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AN IMAGE STEGANOGRAPHY METHOD USING HYBRID LSB-MSB FOR HIDING TEXT IN DIGITAL IMAGES.

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Abstract The LSB (Least Significant Bit) and MSB (Most Significant Bit) are information hiding steganography algorithms used in digital images both having disadvantages. This paper projected a hybrid approach and associated its effectiveness with the aforementioned algorithms. The combination of Least Significant Bit (LSB) and Most Significant Bit (MSB) algorithms is known as Hybrid LSB-MSB algorithm. LSB and MSB are information hiding steganography algorithms used in digital images for hiding information specifically text in this work. The Least Significant Bit (LSB) and Most Significant Bit (MSB) algorithms were joined to come up with the projected algorithm. The proposed method takes one bit each of least significant bit and the most significant bit making two bits of the cover images and swapped it with a secret message which was implemented in Netbeans IDE. We use Mean-Squared Error (MSE), Peak Signal-to-Noise Ratio (PSNR) and the encoding time for performance evaluation between the projected algorithm, LSB and MSB after embedding the secret message in to digital images. The Hybrid approach formed a stego-image with smallest amount falsification in image quality than MSB method autonomous of the Mother Nature of data that was concealed. However, LSB algorithm made the finest stego-image quality. Huge cover images however made the hybrid procedure's quality better upgraded. The hybrid approach is more secured with smaller time of image and text coding. Therefore, concession occurs between the encoding time and the quality of stego-image as proven in this paper.

KEYWORDS

Cover images, The Least Significant Bit (LSB), Most Significant Bit (MSB), Steganography.

1. INTRODUCTION

Steganography is the skill and science of hiding delicate info in means that prevent revealing. The purpose of steganography is to deliver a message in such a way that not one person apart from the sender and projected recipient suspects the presence of the message. These messages are transported through cover objects such as text, audio, images and protocols. The top-secret message could be a plaintext, cipher text or images. The embedding of the message into a cover object outcome in to a stego-image. Images are typically used as shield objects in steganography [2,3]

The method of Image steganography is basically classified into two categories based on the working domain: Spatial domain where the pixel value is directly modified for data hiding. Images in this domain are represented as rectangular grid of pixels or points of color where the human perception does not observe the image as a grid. LSB and MSB based hiding strategies are most commonly used in this approach. Frequency domain where the Images that are in the domain of transform space are more robust in terms of some image processing manipulation and lossy compression and less prone to attacks Discrete cosine transform based steganography and Discrete wavelet transform based steganography are most commonly used in this approach.

Parameters such as imperceptibility, robustness and capacity can be used to measure the performance of a steganography technique. Imperceptibility is the capacity to avoid recognition, i.e. the failure to define the presence of a concealed message. This makes it a significant prerequisite in steganography. Robustness is to how fine a steganography method can battle the withdrawal of hidden data. It measures the capability of the steganography method to persist the efforts of removing the hidden information. Such challenges include, image manipulation (like cropping or rotating), data compression and image filtering. Payload Capacity signifies the extreme amount of information that can be securely embedded and retrieved in a work without being statistically noticeable. When likened with watermarking that requires embedding only a minor amount of right information, Steganography requires adequate embedding capability.

Least Significant Bit (LSB) Replacement is an embedding method based on the fact that the least significant bits in an image can be thought of as random noise, and consequently they become not responsive to any change on the image. The secret message is hidden by altering least significant bit in a certain layer of the image file. This change is so slight that the human eye may not notice it. [1] reported that the Most significant bit (MSB) is highest bit in a series of numbers in binary. e.g in the binary number : 11001100, the most significant bit is far left 1. In the MSB technique the secret message is embedded in the most significant bit of the pixel of the image.



The Hybrid LSB - MSB algorithm is a combination of the aforementioned algorithms. It works by combining the two techniques, LSB and MSB into a hybrid algorithm that embeds the top-secret message bits into the least significant bit of and the most significant bit of the cover image.

The aim of this research work is to make comparison in terms of image quality of Least Significant Bit (LSB), Most significant bit (MSB) and the proposed Hybrid LSB-MSB Steganography procedures using digital images. The objectives of this research are:

1. To design a hybrid algorithm that encrypt top-secret message bits into the least significant bit and most significant bit of the cover or concealment image.
2. To implement the Hybrid algorithm having encoding interface and the decoding interface for hiding and recovering purposes respectively.
3. To evaluate the proposed algorithm and compare it with existing results using dissimilar image layouts and the superiority of image with increase in file magnitude.

The continuing part of the paper is structured as follows. Subdivision II works review on current image steganography methods and subdivision III presents the projected image embedding method. subdivision IV the experimental outcomes & conversation are shown and conclusions in subdivision .

2. RELATED WORKS

There have been many studies of information hiding in digital image by means of steganography method. Kanzariya and Nimavat [4] associated various image steganography techniques. The purposes were to identify the necessities of a good steganography algorithm and to determine steganography techniques that are appropriate for dissimilar applications. In this work, some principles for imperceptibility of an algorithm were suggested.

In Warkentin et al. [6] suggested algorithm, the knowledge was to skin data inside the audio pictorial files. El-Emam's [7] proposed steganography procedure based on hiding a huge volume of data file over a coloured bitmap image. In his work, he sieved and segmented the image by using bits standby on the appropriate pixels. A concept defined by main cases with their sub cases for each byte in one pixel was used to choose these pixels indiscriminately rather than successively. This concept was both visual and arithmetical. The result of this idea was that 16 main cases with their sub cases enclosed all aspects of the input data into color bitmap image, conclusively a large amount of data that occupies 75% of the image size can be implanted efficiently and the output will be of high superiority.

Chen et al. [8] improved a technique planned by Chang et al. [9] via the side match method. In this method, data was concealed in the edge quotas of the image. The image quality was improved while preserving the same embedding capability because the human eyes could hardly see dissimilarities in the edge portion. Wu and Tsai [10] proposed an algorithm using pixel-value differencing which portioned the original image into non-touching blocks of two successive pixels. A different value was calculated from the values of the two pixels in each block. However, in this method the alteration is never out of the range interval. The result produced by this method is more unrevealed than those yielded by simple least significant bit replacement method. The secret message that was embedded can be dig out from the resulting stego-image without making reference to the method of the original cover image. The security of the method was shown using double statistics attack. Rohit and Tarun [1] compared LSB and MSB based steganography in gray-scale images. It was concluded that the resulting stego-image using LSB shows no distortion when compared with the original image. The performance of LSB was better than that of MSB.

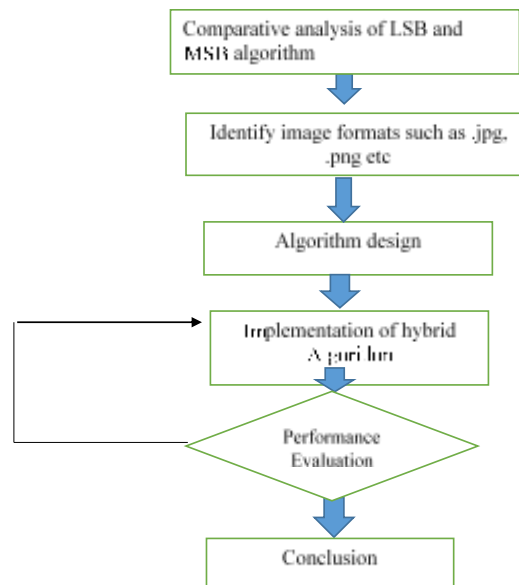
Panwar et al., [2] implement a Modified LSB Technique using cryptography approach and test the performance of the work with MSE and PSNR solving the issue of secrecy of data and cyber-crimes. Mustapha and Wisam [3] proposed a new LSB-based colour image steganography method using C#.net framework and test the performance with Mean square error, Peak signal to noise ratio, Normalized cross-correlation, Average difference Structural content, Maximum Difference Laplacian and MSE Normalize absolute error finally address the issue of efficiency, payload capacity, integrity check and security in digital images.

[5] Harakannanavar et al. proposed data hiding with 1 bpp, 2 bpp, 3 bpp and Variable embedding capacity, using three approaches K-bit LSB replacement, LSB matching revised and XOR based data hiding method and test the work using Image analysis and Histogram analysis. Finally highlighted that Security problem need still need to be solved.

3. THE PROPOSED HYBRID APPROACH

3.1 Proposed Methodology

The implementation of this idea and project was done with the Java programming language. This was chosen because of its cross-platform nature and its general use for steganography and cryptography of a wide range of image formats. Figure 3.1 show the methodology flow diagram.



The Stages depicted in Figure 3.1 are explained below:

- (a) **Comparative analysis of LSB and MSB algorithm:** we compare LSB and MSB algorithm to one another and distinguishing their similarities and differences. We find out that LSB is good in image quality than MSB but all the two are long in text embedding and the security of the two mentioned algorithms is weak when some image operations like cropping and resizing is applied, the secret message can be visible so the need arise for improvement.
- (b) **Identify image formats such as .jpg, .png etc:** Picture formats that support steganography were studied like jpg(joint photographic experts group) format which contain compressed data format and carry amount of text hidden in compressed form and png (portable network graphics) which is a raster-graphics file format that support loseless data compression and is an improved non-potented replacement for Graphics interchange format (Gif).
- (c) **Algorithm design:** Here we create the sequence of steps required for the implementation of the proposed work. The steps presents both the required inputs and output for embedding and extraction respectively.
- (d) **Implementation of hybrid Algorithm:** This is the realization of the technical specification or algorithm as a software component through programming and deployment. We build the source codes required using Java programming implemented in Netbeans integrated development environment.
- (e) **Performance Evaluation:** we use MSE, PSNR and Encoding time as formal procedure to measure the proposed algorithm's performance and the existing LSB and MSB. The higher the PSNR the lesser the MSE indicates that the algorithm will yield a better image quality and vice-versa and the lesser the encoding time yield a good algorithm with better performance.
- (f) **Conclusion:** Restates the research problem, summarizes the arguments or findings and discussed the implication. Here, the results of both the MSB, PSNR and encoding time were presented in a tabular form and bar chart for easy comprehension.

The Proposed method works by combining the LSB and the MSB techniques into a hybrid algorithm that embeds the secret message bits into the least significant bit and the most significant bit of the cover image. Hybrid algorithm is more secured than the existing LSB and MSB because the message embedding is more complicated and the intruder will not notice the existence of the secret message which is hidden in both the LSB and MSB of the cover image. The goal of this method is to preserve the statistical and visual features of the cover image and obtain a better stego-image that solve the security, image quality and long encoding time issues associated with information hiding in digital images.

An illustration of message embedding and extraction using proposed algorithm

The proposed Hybrid LSB-MSB algorithm embed the secret text in LSB and MSB. It picks two bits of secret text and hide the first bit in LSB and second bit in the MSB. The research consider a 24 bit for Gif (Graphic interchange format), Bmp (Bitmap) or jpg (joint photographic experts group) image.

Data to be inserted: character 'A': 01000001

Pixels will be used to store one character of 8 bits.

Embedding 'A'

Cover Image:	00100111 11101001 11001000
	00100111 11001000 11101001

11001000 00100111 11101001

Hybrid Method LSB-MSB: 00100111 01101000 01001000
00100111 11001000 11101001
11001000 00100111 11101001

Extracting 'A'=> 01000001

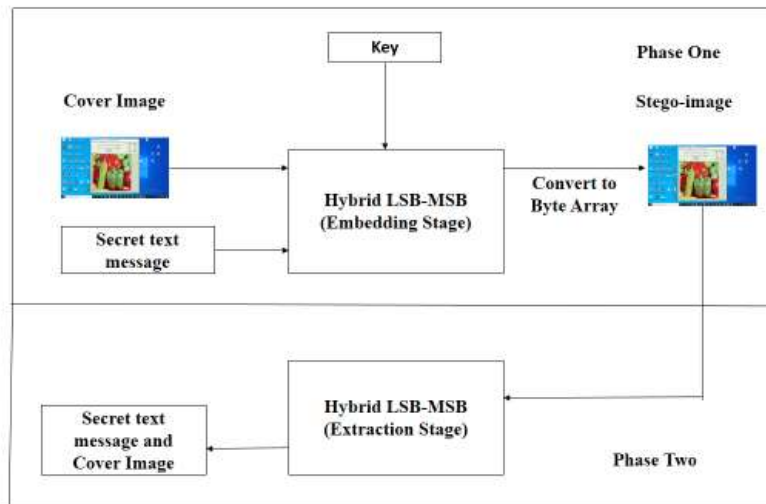


Figure 1: Proposed Hybrid LSB-MSB Architectural Model

The Architectural Model designed for this research is one of the key items of the research, From Figure 1, when the cover image and the secret text message has been carefully chosen, the embedding stage of the hybrid algorithm picks two bits of the secret message and embeds the first message bit in the least significant bit of the cover image byte and the second message bit in the most significant bit of the cover image byte, the Key is the secret key utilized in the embedding stage increasing security. The retrieving stage is the opposite of the embedding stage. Embedding is a lower dimensional representation of an image and Extraction refers to the means of retrieving the secret text message from the picture by means of the proposed algorithm. Embedding is important in preserving the text and extraction is used for recovering the hidden message.

