and Zia (2015) who found out that, private schools are more easily receptive to improvement generally including technology adoption. Change, such as application of social media platform or any e-administration for that matter, is slower in public secondary schools as principal may have to get approvals from different levels of authorities before they can implement what they know is good for their schools. Sometime this might result in frustrations which could lead to total abandonment of such change like as application of e-admin in school management.

## **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. The finding that the extent to which principals of both school types applied open source e-administration platforms in school management is low, showed there is low level of adoption of technology and consequently low level of effectiveness in managing secondary schools in the state.

However the private schools, in all items compared, applied all e-administration platforms in school management. Comparatively, this difference might be linked with a generally agreed notion that private institutions, more than the public institutions, are receptive to changes and are likely to face fewer impediments in implementation of technology, in this case, application of e-administration in the management of secondary schools.

## **Recommendations**

Considering the findings of the study, the following are recommended:

1. Software developers should step up the promotion of e-administration and associated peripheral devices with the view of making critical stakeholders in education apply the technology to school management.
2. The state government and the software development should establish a public-private partnership with the view of making proprietary software available at more affordable prices thereby encouraging its use by both public secondary schools and private secondary schools. Having done this, government should demand more efficiency and increase indices for accountability to justify the investment in such technologies.

3. Commissioner of Education, Head of inspectorate service, should through meetings and memos make the principals and National Association of Proprietors of Private Schools (NAPPS) aware that social media can be applied in the management of both public and private schools.

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