A. Embedding Algorithm

Embedding algorithm is as follows;

Input: An $M \times N$ size cover image and message to be hidden.

Output: Stego image.

1. Image img = get image

2. Let n = width (img)

m = length (img)

3. Let x be message to hide

Begin

4. Convert cover image using read() method of image IO class into ByteArrayOutputStream

5. Convert Message character text(x) string into Byte Array using string.getBytes()

6. If the image cannot contain the message terminates with fault message

Else

for separately bit in the message byte

Begin

7. If using hybrid LSB-MSB (proposed algorithm) get two message(x) bits and conceal the first message(x) bit in the MSB of the cover image byte and the second message(x) bit in the LSB of the cover image byte.

10. Finish

Finish

The Extraction algorithm is as follows;

Input: Stego-image

Output: Cover image and message.

1. Begin



2. Input Stego-image
3. Convert stego image using read() method of image IO class into ByteArrayOutputStream
4. If decoding kind is LSB-MSB
5. Start
6. for the first 32 bytes, duplicate the LSB and MSB into an array of 32
7. Using int attribute transform the array into integer value
8. Generate an array of length of the integer value
9. Starting from size 32+1 of the stego-image array
10. Begin
11. Duplicate the LSB and MSB of the same stego array into an array of length 8.
12. Transform the array into a byte value and save in the matching index of the produced array
13. Transform the array value into string or image
14. Display msg and cover image
15. Finish

Finish

C. FORMAT OF THE FILE

Any image file design can be used equally as the cover image. However, the image was first transformed into PNG (Portable Network Graphics) format before something can be done on it. After the entire procedure, the image was transformed back to its unique design. PNG format is chosen because it is sustained by the Java image IO library; it applies lossless file density method and allows for easy exchange and observing of image data stored on local or isolated computer systems. Also, it appears to preserve a high point of image quality after the message has been embedded.

D. PERFORMANCE EVALUATION METRICS

Conducting analysis on the image quality using each algorithm will be done using three parameters of analysis which include;

1. Mean-Squared Error
2. Peak Signal-to-Noise ratio(PSNR)
3. Encoding Time

1. Mean Squared Error: is measure the distortion of the image that is the dissimilarity of error between the original and stego image. The less the Mean Squared Error, the superior the image quality. To find the MSE between two images $I_1(M,N)$ and $I_2(M,N)$;

$$MSE = \sum \frac{[(I_1(M, N) - I_2(M, N))]^2}{M * N}$$

Where M and N are the number of rows and columns in the input images respectively

2. Peak Signal to Noise Ratio(PSNR): The Peak signal to noise ratio is used to compare image compression quality of original image and stego image. If PSNR is 40dB or greater, the original and reconstructed images are usually indistinguishable by human observers.

$$PSNR = 10 \log_{10} \frac{(255)^2}{MSE}$$

Where the 255 here is the value as substituted for R

3. Encoding time: Encoding time refers to period it takes to embed secret text message in an image. However, the lesser the MSE value and the greater the PSNR value then the enhanced the quality of the image.

4. FINDINGS AND DISCUSSIONS

We developed a simple system to implement the projected Hybrid algorithm by means of JAVA programming language. There are two phases of the system, the embedding interface and the Extraction interface for hiding and extraction. Embedding is a lower dimensional representation of an image and Extraction refers to the means of retrieving the secret text message from the picture by means of the proposed algorithm. Embedding is important in preserving the text and extraction is used for recovering the hidden message. We tested the system using two different images rose.jpg, giraffe.png as cover images, and they were tested using each of the three steganographic methods that have been comprehensively studied above and were compared based on the consideration of image quality. We have proven that the encoding time is associated to the security of the algorithm in question. We use A 30.4 kilo byte document as message text.

In order to assess the performance of the projected method, stego-images from the LSB, MSB and the projected Hybrid method were compared using MSE, PSNR and encoding time metrics. The approaches were also tested with increased sizes of the images. Figures 2a, 2b, 2c, and 2d, show the dissimilarities between the Least Significant Bit (LSB), Most Significant Bit (MSB) and the hybrid algorithm after embedding messages in them. Table 1 shows the outcomes of the experiment using two jpeg and png images and their particular dimensions, file size and the text size that had been added 'steganographically'.



I



II

Figure 2a (rose.jpg with dimension of 560 x 448 pixels to hide the text): (I) Original image (II) Stego-image by means of LSB



III



IV

Figure 2a (rose.jpg with dimension of 560 x 448 pixels to hide the text): (III) Stego-image by means of MSB (IV) Stego-image by means of hybrid LSB-MSB

Using roses.jpg having dimension 560 x 448 pixels as cover image and 30.4 kilo byte document as message, it can be that realized from image II of figure 2a that there are no visible differences between the original cover image and the resulting image after hiding in the Least Significant Bit. Images 2a (III) and 2a (IV) show visible differences when associated to the original cover image using Most Significant Bit and hybrid LSB-MSB algorithms correspondingly. However, MSB (2a III) demonstrate much more difference.

By changing or Increasing the dimension of roses.jpg to 5040 x 4032 pixels, the payload capacity increases for MSB and projected algorithm (figure 2b, III & IV). Therefore, the bigger the cover image the more data that can be stored.



I



II

Figure 2b (rose.jpg with dimension 5040 x 4032 to hide the text): (I) Original image (II) Stego-image by means of LSB



III



IV

Figure 2b (rose.jpg with dimension 5040 x 4032 to hide the text): (III) Stego-image by means of MSB (IV) Stego-image by means of hybrid LSB-MSB

Figure 2c shows the output results of the newly created stego-images after hiding text with a file size of 30.4kb (31,160 bytes) in an image in PNG design. 750 x 1125 pixels is the dimension of the cover image, giraffe.png. Image 2c (II) displayed no noticeable difference when compared to the original cover image after hiding the text using LSB algorithm. The differences are visible at the top segments of Figures 2c (III) and (IV) for MSB and the hybrid algorithms respectively.



I



II

Figure 2c (giraffe.png with dimension 750 x 1125 pixels to hide the text): (I) Original image (II) Stego-image by means of LSB



III



IV

Figure 2c (giraffe.png with dimension 750 x 1125 pixels to hide the text): (III) Stego-image by means of MSB (IV) Stego-image by means of hybrid LSB-MSB

By Increasing the dimension of the PNG file to 6750 x 10125 pixels formed a stego-image indistinguishable from the original cover image when observed with the human eyes for the three algorithms (Figure 2d).



Figure 2d (giraffe.png with dimension 6750 x 10125 to hide the text): (I) Original image (II) Stego-image by means of LSB



Figure 2d (giraffe.png with dimension 6750 x 10125 to hide the text): (III) Stego-image by means of MSB (IV) Stego-image by means of hybrid LSB-MSB

5. STEGO-IMAGES VALUES OF THE MSEs, PSNRs AND ENCODING TIME.

S/N	Cover Image		Algorithm	Message Image (31,160 Bytes, 30.4KB)		
	Dimension	File Size		MSE (db)	PSNR (db)	Encoding time (millisecond)
1	Figure 2a 560 x 448 pixels rose.jpg	96.3 KB	LSB	0.307	55.263	258
			MSB	4798.737	11.319	262
			HYBRID	2448.935	14.241	190
	Figure 2b (5040 x 4032 pixels rose.jpg	2.14 MB	LSB	0.072	59.528	257
			MSB	22.807	34.550	258
			HYBRID	11.912	37.642	197
2	Figure 2c (750 x 1125 pixels giraffe.png	1.2 MB	LSB	0.37	52.48	258
			MSB	504.88	21.106	262
			HYBRID	1.83	42.50	190
	Figure 2d (6750 x	37.0MB	LSB	0.12	57.34	257



	10125 pixels giraffe.png		MSB	6.228	40.187	258
			HYBRID	0.61	50.31	197

Table 1 demonstrates the MSE, PSNR and encoding times of the cover images text embedding. It can be comprehended that a lower MSE value and a higher PSNR value for LSB algorithm as associated to the MSB and proposed Hybrid algorithms for text embedding were obtained. This produced a better image quality because the lower the MSE value and the higher the PSNR value, the better the quality of the image and hence imperceptibility is enhanced. Although the embedding capacity of the proposed method (Hybrid) is low compared to LSB, the proposed method gives better performance in all the parameters than MSB. The stego-image produced after embedding the secret text message in the cover image is almost indistinguishable to the original image. However, after increasing sizes of the cover images, the image quality of the projected algorithm increased, meaning that, the larger the cover image, the better the hiding capacity. Also, the encoding times of the projected Hybrid algorithm for various sizes of the different images were lesser compared to other approaches.

The following figures show the bar chart of results obtained with rose.jpg of sizes 560 x 448 and 5040 x 4032 pixels and giraffe.png of sizes 750 x 1125 pixels and 6750 x 10125 pixels after embedding text message using LSB, MSB and Hybrid (Proposed) algorithms respectively. The LSB algorithm had the lowest MSE and highest PSNR values while the proposed hybrid algorithm had the lowest encoding time.

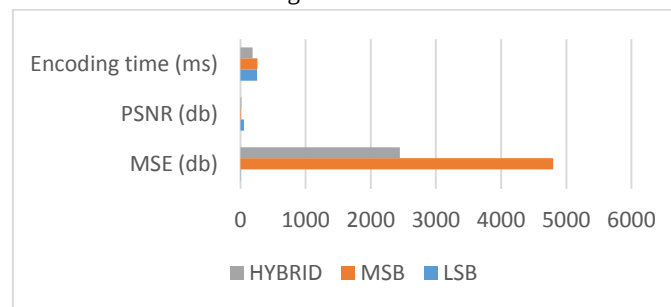


Figure 5a: The bar chart of results obtained with rose.jpg of sizes 560 x 448 using LSB, MSB and Hybrid algorithms respectively.

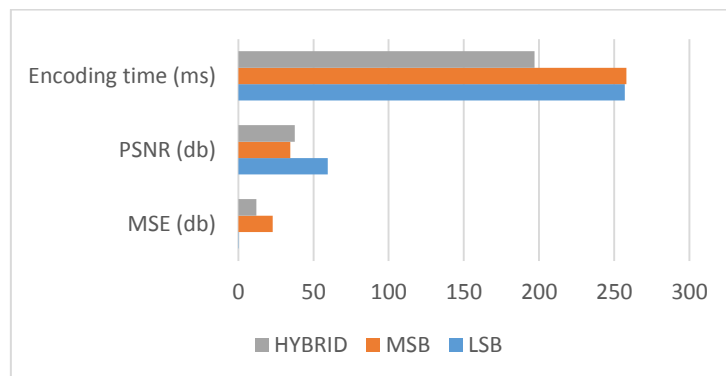


Figure 5b, the bar chart of results obtained with rose.jpg of sizes 5040 x 4032 pixels using LSB, MSB and Hybrid algorithms respectively.

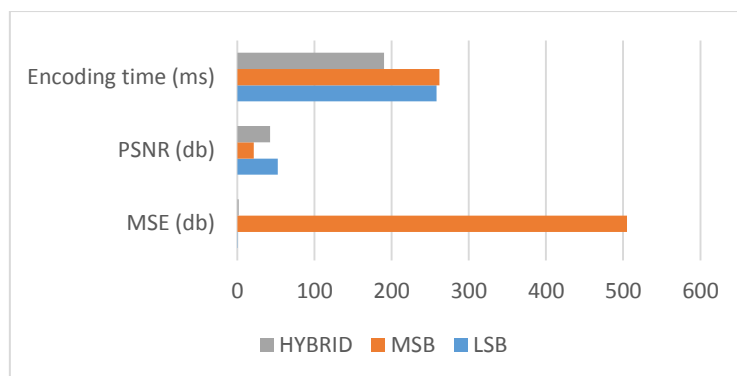


Figure 5c, the bar chart of results obtained with giraffe.png of sizes 750 x 1125 pixels using LSB, MSB and Hybrid algorithms respectively.

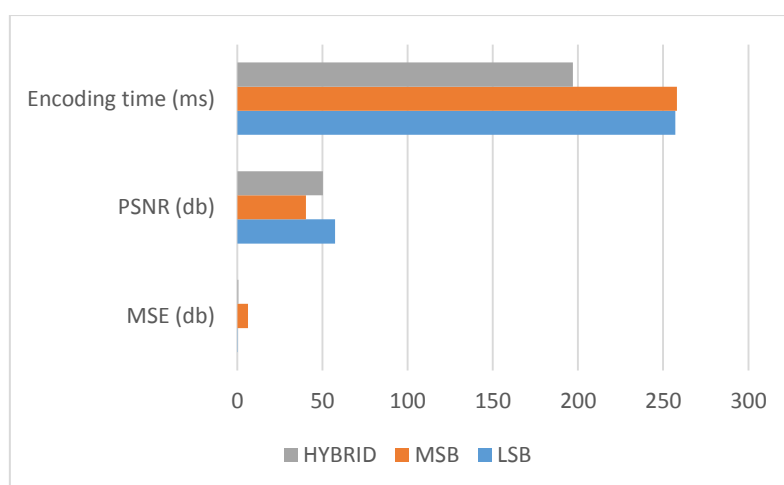


Figure 5d, the bar chart of results obtained with giraffe.png of sizes 6750 x 10125 pixels using LSB, MSB and Hybrid algorithms respectively.

6. CONCLUSION

In this work, a Hybrid (LSB-MSB) algorithm was developed for embedding text into images. The Hybrid algorithm works by embedding of secret message bits into the least significant bit and the most significant bit of the cover image. The performance measure of image quality due to embedding for LSB, MSB and the projected Hybrid technique was tested based on three error metrics; Mean-Squared Error (MSE), Peak Signal-to-Noise Ratio (PSNR) and the time it takes each algorithm to embed a message in a cover image. The results presented and evaluated show that the stego-images of LSB have the highest PSNR and the lowest MSE values, making it very effective to hide the data inside the image. However, when talking about the encoding time, the Hybrid LSB-MSB algorithm takes less time in embedding than LSB and MSB. In Conclusion, LSB algorithm gives a better performance than the Hybrid LSB-MSB algorithm but a larger file size of the cover image makes the Hybrid algorithm produces images with good quality. Nevertheless, the proposed Hybrid algorithm produced better image quality than MSB algorithm. However, the projected hybrid algorithm produced better image quality than MSB algorithm.

6.1 FUTURE WORK

In forthcoming, additional effort can be done to look into improving the algorithms principally the hybrid LSB - MSB algorithm. This can be realized by working on the firmness ratio for robust implanting processes and also out coming a way to put on this technique on superior sized gray-scale pictures. Thus, it is recommended to extend it to be used on other steganographic cover objects such as video or audio. For example, the Hybrid algorithm can be applied on frames of the cover video. Then extensive evaluation should be then conducted to witness the efficiency of the technique on video frames.

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BOSTON HOUSE PRICE PREDICTION USING REGRESSION MODELS

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Abstract The Boston Housing price prediction problem has been one of the problems that have been studied by the data scientists and analysts to do over the years. The problem is very attractive and proven to be an achingly profitable, and it is usually seeing as one of the most classical machine learning problem. Previous researchers have identified so many errors in prediction or estimation. However, by using difference machine learning techniques or models, the data scientists were able to reduce the error of prediction or estimation. Data scientists have developed many machine learning algorithms to solve this problem over the years. These machine learning algorithms that were developed are ranging from a very simple algorithm that offer a rough estimate into a more advance and complex algorithms that will give more precise estimation. This paper simplifies how these various machine learning regression methods will give a precise prediction about the house price. The models use in this paper are linear regression, decision tree regressor, random forest regressor and support vector machine regressor..

Keywords: House price, Machine learning, Supervised learning, Regression

1.0 INTRODUCTION

Houses are probably the most important assets in our lives. But one important thing that is at discussion is it is price that is increasing every year. Customers that want to buy the houses, have a little knowledge about the house prices which is a big challenge. Thus, how can customers estimate the price of houses based on their characteristics. If the customers able to solve this problem then he/she can know whether the house deal is good or bad. And he/she will be able to know that he/she is not been fooled by the homeowners. The best method to approach this is through application of Algorithms. Moreover, algorithms are not only benefit to customers, but they also assist homeowners in setting reasonable prices and home companies in marketing their properties for sale. Computer scientists have tried various methods of which have both benefit and setbacks, in each there are various factors used to be considered but none of the method is having perfect prediction, because even a negligible error will cost a lot money. The methods are judge by their accuracy and the number of factors they took in to consideration. **Machine Learning** is a method through which you can feed a lot of data to a machine and made it learn and make it is own decision without being explicitly programmed to do so. The term machine learning was first coined by Arthur Samuel (1959), Some people used to assume that “artificial intelligent” and “machine learning” are the same. The reality is that machine learning is a subset of artificial intelligent. The most popular and formal definition of machine learning was given by Mitchell(1997): A computer program is said to learn from experience E with respect to some class of tasks T and performance measure P if it is performance at tasks in T, as measured by P, improves with experience E. The machine learning processes are basically divided in to 3 types. These are supervised learning, unsupervised learning, and reinforcement learning (Sanyal et al., 2022). In Supervised learning the machine is given an input and the desired output by the supervisor, and the goal is to create a general rule using which a given input can be mapped in to their desired output, it usually comprises of both regression and classification problems, some algorithms under supervised learning are linear regression, logistic regression, decision tree, random forest, naïve bayes, k-nearest neighbor, support vector machine etc.. In Unsupervised learning there is no supervisor and structures in the input or features are found on its own, the main goal of the unsupervised learning is to find the hidden structures or pattern mean toward an end, it usually comprises of clustering and association problems, the algorithms that are found under unsupervised learning are K-means, C-means etc. In Reinforcement learning an agent is put in an environment and he learns to behave in this environment by performing certain actions and observing the reward which it gets from those actions, there is no pre-defined data, no supervision, it follow trial and error method, the algorithms under this reinforcement learning are Q-learning, SARSA etc.

2.0 LITERATURE REVIEW

A lot of works have been done, and a lot of papers have been written for about 50 years in Boston house price prediction. Difference accuracies and results have been found and the accuracies as well as the results are getting improved. Mu et al.(2014) did an analysis of dataset containing Boston house price using support vector machine(SVM), Least square support vector machine(LSSVM) and partial least square(PLS), methods SVM and LSSVM give more accurate performance than PLZ. Also Bahia(2013) use feed forward neural networks (FFNN) and cascade forward neural network(CFNN) to study the real estate market forecasting on house price using data mining



techniques, and it comes to conclusion that CFNN gives more accurate result than FFNN using mean square error(MSE) performance metric.

3.0 METHODOLOGY

The dataset was taken from the StatLib library which is maintained at Carnegie Mellon University. Boston House Price dataset was created by (Harrison & Rubinfeld, 1978). The dataset is having 506 number instances , 14 variable(13 independent variable, 1 dependent variable)Attribute Information (in order):

- CRIM per capita crime rate by town
- ZN proportion of residential land zoned for lots over 25,000 sq.ft.
- INDUS proportion of non-retail business acres per town
- CHAS Charles River dummy variable (= 1 if tract bounds river; 0 otherwise)
- NOX nitric oxides concentration (parts per 10 million)
- RM average number of rooms per dwelling
- AGE proportion of owner-occupied units built prior to 1940
- DIS weighted distances to five Boston employment centers
- RAD index of accessibility to radial highways
- TAX full-value property-tax rate per \$10,000
- PTRATIO pupil-teacher ratio by town
- B $1000(B_k - 0.63)^2$ where B_k is the proportion of blacks by town
- LSTAT % lower status of the population
- MEDV Median value of owner-occupied homes in \$1000's

The data will be divided in to 2 parts, with 80% of it as a training data, and 20% as a test data. The fitting of the models is done using training data and evaluation of the models is done using test data.

i. Model Selection

Even though machine learning have a lot of categories of problems from regression and classification of supervised learning to clustering and association of unsupervised learning, difference models can be used to solved different problems, but for this case, problem type is regression, because it is dealing with a continues value. Therefore this paper will focus on using four regression models, the models are linear regression, decision tree regressor, random forest regressor and support vector machine regressor.

- a) **Linear regression** is a method to predict a dependant variable(Y) based on the values of the independent variables(X). It can be used for cases where we want to predict some continues quantity.

$$Y = B_0 + B_1X + e$$

B_0 is the Y intercept, B_1 is the slope and e is the error.

- b) **Decision tree regressor** observes features of an object and trains a model in the structure of a tree to predict data in the future to produce meaningful continuous output. Continuous output means that the output/result is not discrete, i.e., it is not represented just by a discrete, known set of numbers or values.
- c) **Random forest regressor** is a class of Machine Learning models that use the combination of multiple random decision trees each trained on a subset of data. The use of multiple trees gives stability to the algorithm and reduces variance. The random forest regressor is a commonly used model due to its ability to work well for large and most kinds of data.
- d) **Support vector machine regressor** re is a supervised machine learning methods that separate data using hyper planes. Support vector machine can be used for both classification and regression problems. Support vector regression works on the same principle as SVM. The important idea behind SVR is to find the best fit hyper-plane along with the optimum threshold. The optimum threshold is the distance between the hyper plane and the boundary line. The boundary is defined by the support vector that lie farthest to the hyper plane. It is similar to fit the best fit line along with some threshold limit.

To measure the accuracy of the models, the performance metrics will be used, they are MAE, MSE, RMSE, and R-Squared..

A. Mean Absolute Error (MAE)

MAE is the simplest error metric used in regression problems basically the sum of average of the absolute difference between the predicted and actual values. In simple words, with MAE, we can get an idea of how wrong the predictions were. MAE does not indicate the direction of the model i.e. no indication about underperformance or over performance of the model. The following is the formula to calculate MAE:

$$MAE = \frac{1}{n} \sum |Y - Y^*| \text{ where } n \text{ is the number of the data points.}$$



B. Mean Square Error

MSE is like the MAE, but the only difference is that it squares the difference of actual and predicted output values before summing them all instead of using the absolute value. The difference can be noticed in the following equation:

$$MSE = \frac{1}{n} \sum (Y - Y^*)^2$$

Where Y is the price, while Y* is the predicted price.

C. RMSE

RMSE is used for the evaluation of the quality of predictions. It measures the standard deviation of the prediction errors (Residuals). Residuals are basically the measure of the Euclidean distance of the data points from the regression line. To compute RMSE the following formula is used: The absolute fit of the model is shown by RMSE. The lower the value of RMSE is the better the fit of the model is and better the accuracy is achieved.

$$RMSE = \sqrt{\sum_{i=1}^n \frac{(y_i - y^*)^2}{n}}$$

where n is number of the data points.

D. R Square score

R squared score measure the evaluation model. It has a categorical value ranging from 0 to 1. The highest R square score is 1.0 that is when the model have the 100% performance. To evaluate the value of R square we use the values , SSE which is the sum of the squared residuals, and then SST which is the sum of the squared total and it is the deviation of each observation from the overall mean.

$$R^2 = \frac{SSE}{SST}$$

4.0 RESULTS

Table 1. Dataset statistics

S/NO	ATTRIBUTE	MEAN	MINIMUM	MAXIMUM
1	CRIM	3.61	0.006	88.97
2	ZN	11.36	0.00	100.00
3	INDUS	11.13	0.46	27.74
4	CHAS	0.069	0.00	1.00
5	NOX	0.55	0.385	0.871
6	RM	6.284	0.56	8.78
7	AGE	68.574	2.90	100.00
8	DIS	3.795	1.129	12.126
9	RAD	9.549	1.00	24.00
10	TAX	408.23	187.00	711.00
11	PTRATIO	18.455	12.60	22.00
12	B	356.67	0.32	396.90



13	LSTAT	12.65	1.73	37.97
14	MEDV	22.53	5.00	50.00

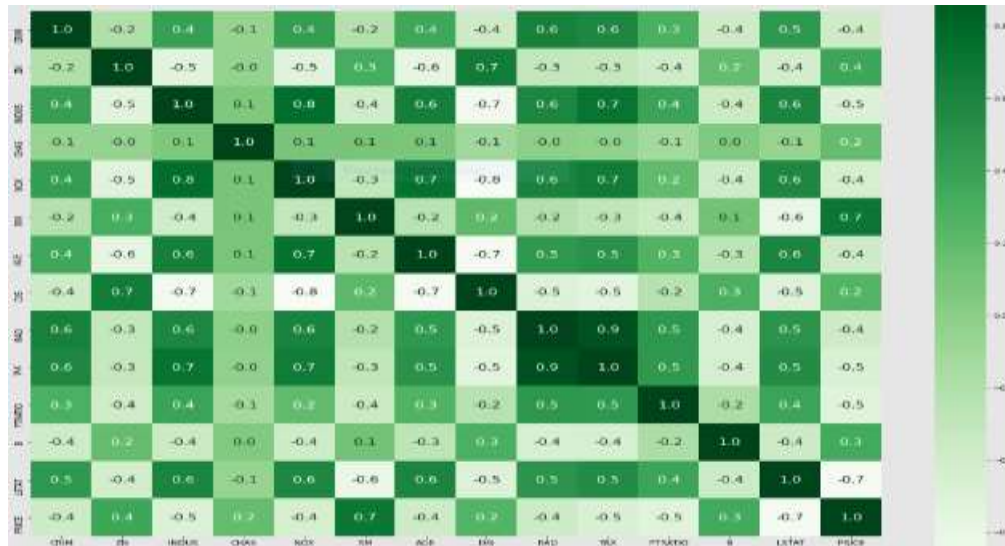


Figure 1. Correlation matrix

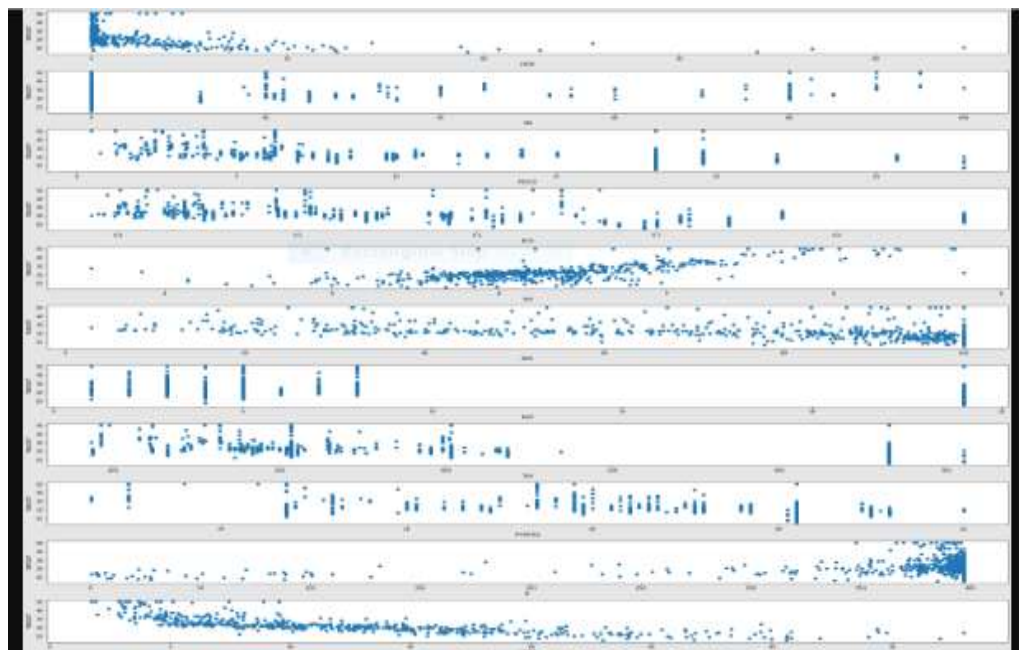


Figure 2. Plotting independents variables with target variable

1. Linear Regression

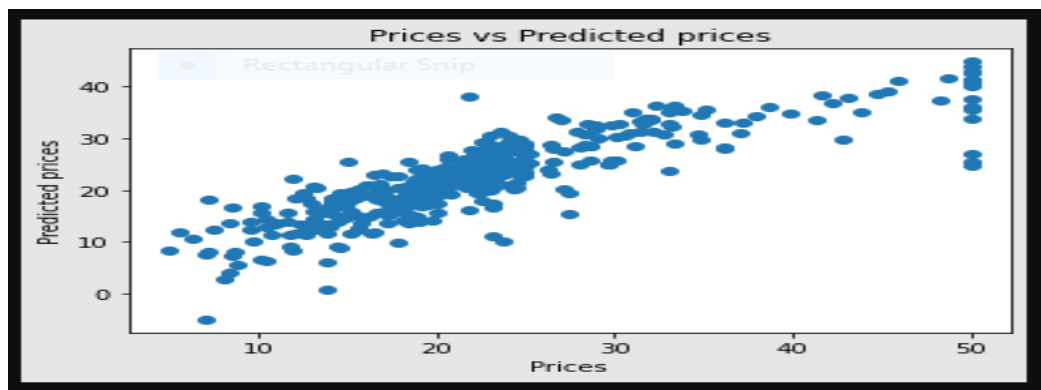


Figure 3. Visualizing the difference between price and predicted price in scatter matrix plot

2. Decision Tree Regressor

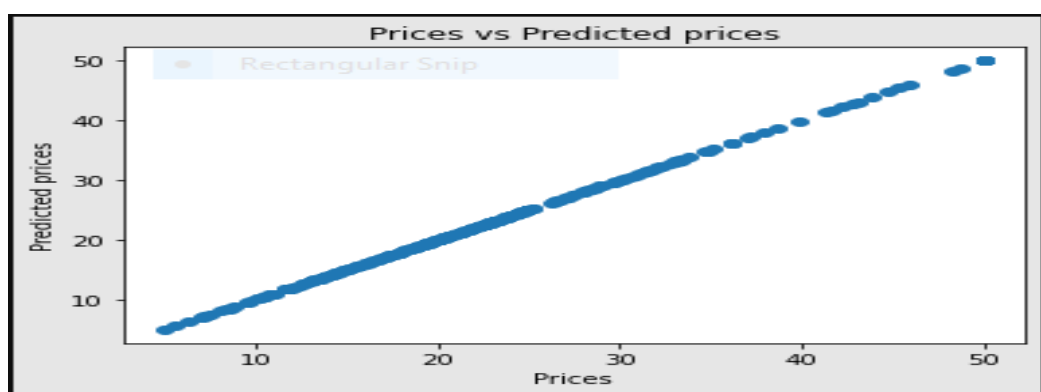


Figure 4. Visualizing the difference between price and predicted price in scatter matrix plot

3. Random Forest Regressor

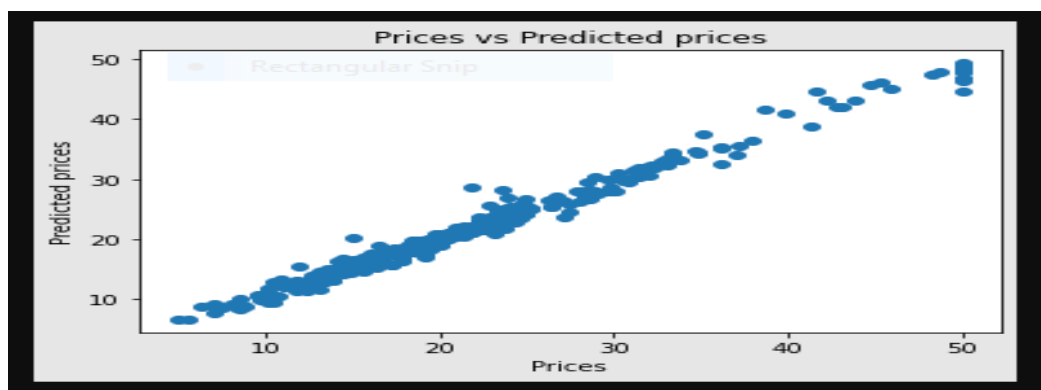


Figure 5: Visualizing the difference between price and predicted price in scatter matrix plot

4. Support Vector Regressor



Figure 6. Visualizing the difference between price and predicted price in scatter matrix plot

Below is the models performance metrics table

Table 2 Performance Metrics of the Models

Model name	R SQUARE	ADJUSTED R SQUARE	MAE	MSE	RMSE
Linear Regression	72.86%	71.95	3.384	22.953	4.791
Random forest regressor	98.19%	98.13	0.83	1.53	1.24
Decision tree regressor	100%	100	0.0	0.0	0.0
Support vector regressor	64.58%	63.40	3.02	29.96	5.47

5.0 DISCUSSION

From figure 1(correlation matrix) we can see that RAD and TAX are highly correlated, and any of them can be discarded, also LSTAT, RM, NOX, INDUS, PTRATIO and TAX have a correlation greater than 0.4 with the price which is a good indicator for using them as a predictors. We can also see that the number of rooms RM has the strongest positive correlation with the median value of the housing price, while the percentage of lower status population, LSTAT and the pupil-teacher ratio, PTRATIO, have strong negative correlation with house price. The feature with the least correlation to Median Value or house price is the proximity to Charles River, CHAS. Also from the figure2 (plotting independent variables with target variable) we can see that the higher levels of pollution decrease house prices to a greater extent than distance to employment centers.

Also from the scatter plots (figure3,figure4, figure 5, and figure 6), we can see that the predicted price and price of the house are highly positively correlated in all the four models. Also from the Performance metrics of the models (Table 2) we can see that decision tree regressor has 100% prediction accuracy and it is because it used to study the features and consider the feature or features that are more correlated to target and used them to predict the target, the next models with high accuracy(98.19%) is random forest, this is because it is also using a decision tree to predict its target variable. The next model which is linear regression is having 72.86% accuracy, this is because it considers almost all the features including those that are insignificant in predicting the target variable. The least accurate model support vector machine regressor has the value of 64.58%.

6.0 CONCLUSION AND RECOMMENDATION

Predicting a house price is very important, and it is even more important if you predicted it with a high accuracy. Predicting a house price with a good accuracy needs a lot of features to be taken into consideration, features like house location, the crime rate around the house location, the average number of rooms per dwelling etc.



From this paper we can observe that the house prices are higher in the areas with lower crime rate and lower pupil-teacher ratios. The house prices are also higher if it is closer to the Charles river, and also the house price is higher if it has more number of rooms.

From the result we got by evaluating the four regression models we can come to conclusion that the decision tree have the highest or perfect evaluation; if we use the decision tree in house price prediction, then we have no problem with our prediction., this happen because in decision tree algorithm the features used to be check to find out the ones that are more correlated to the response variable and then leave the remaining features, then followed by random forest which is just an advance decision tree algorithm. The prediction of the linear regression have so many errors, therefore we cannot used it to predict the price, the same with support vector regressor that have the least evaluation it cannot be used to predict the house price.

Lastly, it is important to note that the dataset used for this project was collected several years ago. In the years since, there is no doubt that pollution levels have risen and it would be interesting to examine the ways in which that affects house pricing in Boston today. . By having a new dataset even if the models we used in this paper do not have a good evaluation for Boston housing price, now there are even more advance and complex algorithms that can have a good performance in this prediction . In future we want to used a more complex algorithm like ANN.

7.0 REFERENCE

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Analysis of Distance and Operating Frequency on Signal Propagation through Concrete Walls

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Abstract: Frequency and distance analysis of Wi-Fi signal propagation through concrete wall plays significant role in the design of WLAN applications. The analysis gives a data used in determining the best location of network devices. Path loss depends among other things upon signal frequency, distance, antenna height and environmental (medium) characteristics. Frequency and distance are taken into account in most of the models for path loss calculation. This paper measures and analyzes the effect of distance and operating frequency on Wi-Fi signal propagation through concrete wall. It analyzes how the distance and frequency affect Wi-Fi signal. Empirically, an access point was used to transmit Wi-Fi signal to a laptop computer running inSSIDer software for the measurement of received signal strength; the measured results were recorded at every 10m interval between the source and destination. Theoretical result obtained from Weiner II model was used to compare the empirical result and both result showed that the path loss increase with increase in distance and the lower the communication frequency the better the transmission.

1.0 INTRODUCTION

When radio waves transmit or travel from one device to another there are several issues one has to highlight. The radio energy attenuates as it propagates and when it passes through obstacles like glass, wood, concrete and metal surfaces. There are a variety of approaches to the study of RF penetration of structures. For some application practical approach may be the best. This permits the penetration evaluation of structures that are not accessible for measurement. And the practical analysis is expected to be more precise than theoretical measurement. Path loss depends, among other things, upon frequency, distance, and antenna height and environment characteristics. Frequency and distance are taken into account in all models. Antenna height and environmental characteristics are not always explicitly considered. Frequently, their effects are not easy to include in a particular model. This paper uses empirical method to study the effects of frequency and distance on signal passing through concrete wall and the measured result is compared with the result of modified Weiner II model to analyse the effect of frequency and distance for a communication signal passing through concrete wall.

2.0 WEINER-II PATH LOSS MODEL

Wiener II channel models is a models that have been utilize in communication system with a goal to develop a single ubiquitous radio access system adaptable to a comprehensive range of mobile communication scenarios from short range to wide area. This will be based on a single radio access technology with enhanced capabilities compared to existing systems or their evolutions. The models have been evolved from the Wiener I channel models described in Wiener I deliverable D5.4 and Wiener II interim channel models described in deliverable D1.1.1. The covered propagation scenarios are indoor office, large indoor hall, indoor-to-outdoor, urban micro-cell, bad urban micro-cell, outdoor-to-indoor, stationary feeder, suburban macro-cell, urban macro-cell, rural macro-cell, and rural moving networks. Path loss models for Wiener II for the various environment scenarios have been developed based on results of measurements carried out within Wiener, as well as results from the open literature. The models have been used for path loss measurement in many different areas for example, Masoud, H. and Ivica, K. (2003). Investigate five propagation model including the Wiener model. Based on the result obtained, it is concluded that all models examined, performs adequately with similar accuracy. Similarly George, R. et-al (2003) use Wiener II model due to its accuracy in developing of 5G millimeter wave propagation channels in urban microcells. To the authors Knowledge no existing work found to study path loss through concrete wall using Wiener II path loss model.

In simple terms the path loss is the difference between the transmitted power and the received power of a wireless communication system. This may range from tens of dB to more than a 100 dB.

According to the WEINER-II model the path loss can be calculated as:

$$PL = 20 \log_{10}(d[m] + 6.4 + 20 \log_{10}(\frac{f_c[GHz]}{5.0})) + X \quad (1)$$



$$PL = 20\log_{10}(d) + 46.4 + 20\log_{10}\left(\frac{f_c}{5.0}\right)(2)$$

Here d is the separation between the transmitter and receiver in meters f_c is the frequency in GHz, A is the path loss exponent, B is the intercept i.e path loss in dB reference to 1m distance and C is the frequency dependent parameter. X is the environment specific parameter such as path loss due to a wall. PL_{free} is the path loss in a free space line of sight environment (here $A=20$, $B=46.4$ and $C=20$). Refer to the table 2.1 which describes the different environments defined in the WEINER-II model. Once an environment is selected the path loss parameters A , B and C can be selected from the table.

Table 1 Theoretical Result based on Weiner II model

Distance (m)	Free space path loss(dB)	Path loss (dB) concrete wall (
10	60.0248	72.0248
20	66.0454	78.0454
30	69.5672	81.5672
40	72.0660	84.0660
50	74.0042	86.0042
60	75.5878	87.5878
70	76.9268	88.9268
80	78.0866	90.0866
90	79.1097	91.1097
100	80.0248	92.0248

3.0 EXPERIMENTAL SET UP:

The measurements were done using an access point and which is IEEE 802.11b compliant and operates on 2.4 GHz. It also provides a transmit power of 17dBm and a bandwidth of 11 Mbps. The signal measurements were done with a computer running 'inSSIDer software' which is a tool that allows one to identify and measure the signal strength of WLANs. Using this software the measurements were taken. The signal strength was measured at 10m distance interval from access points. At each interval signal measurements were taken and recorded. Measuring tape was use for distance measurement. Table 2 shows the values for the measured received power/signal strength at 10m distance interval. And the path loss is calculated using equation (3)

$$\frac{P_1}{P_2} \equiv 10\log_{10}\left(\frac{P_1}{P_2}\right)\text{dB} = 10\log_{10}\left(\frac{P_1}{1\text{mw}}\right) - 10\log_{10}\left(\frac{P_2}{1\text{mw}}\right) \\ = P_1[\text{dBm}] - P_2[\text{dBm}] \quad (3)$$

Table 2 Measured Received Powers and Corresponding Path Loss at 2.4 GHz

Distance (m)	Transmit power(dBm)	Measured power (dBm) free space	Measured power (dBm) with wall obstruction	Path loss free space (dB)	Path loss with wall (dB)
10	17	-44	-56	61	73
20	17	-50	-62	67	79
30	17	-54	-65	71	82
40	17	-56	-68	73	85
50	17	-58	-70	75	87



60	17	-59	-72	76	89
70	17	-61	-73	78	90
80	17	-62	-74	79	91
90	17	-63	-75	80	92
100	17	-64	-76	81	93

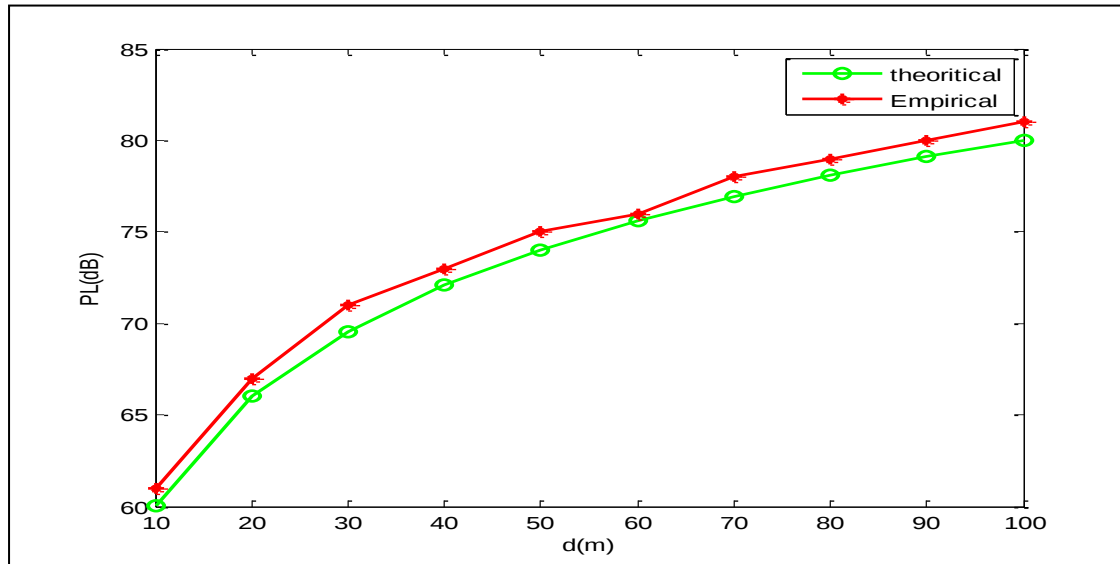


Figure 1 Comparison of the Wiener II model and empirically measured path loss in free space medium.

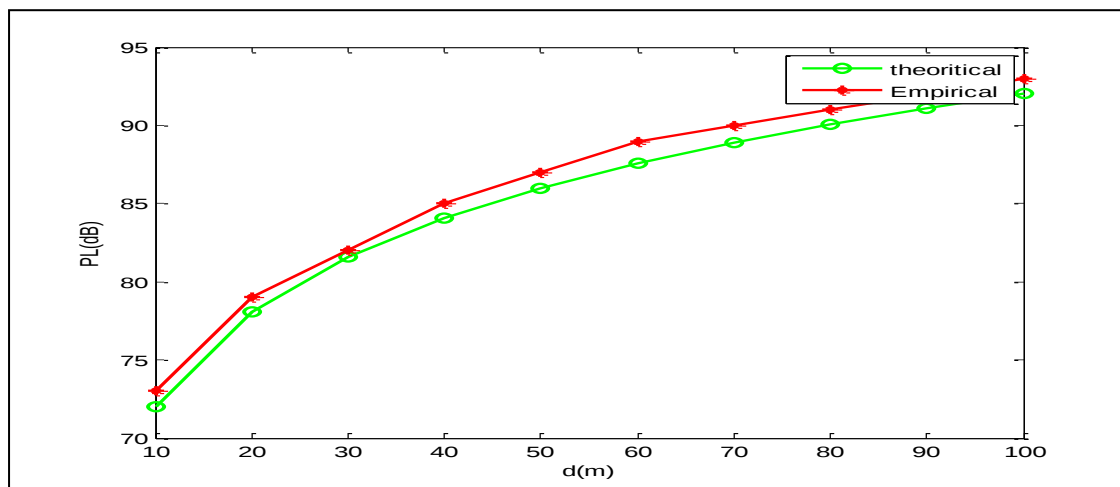


Figure 2 Comparison of the Theoretical Wiener II model and empirically measured path loss in Concrete wall obstructed medium.

Table 3 Wi-Fi Signal Attenuation for 100 to 3000MHz Range

Frequency (MHz)	path los free space (dB)	path loss with wall (dB)
100	107.2165	119.2165
200	112.0330	124.0330
400	116.8494	128.8494
600	119.6669	131.6669



1000	123.2165	135.2165
1400	125.5545	137.5545
1800	127.3008	139.3008
2000	128.0330	140.0330
2400	129.2999	141.2999
3000	130.8504	142.8504

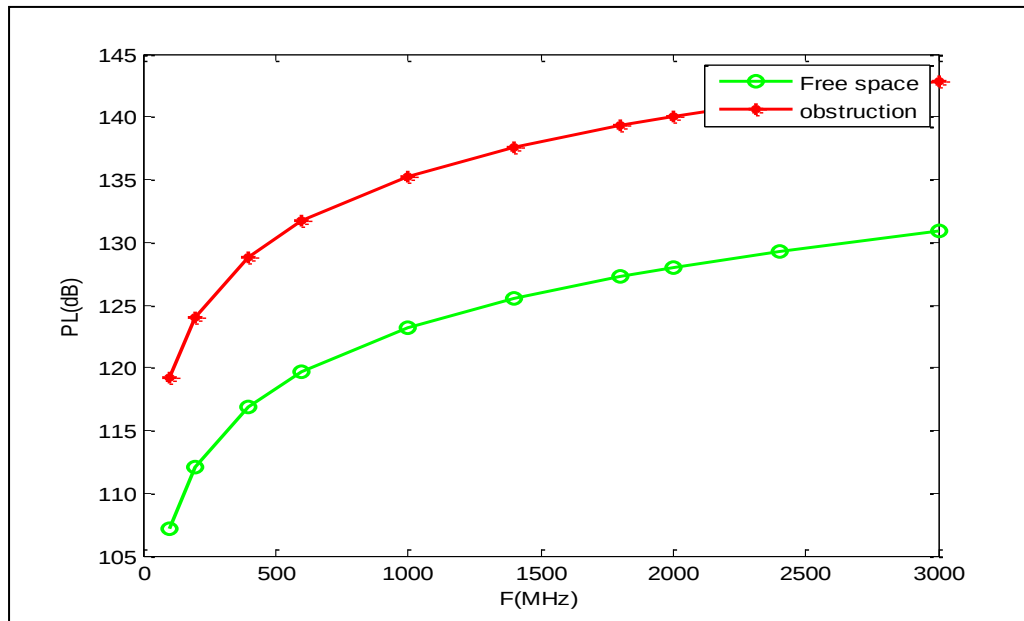


Figure 3 Graph of frequency against path loss

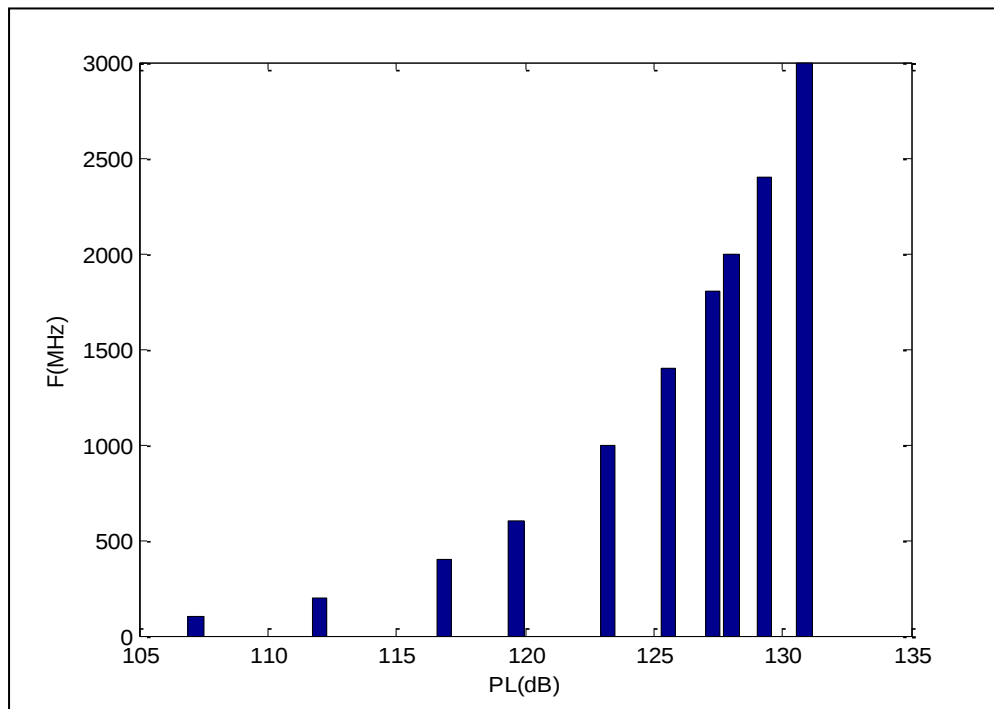


Figure 4



4.0 DISCUSSION

In order to analyze the applicability of the simulated path loss model to predict the measured data, and to come up with better communication frequency, the results obtained from the measurements are compared with the simulated result of Wiener II model. Figures 1 and 2 compares result of the original Wiener II model and the Empirical (measured) in both free space and the obstructed medium. The result shows in both cases that the path loss increases with increase in distance.

The effect of frequency is further investigated which shows that, the lower the frequency the better the communication i.e the lower the frequency the lower the path loss Figure 3 and 4 respectively.

5.0 Conclusion

This paper outlined the theoretical and empirical methods for the determination of Wi-Fi signal propagation in a concrete wall medium. Wiener II model is used as the path loss prediction model and compared with the empirical result. The result obtained from Wiener II model shows that path loss increase with increase in distance and the lower the frequency the higher the signal.

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PERCEPTION OF LIBRARIANS ON DIGITAL CONTENT MANAGEMENT AND COMPETENCIES IN TERTIARY INSTITUTIONS IN JIGAWA STATE, NIGERIA

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Abstract: *The digital information service delivery in libraries and information centres requires technical competencies; especially in this technological era. This paper investigates the digital competency level of librarians in tertiary institutions of Jigawa State, Nigeria (both state and federal owned). The study adopted the quantitative case study methodology by using structured questionnaire as instrument of data collection. The data was collected from forty seven (47) randomly sampled Librarians in six (6) tertiary institutions in the State. The study found that the majority of the librarians under study are conversant with searching methods, Integrated Library Software and Library Databases. Generally, it can be concluded that the librarians have moderate digital competencies to handle their services. The study recommended that the librarians need to know more on digital resources collection development; dealers and publishers of digital resources; they also need to acquire more skills in Institutional Repository Tools, Citation Management Tools.*

Keywords: *digital competencies, digital content, librarian, tertiary institutions*

1.0 Introduction

The advances in information technologies have changed the roles, opportunities, and image of the librarians drastically. Users play important role players in digital content creation, librarians must follow suit if they want to remain relevant (Babatope, Oghuvwu & Dumbiri 2020). Librarians must develop technological competencies because it will enable them create digital content, websites, blogs, videos, pod-cast, tutorials, wikis, etc without relying on third parties. This adds value to the digital librarianship, save time and money of the mother organization. This could be achieved through information literacy and instruction as it will empower the users and advance library and information services delivery. At the same time, users could get a better understanding on librarians roles and consider them as valuable professionals (Shastri & Chudasma, 2021).

There is need for digital competencies among librarians for developing and managing digital libraries and for staying relevant in the 21st century information environment (Okeji, Tralagba & Obi, 2020). Various types of digital competencies are required to work in a digital library environment. The development and management of a digital library requires digital skills to use the appropriate library software, Library Security system, assign metadata, use scanner for digitization and develop digital contents with high resolution. Digital library developers and managers must possess digital competencies to protect digital contents and ensure their sustainability and accessibility.

1.1 Statement of the Problem

To successfully develop and manage digital library systems and services, the librarians require variety of digital skills and competencies. Consequently, librarians in tertiary institutions of Jigawa State Nigeria need to indicate the specific digital competencies they are in need of for managing digital libraries so that they will be able to acquire those skills effectively satisfy the digital information needs of library users in the state. This study is carried out to investigate the level of digital competencies of the librarians in Jigawa state with the aim of exposing the challenges in executing the digital library services. Furthermore, there are few studies that investigated the digital competencies of librarians in Northern Nigeria, so there is a compelling need for this research as an attempt to address this knowledge gap.

1.2 Objectives of the Study

- (i) To determine the digital competency level of the librarians in tertiary institutions in Jigawa State, Nigeria.
- (ii) To find out the required digital skills by the librarians that handle the digital information systems and services in tertiary institutions in Jigawa State, Nigeria.

1.3 Research Questions

- (i) What is the digital competency level of the librarians in tertiary institutions in Jigawa State, Nigeria?
- (ii) What are the required digital skills by the librarians that handle the digital information systems and services? in tertiary institutions in Jigawa State, Nigeria?



2.0 Literature Review

In this ICT prevailing era, library professionals must possess some Information and Communication Technology competencies to become more productive and relevant. A study by Bajpai, & Margam, (2019) & Cherinet (2018) has posited that since digital skills are essential for the success of individuals and libraries, the educational institutions should include emerging skills in curricula to meet the needs of the 21st -century librarians and expectation of potential employer. Therefore, the librarians must update and upgrade their ICT skills to perform better in the digital environment (Atanda, Owolabi & Ugbala, 2021). Heavy reliance on technology suggests that the librarians must be able to adapt and learn new technologies, advanced skills, and tools, for successful services delivery (Okeji, Tralagba & Obi 2020; Shakeel & Rubina, 2017).

Today, the librarians must be expert to use information in print and digital form, for the maximum benefits of the users. Librarians should apply the skills acquired through professional development while discharging their professional duties. Librarians should apply the skills acquired through professional development while discharging their professional duties (Babatope, Oghuvwu, & Dumbiri, 2020). The growing ICT driven information services have posed challenges to library and information professionals. ICT skills deal with the application of ICT to a specific purpose. It is not just about using a software package or using operating systems, neither is it concerned with keyboarding skills and ability to copy type or follow instructions. Instead, ICT skills are all about the ability to use knowledge about ICT to find, develop and present information; whether it is text, image or number, or all of these integrated task” (Quadri, 2017).

Baro, Obaro, and Aduba, (2019), in their study on assessing the digital literacy skills and competencies among librarians working in university libraries in Africa found that librarians rated their database search skills, uploading documents to online platforms, skills in using different social media, sending and receiving e-mails skill, digital library development skills, skills in applying new technologies into library services, ability to create different file formats and ability to use open source software as very high. Furthermore, metadata development skills, and library website development skills were rated to be moderate and low. It is thus clear that the librarians must learn and adjust to a rapidly changing environment and acquire competencies and skills to become a knowledgeable asset to the library (Shastri & Chudasma, 2021). Another study by Kumar (2013) show that “LIS professionals serving in various engineering educational institutions are mostly computer literate and have significant basic ICT skills to handle the library, still there is enough scope to develop their innovative ICT skills and to implement these skills in the library to provide new ICT-based library services.” Employers want the librarians with wide range of ICT skills and competencies in certainly to their routine skills.

Chanetsa and Ngulube (2016) in their study indicated that respondents possessed core skills which include presentation and Information literacy course design skills, reference and research skills, including information and search retrieval skills. Over a third of respondents believe that they needed new skills which include web design, online cataloguing, classification, knowledge of HTML, virtual reference and online chats, knowledge of the use of mobile technologies like cell – phones and tablet in education, knowledge of the construction of subject portals in teaching, learning, research.” Baro and Eze (2015) investigated “the level of ICT, information literacy (IL) skills of librarians in Nigerian Colleges of Education (COE) in order to discover the challenges they face in acquiring these skills. The findings showed that librarians in the study zone rate their Information Literacy skills as average. However, a study by Nkamneben, et al. (2015) examined the "extent of ICT skills possessed by librarians in the universities in Anambra State, Nigeria. The findings reveal that Librarians in the universities in Anambra State are weakly skilled in ICTs.

Table 1. Distribution of Respondents

S/N	Tertiary Institution	Respondents frequency	Percentage
1	Federal University, Dutse	8	17.0
2	Sule Lamido University, Kafin Hausa	10	21.2
3	Hussaini Adamu Federal Polytechnic, Kazaure	8	17.0
4	Binyaminu Usman Polytechnic, Hadejia	7	14.8
5	Jigawa State College of Education, Gumel	7	14.8



6	Jigawa State College of Education and Legal Studies, Ringim	4	08.5
7	Jigawa state institute of information Technology, Kazaure. (Informatics)	3	06.3
	TOTAL	47	100

Table 1 shows that 8(17.0%) of the librarians responded were from Federal University, Dutse, while 10(21.2%) were staff of Sule Lamido University, Kafin Hausa Library. then, 8(17.0%) of the librarians under study were from Hussaini Adamu Federal Polytechnic, Kazaure. Also, 7(14.8%) of Librarians responded from each of Binyaminu Usman Polytechnic, Hadejia, Jigawa State College of Education, Gumel, 4(08.5%) from Jigawa State College of Education and Legal Studies, Ringim and 3(06.3%) from Jigawa state institute of information technology, Kazaure.

Table 2. Digital Skills and Competencies of Respondents

SN	Digital Skills and competencies	Frequency of Respondents			
		Excellent	Good	Fair	Poor
1	Searching methods (basic and advanced)	29(61.7%)	11(23.4%)	7(14.8%)	0(0.0%)
2	Digital referencing/consultation (calls, email, chat, etc.)	35(74.4%)	12(25.5%)	0(0.0%)	0(0.0%)
3	Databases (Science Direct, EbscoHost, ProQuest, etc.)	23(48.9%)	15(31.9%)	9(19.1%)	0(0.0%)
4	Navigation tools (Search Engines, Web Directories, Subject Gateway)	22(46.8%)	14(29.7%)	11(23.4%)	0(0.0%)
5	Digital resources collection development	15(31.9%)	5(10.6%)	21(44.6%)	6(12.7%)
6	Digital resources dealers and suppliers	9(19.1%)	16(34.0%)	7(14.8%)	15(31.9%)
7	Intellectual property and copy rights laws	15(31.9%)	23(48.9%)	6(12.7%)	3(6.3%)
8	web 2.0 services (social media, RSS and Weblogs, etc)	40(85.1%)	7(14.8%)	0(0.0%)	0(0.0%)
9	Integrated library software (Koha, NewGenlib, Netlib, etc)	21(44.6%)	17(36.1%)	9(19.1%)	0(0.0%)
10	Institutional Repository Tools (DSpace, Green Stone, Fedora, etc)	9(19.1%)	13(27.6%)	18(38.2%)	7(14.8%)
11	Metadata, Cataloguing and Classification tools (MARC, OCLC, Dublin Core, etc)	26(55.3%)	19(40.4%)	2(4.2%)	0(0.0%)



12	Web designing (domain name, hosting, URL, IP address, FTP, hyper link, etc)	9(19.1%)	15(31.9%)	15(31.9%)	8(17.0%)
13	Network and system security	20(42.5%)	20(42.5%)	4(8.51%)	3(6.3%)
14	Citation Management Tools (Mendeley, End Note, Zotero etc)	11(23.4%)	15(31.9%)	9(19.1%)	12(25.5%)
15	Library Security system (Barcode, RFID, QR Code, Electromagnetic security system, etc)	11(23.4%)	6(12.7%)	21(44.6%)	9(19.1%)

Table 2, shows that the librarians have remarkable skills in searching methods (basic and advanced), as 29(61.7%) of them rated the skills at excellent level while 11(23.4%) indicated the skills as good. However, the librarians are well skilled in Digital referencing/consultation (through calls, email, chat, etc.) as 23(48.9%) indicated the skill at excellent level and 12(25.5%) at good level. The Librarians are capable in Databases (Science Direct, EbscoHost, ProQuest, etc.) in which 23(48.9%) were rated excellent and 15(31.9%) were rated good. However, 22(46.8%) of the librarians under study were rated excellent in Navigation tools (Search Engines, Web Directories, Subject Gateway) and 14(29.7%) indicated their competency as good. Also 15(31.9%) of the librarians were skilled in Digital resources collection development at excellent rate while 5(10.6%) were rated good. However, the majority of them 21(44.6%) rated their skills at fair level and 6(12.7%) at poor level. Likewise, a study by Nkamneben, et al. (2015) found that the librarians in the Nigerian universities are weakly skilled in ICTs. This indicated that the librarians need skills in digital resources collection development.

Meanwhile, 15(31.9%) and 5(10.6%) of the librarians indicated their acquaintance with digital resources dealers and suppliers at excellent and good rate; while the majority 16(34.0%) rate their competencies at poor level. This signifies the need for more training on digital resources dealers and suppliers. In a similar study, Baro, Obaro, and Aduba, (2019), rated the database search skills, competency in using different social media, sending and receiving e-mails skills, and ability to use open source software by librarians working in university libraries in Africa as very high.

The 15(31.9%) the librarians under study were having skills in intellectual property and copy rights laws at excellent level and 23(48.9%) at good level. The librarians are rated highly competent in web 2.0 services (social media, RSS and Weblogs, etc) with 40(85.1%) at excellent level and 7(14.8%) at good level. The librarians are well acquainted with Integrated Library Software (Koha, NewGenlib, Netlib, etc) with 21(44.6%) at excellent rate and 17(36.1%) at good rate.

The Librarians are skilled in Institutional Repository Tools (DSpace, Green Stone, Fedora, etc) with 9(19.1%) at excellent rate and 13(27.6%) at good rate. The Librarians have remarkable skills on Metadata, Cataloguing and Classification tools (MARC, OCLC, Dublin Core, etc) with 26(55.3%) at excellent rate and 19(40.4%) at good rate. The data from Table 5 indicated that, 9(19.1%) of the librarians were skilled in Web designing (domain name, hosting, URL, IP address, FTP, hyper link, etc) at excellent rate, 15(31.9%) at good rate and fair rate, while 8(17.0%) at poor rate. Equally, a study by Baro, Obaro, and Aduba, (2019), showed that "library website development skills by librarians working in university libraries in Africa were rated to be low". So, the Librarians need more training on Web designing.

The librarians have excellent skills in network and system security as they have rated the skills 20(42.5%) at excellent and good rate. Moreover, the librarians are familiar with Citation Management Tools (Mendeley, End Note, Zotero etc) with 11(23.4%) at excellent rate, 15(31.9%) at good rate, 9(19.1%) at fair and 12(25.5%) at poor rate. This revealed that the librarians need to acquire more skills on Citation Management Tools as 25.5% of them are rate poor in the area. The librarians' skills on Library Security system (Barcode, RFID, QR Code, Electromagnetic security system, etc) were 11(23.4%) at excellent rate, 6(12.7%) at good rate, 21(44.6%) at fair rate, and 9(19.1%). This shows that the librarians require more skills on Library Security system. In a study by Atanda, Owolabi & Ugbala, (2021), it is found that professional competence of library personnel towards digital services in university libraries in Nigeria is relatively low, therefore, the librarians must improve their digital skills to cope with technological challenges of digital era.

3.0 Research Methodology

The study used the quantitative research method. The structured questionnaire was used as instrument of data collection. The population of the study consist of Librarians in all tertiary institutions in Jigawa State, Nigeria, in which the accessible population comprises of 2 universities, 2 polytechnics, 2 colleges and 1 institute in the state. Seventy (70) questionnaires (10 in each tertiary institution) were distributed. Forty seven (47) questionnaires were successfully filled and returned by randomly sampled librarians working in the 7 selected tertiary institutions. The data was collected from both state and federal owned tertiary institutions in Jigawa State of Nigeria. The collected data was analyzed using tables of frequency and percentages.



4.0 Conclusion

The findings from this study has identified the skills and competencies acquired by librarians in tertiary institutions of Jigawa State, Nigeria as well as the areas they need more skills. It can be concluded that majority of the librarians are knowledgeable and skilful in searching methods; Digital referencing and Navigation tools. Similarly, the librarians are competent with Intellectual property and copy rights laws, and Integrated Library Software. Moreover, the librarians are proficient in Metadata, Cataloguing and Classification tools, and Network and system security. Nevertheless, it is also found that the librarians require more skills and knowledge about Institutional Repository Tools, Web development, Citation Management Tools, and Library Security system because their skills in those areas were rated low. Generally, the librarians in tertiary institutions of Jigawa State, Nigeria have moderate digital skills and competencies required to successfully carryout the library services.

5.0 Recommendations

It is recommended that the librarians need to know more on digital resources collection development; as well as dealers and publishers of digital resources. In addition, it is also suggested that the librarians need to acquire more skills in Institutional Repository Tools, Web development, Citation Management Tools, and Library Security System.

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THE ROLE OF CIVIL SOCIETY ORGANIZATIONS IN THE POLITICAL DEVELOPMENT OF NIGERIA

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Abstract Civil society organizations have over the years played a significant role in the political transformation of Nigeria from the pre-colonial, colonial, and post-colonial era in (both civilian and military regimes) despite the efforts in shaping the political structure of this nation, the relationship between the state and the CSO's has not been cordial or at least is more of opposition to the successive governments. As a result of this, this study critically examines the roles of civil society organizations in the political development of Nigeria. Secondary method of generating data is adopted and qualitative method of data analysis is employed. In other words the general methodology of the study is library and desk work, the theoretical frameworks adopted for this study is group theory. The study reveals that, civil society organizations are seen as a threat to the government in Nigeria. Because of the habitual intolerance to opposition commonly found in developing nations or states (Nigeria inclusive). Also civil society organizations are seen as instruments of enrichment in Nigeria. The study recommends that, civil society organizations should not be seen as threat but partners in the maintenance of law and order in Nigeria, and should be seen as pace-setters especially in the management of resource, accountability, transparency and justice.

Keyword: civil society organization, politics, political development

1.0 INTRODUCTION

Civil Society Organizations have a long history in Nigeria especially in their contribution to political development. Prior to colonialism, social and civic movements arising from the society which engage in the reconstruction of the State and society have existed all over Africa not only that but also participate substantially in various selfless services such as (Aikin-Gayya) self-help organizations or foundations, the Jihadist movement such as that of (sheik Usman bin Fodiye R.A) in the West Africa and similar efforts in the North Africa are good examples (IDEA, 2002).

Social and civic organizations are rooted in the indigenous structure and institution, [Eteng cited in Habu, (2010)]. Despite that fact, these social and civic organizations are not fully blown civil society organizations as we have it lately, but they laid the foundation to the development of civil society organizations in Nigeria. The large array of the pre-colonial civic organizations existed in form of co-operative groups, guilds, religious institutions, secret societies and age grades. Their existence is clear evidence that associational life sprung and shaped the direction of social and civic groups in both social and productive economic activities long before colonialism (Habu, 2010).

These social organizations or civil society organizations helped in shaping the Nigeria political system before and after independence through their struggles against tyrannical nature of the political systems during the colonial era, military and the continued struggle for a system that is built on the foundation of rule of law in Nigeria civilian regime, because to Tocqueville cited in Karp, William, Sullivan (1997) "treat civil society as a buffer which is the protector of individuals from tyrannical state".

Development either political or socio-economic remains a notorious target for many third world countries/less developed countries (LDC's), but political development rank second if not the first (particularly Nigeria) due to some of these reasons, existence of notorious military class that usurps the legitimate power and authority from democratically elected political class multiple number of times, closely related to this is existence of un-patriotic class of politicians whom frequently engages in unconstitutional application of powers and authorities vested in them legitimately and largely due to negative impacts of colonial influence and many other reasons. Thus, the general objective of this study is to critically examine the role of civil society organizations to the political development of Nigeria and explore the nature and general characters of CSO's and some problems that hinder their smooth delivery of some of the services they render. Therefore, the study wishes to achieve the following objectives; To expose the salient nature of civil society organizations, to also assess some challenges that is bedeviling the CSO's and above all to examine the contribution of the CSO's in the political development and enthronement of democratic ethos in Nigeria.

The study focuses on political development issues from the contribution of civic associations, it is also within the specific focus of this study to digest some salient features of civic associations and the implication it has on their ability



to perform their responsibilities, development remain multi-dimensional concept, the dimension here is political as against socio-economic or traditional/cultural development.

Political development remain a mirage in many third world countries, Nigeria included due to all or some of these challenges, incessant intervention by the military personal, weakness of key democratic institutions, corruptions, the application of incumbency factors, various maneuvers and demagogues by the politicians to keep them-selves in power, political apathy from the citizenry, lack of general societal interest from the ruling class and many other challenges which culminated to stagnate the proper enthronement of democratic value and ethos and consequently led to serious backwardness in political development.

There is a popular saying in the academia that there is no all right paper, this implies that no amount of effort and sophistry will pass with-out some limitation so far as it is academic work. This, study is also the victim of this prowess and trajectory of academia and thus the study is limited in many respect, prominent amongst them is limiting the use of CSO's roles to only democratic and political aspect, whereas in reality they are much more dynamic that what they are limited to, secondly relying significantly on library and desk work as method of enquiry, inability to incorporate serious problem bedeviling the CSO's which is referred to as NGOization of the CSO's and generally financial and time limitations.

2.0 THEORETICAL FRAMEWORK

The theoretical framework for this study is the group theory which is postulated by Arthur Bentley, David Truman which view politics from group affairs, the central assumption of the theory is that politics is best seen from group perspective for in groups (associations) articulation and promotion of interest is best realized, with each group trying to have its way (interest) served some of the assumptions of the theory are itemized below; as cited in Anifowese and Enemou (1999)

- A political group exists when men of shared interest organize, interact, and seek goal through political process.
- The interaction amongst members of the group must be frequent, sufficiently patterned and be directed towards the attainment of certain interest by its members
- That society is mosaic of numerous interest groups with cross cutting membership
- That forms of politics in any society is ultimately determined by the interaction amongst groups within the society
- That competition exists among such groups to influence governmental allocation of societal resources and exercise power. (Anifowese and Enemou (1999)

Even though the concept of civil society is both social and political concept, this theory can serve the duo of the dimensions, in the sense that at the foundation of every civic association lies interest articulation, aggregation and promotion, once interest are promoted then politics is involved. Thus the linkage of the theory to the study is strong, since at the root of every civic association (civil society organizations included) is articulation, aggregations and promotion of the interest that motivated the formation of the association.

The theory is useful to this study because it gives premises to analyze and understand the group nature of civil societies and how that contribute to political development, although the theory could be criticized as failing to in cooperate the conflicting nature of groups even within the groups, such as exposed by class analysis i.e. class antagonism.

2.0 REVIEW OF RELATED LITERATURE

Marxian view of civil society popularized by Antonio Gramsci sees civil society as “domain in which existing social order is grounded, a realm in which new social order can be founded, and an intellectual tool for fermenting change”. To him civil society is an “ensemble of private groups” that challenges the coercive power of the state as an emancipatory instrument for the exploited classes or groups, Gramsci cited in Mgba (2015). The review also explored the work of Bakare and Omode (2014) which Hirata(2002) was cited with his important contribution in demarcating civil society and civil society organizations, the work of Habu Mohammed (2010), was also reviewed as he asserts that there is existence of clear evidence that associational life exist long before the advent of colonialist, the work of Gberevbie (2013) was also reviewed as he asserts that the role of civil society organization in entrenching democratic governance is paramount as CSO's became the viable tool through which democratic norms could be entrenched, while Bakare and Omode (2014) are of the opinion that through civil societies sustainable political development could be achieved.



Habu (2010) was also of the opinion that civil societies are not just watchdogs of governments, they also serve as whistle blowers that are alerting the general public on sensitive issue which is going on in the government, but the public are unaware of it. For example the exposure of Mega corruption at Nigeria National Petroleum Cooperation (NNPC) during the Jonathan/Namadi regime and the exposure of budget padding by Member of National assembly in the person of Abdulmumin Jibril. This example does not capture civil society organization as a whistle blower but aim to exemplify the whistle blow act, which is one function that CSO's could perform.

It was opined by Habu (2015) that it is the desire for good governance that facilitate the existence of CSO's, he also asserts; that political development and sustenance of democracy is by and large, dependent on how good governance is natured on the principle of democratic values among the political actors and the civil society organizations. Omode and Bakare (2014) assert; that a vibrant civil society organization is sine qua none to the sustenance of any nation-state development in general. Studies have shown that the role of civil society organizations is vital in the political, social and economic development of any nation-state in Africa, the roles can be viewed in three (3) dimensions, first improved the quality of governance, second developing the capacity of governance to apply principle of accountability, transparency and openness; third working toward gaining the commitment of all elected officials, public servant, and NGO's to good governance, it is based on this that the scholars infer that civil society organization promote, maintain and consolidate socio economic and political development in Nigeria, Omode and Bakare(2014) also highlighted the views that civil society is different from civil society organization borrowing from the scholarly views of Hirata(2002) that the two related concept are remarkably different, where civil society refer to the gamut of the entire society with all the kind of associations you can find there in; civil society organizations are peculiar in their own ways, as they share common interest that is at the disposal of general public interest (usually) and non-violent in their activities, as they only seek to promote pluralism and diversity they are also distinctively different from the political parties and business organization, this argument of Omode, Bakare (2014) is supported by Cohen, Arato (1992) Diamond (1992), Hirata (1999), (2002), Simai; (2006) and Scholte,(2001) which are all cited in Omode and Bakare (2014).

Gberevbie (2013) also starts his argument with confirmation of the fact that it's a settled matter in the annals literary works concerning civil society organizations, that for any nation-state to attain meaningful development in political, socio-economic ,and even technological sphere they need vibrant civil society organizations, the central focus of Gberevbie (2013) argument However is the unification or corporation of the civil society organizations efforts in pursuit of good governance and keeping the elected representatives at their toes, because the intolerant attitude of opposition and views that do not conform with the wishes, wimps and caprices of the elected official or that of their parties is rampant in many African Nation-states, so he suggest that they should unite in order to strengthen their activities and be able to stem the habitual divide and rules technique usually employed by governments to subdue them, and not allow them to function properly. Agbaje (1999) discusses the issue of civil society organization from pressure groups perspective, he asserts that interest groups are very much similar to pressure groups, he how-ever identifies some certain factors that facilitate the existence and vibrancy of civil society organization, they include:-

- i. Change in the economy, society, and politics and in the international environment, which can create new interest, and redefine or strengthen old ones.
- ii. Government policy it's self
- iii. The presence of the required leadership outside government willing and able to use the facilities of the democratic system to found and organize groups for the purpose of seeking to pressurize governments in a desired direction.
- iv. The level of activism of government in the sense that the more active the governments are the grater the possibility that more pressure groups will be formed around such activities.

He also asserts that civil society organizations are so central to existence and survival of democracy, they also make democracy to be healthy, since sometimes they challenge themselves when interest differ amongst them, as a result societies get to produce and promote the most prevalent interest.

From the foregoing discussion on related literature one could easily understand that civil society organization and democracy are two sides of the same coin, for democracy to function well so that it could be consolidated, there is the need for a catalyst, watch dog and supervisor and that is civil society organizations; and if CSO's do their jobs adequately the result is nothing but political development in that respect.

2.1 HISTORICAL BACKGROUND OF CIVIL SOCEITY ORGANIZATIONS AND THEIR STRUGGLES IN NIGERIA



Activities of Associational life started long before the advent of colonial rule in Nigeria, social movements pre-dates colonialism in every sector of what is called Nigeria today Dare and Oyowole (1997) while treating various political systems of the dominant ethnic groups in Nigeria, mention the roles played by Ages groups in the Igbo societies, and the self-help activities of youth groups in the North known as “Aikin-Gayya” and the activities of cult groups in the Yoruba land which is capable of forcing their paramount ruler/king to exterminate himself if he is no longer accepted as the rightful ruler, all of these are some forms of Associational activities which are aimed at promoting public interest.

Similarly Dare and Oyowole (1997) postulate that civil societies groups began their activities in political entity known as Nigeria as far back as 1908 in colonial Lagos; peoples union was formed to protest against the imposition of new (pipe-bone)water rate, and that was just the beginning, again in 1911 there was Anti-slavery and Aborigines protection union (in Lagos) was formed which later on metamorphose to form Nationalist movements, there was also the Aba women riots of 1929, it was also instrumental to the progression of resistance to colonialist, even though the riot was not organized by a formidable and organized civil society as of then, but it sparks rays of hope and motivation that people could challenge the colonialist and their government, and somehow avert the implementation of unwanted public policies or programmes, the actual issue that sparks Aba riot of 1929, Was imposition of warrant chiefs and Levying of tax on both men, women and even children, similarly in 1934 four young Nigerians in the Name of Dr. J.C Vaughan, Samuel Akinsanya, Earnests Okoli, and H.O Davies Dare and Oyowole(1997), successfully foamed civil society association named Lagos Youth Movement, which is instrumental in the fight against unfair educational policy, at Yaba Collage as an educational institution, they later change the name of the organization to Nigerian Youth Movement in 1936 (NYM), this new civil society organizations and many others culminated to form the early political parties during the colonial period, the activities of Nationalist and their associations, the West African Student Union and Labour union pressured the colonialist into considering handing over governing affairs to Nigerians, which later become reality in the year 1960.(Dare and Oyowole (1997)

After independent the strategy of civil society organizations change tremendously, during the colonial period the common interest that can be easily identifiable with most of the civil society organizations is the fight/struggle against the colonialist and colonialism, which later translate to activism to attain self-rule (Nationalism/independence), but with independence attained the focus change into Agitation for consolidation of sovereignty, entrenchment of democracy and economic progress and general development of the nascent Nation-state, the decision of the parliament to change the stance of the Nigerian constitution from monarchical to republic was motivated by such movements in 1963, the move also saw that derivative powers of the constitution was changed from that of privy council of England to an act of our own very parliament, then Nigeria as a young Nation-state was stocked with military coup and counter coups from 1966 to 1979 and 1983 to 1999, the activities of civil society organization during the military regime of 1966 - 1979 was not very active due to civil war that engulf the young Nation state, and the aftermath of the war diverted the attention of the activities of citizens and their government into reconstruction, and quest for National unity. (Dare and Oyowole (1997)

But between 1983 – 1999, there are giant strides by civil society organizations, they become alive and waxing stronger day by day, a good point to start was protest against Austerity measures adopted by General Ibrahim Babangida in the 1986 known as the structural adjustment programme (S.A.P), there was general protest prominent among the actors include National Association of Nigerian Students (NANS) , Academic Staff of Universities Union (ASUU) and Nigerian Labour Congress (NLC) there was also protest and write-up on the mysterious assassination of Dele Giwa a prominent journalist, the Annulment of June 12 elections, which is considered as the straw that broke the back of the camel. [Akingboye and Anifowese (1999)].

In November 1993 General Sani Abacha toppled the interim National government (ING) formed by General Babangida before he steps aside on August 26, 1993. During Abacha regime there was a lot of activism from the civil society organizations their focus was not only to pressurize the military juntas to hand-over the mantle of leadership to democratically elected, but also to promote and protect the fundamental human rights, freedom of speech and other vital issues of civil liberties.

Abacha government has a nasty record of assassinating oppositions as in the cases of Kudirat Abiola the incarceration and death of Shehu Musa Yar’adua, incarceration of chief Olusegun Obasanjo, Beko Ransome kuti, Chris Anyawu, the deposed Sultan of Sokoto Late Ibrahim Dasuki, the hanging of Ken-Saro – Wiwa, and many other tyrannical activities of that regime which prompted civil society organizations like National Democratic coalition (NADECO) and United Action for Democracy (U.A.D) to arise against, the military leadership at the expense of their lives, it will be justifiable to say that Abacha’s regime represent the Apex of civil society organizations activism in terms of pushing for fundamental right and rejection of military rule, it can also be safe to say the focus of activities in the civil society



organizations then was promotion of democratic governance as against military governance and promotion of enjoyment of fundamental (Basic Human) rights. Akingboye and Anifowese (1999)

After returning to civilian regime in 1999 with chief Olusegun Obasanjo as the president, the popular expectations was that primary issues such as respect for fundamental human rights, constitution and constitutionalism will all be safe and taken care of, but to the dismay of many people and various civil society organization that fought tough battles to restore democracy and rescue Nigeria from the clutch of military dictatorship. Issues such as the massacre of Zaki-biam in Benue, the plan to maneuver third term Agenda are witnessed during Obasanjo regime even though he was democratically elected. Habu (2015); Omode and Bakare (2014), During Jonathan/Namadi regime we have the protest of fuel subsidy, the struggle for the Doctrine of Necessity by civil society organizations such as Nigerian labour congress (NLC) and Trade Unions Congress (TUC), Save Nigeria Group (S.N.G), perform wonderful jobs, other issues that dominate the activities of the CSO's during this period was Electoral Reform, with CSO's like Transition Monitoring Group (TMG) Labour Monitoring Group (LMG), Civil Liberty Organizations (C.L.O) and Electoral Reforms Network (E.R.N) and host of many others performed wonderful job, in activism, watchdogs, and whistle blowing that resulted in aborting of third term ambition by Obasanjo, swearing in of Goodluck Jonathan as acting president, and stopping the fuel increase during the early days of Jonathan/Namadi regime, the activities of Bring Back Our Girls (B.B.O.G) will not escape this write up because the activity of the organization surely kept the administration of Jonathan/Namadi and even this administration(Buhari/Osibanjo) on their toes as to the rescue of the abducted Chibok girls and a such they can quality as role model for civil society organizations. Habu (2019)

In brief one can say that, the trends or epochs of civil society organizations in Nigeria can be seen in this direction, at first stage they started in the struggle for self-government, though Nationalism and fighting against exploitative tendencies of colonial government, later with attainment of independence, they shifted their focus to social and economic development and consolidation of our Nascent sovereignty and democracy, then after the civil war it was the preservation and promotions of National Unity, Reconciliation, Rehabilitation and Reconstruction, and lately the management of ailing economy from (S.A.P) to privatization, poverty alleviation, empowerment and other issue with regard to fundamental human rights as they may arise. Therefore civil society organizations could be seen to perform what is desired of them in Nigerian context, though serving as watchdogs to check the excess of government, exposure and curtailing of human rights abuses and disregards for constitution and constitutionalism, they also serve to aggregate and push priorities of people.

2.2 CONTRIBUTION OF CIVIL SOCIETIES TOWARDS POLITICAL DEVELOPMENT IN NIGERIA

One might wonder and ask why is civil society organizations are so crucial and central to the issue of democracy? the Obvious answer to this question is the transition between direct democracy and representative democracy left a huge gap between citizens and their governments, the growing population of the whole world and resultant complexity of governmental activities would also be additional factor, as such an average citizen only transfer his allegiance and trust the government he elected with authority to act on his behalf, thus one of means available to citizens to check the excess of elected officials was election which is periodic, the tenure of election is such a long time, usually four (4) years, this necessitate citizens to look for a means/tool that would allow them to be able to correct, stop or push interest to the government they elect, even before elections and that means would be civil society organizations. Below are some specific examples as to the activities of prominent civil society organizations towards promoting and ensuring political development in Nigeria.

2.2.1. Ensuring credible Electoral process:- From 1999-2019 elections was face with some challenges that made some Nigerians to lose hope in the electoral process because of irregularities that is associated with the electoral process. For example 2007 election was regarded as the most flawed election in Nigeria electoral process (International Crises Group 2007, Awopeju, (2011), cited by Habu, (2015). Even the president elect Umar Musa Yar'adua admitted the shortcomings of the election and also to remedy these problems the president inaugurated Justice Uwais Electoral Reform Committee on 28th August 2007, CSO's submitted tones of memoranda to the E.R.C offering suggestions on how Nigeria can break the chain of her electoral problems. Indeed, significant number of the 22 member of E.R.C was drawn from civil society organizations. They helped in analyzing the challenges of the Nigeria previous elections as well as charted the way forward. During that constitutional reform public hearing, CSO's were there in good numbers to present their memoranda. This led to a better legal frame work for election that Nigeria currently enjoys, Ojo(2011) cited by Omode and Bakare (2014).

The contributions of CSOs in electioneering activities cannot be overemphasized. They embark on series of advocacy to mobilize and encouraged citizens to actively participate in voter's registration exercise that preceded the election. Coming together under the umbrella of Domestic Election Observation Groups (the groups include TMG, Federation of



Moslems Women Association of Nigeria(FOMWAN), LMG, Women Environmental Programme (WEP), Centre for Democracy and Development (CDD), CLO, Alliance for Credible Elections (ACE), Electoral Reform Network (ERN)etc. They deployed approximately 50,000 trained election monitoring teams throughout the country during the 2007 election Akingboye, Oloruntoba (2007) cited in Omode and Bakare (2014).

In addition civil society organizations played prominent role in ensuring credible election in 2011 and 2015 election through voter education using both traditional and social media for their campaigns, and deployed thousands of observers to follow through and report on the electoral process.

2.2.2 Guarding against Democratic Threats-; Ojo (2011) cited in Odeh (2012), stated that Ex-President Obasanjo administration had attempted to tinker with the Nigerian constitution in 2005/2006, to insert a tenure elongation clause, but the plot was primarily shot down by the parliamentarians with pressure from the civil rights groups such as the National Civil Society Coalition against Third Term (NACATT) chaired by Bamidele Aturu and Peoples Problems and Solutions (PPS). Thereafter, in 2010 CSO's rose to the occasion to demand for the recognition of the then Vice President G. Jonathan as the Acting President, when late President Musa Yar'adua was ill and flown abroad. CSO's such as the Save Nigeria Group (SNG) and Enough is Enough Group (EEG) actually seized the initiative and demanded for a resolution that will give due recognition to vice president as acting president. This led to the adoption of the now popular 'Doctrine of Necessity' by the National Assembly in March 2010. It should be noted that the CSO's need to cover more grounds in this role. For instance, they have not done much to curb the unprecedented corruption among the ruling class, which has become a great threat to the survival of democracy in Nigeria.

2.2.3. Influencing Public Policy; Civil Society Organizations had over the years influence government policies in various ways such as:-

i. Human Rights, Child Labor and Human Trafficking- Here, children are exploited and forced to work to supplement family incomes. The consequence is that the child is unable to access education, which hinders his or her development. CSO's working on human rights and children's rights issues partnered with the state for the enactment of the Child Rights Law. The legislation has been passed in 11 states of the Federation, The CSO's need to work towards success in the remaining states. Secondly, People involved in the human trafficking export young people across for purposes of prostitution and related forms of exploitation. According to a study conducted by CSI (2007) cited Odeh (2012), CSO's responded to this through advocacy campaigns. The establishment of the National Agency for the Prohibition in Trafficking of Persons (NAPTIP) indicates some success by CSO's. This notwithstanding, it is strongly expressed that state actors need to recognize CSO's as partners for meaningful impact in other spheres of human right abuses such as the boom in the sale of new born babies in some parts of the country. Odeh (2012)

ii. Right to Life and Properties; Reacting to the spate of bomb blasts by the Boko-Haram Islamic sect and the wanton destruction of lives and properties in many parts of the Northern Nigeria in recent past, Nigerian CSO's the Socio-Economic Rights and Accountability Project (SERAP), said the federal government's failure to prevent the continuing violence and unnecessary loss of lives was a serious breach of its fundamental obligations to protect citizens rights to life. The organization's agitation has received international attention. However, it has been observed that the CSO's were unable to embark on aggressive street protests, which could have drawn more support in the fight against terrorism, which is now one of the greatest threat, not only to democracy, but the corporate existence of the Nigerian as nation-state. Odeh (2012)

iii. Monitoring the National Budgeting Process-; According to CSI (2007) cited in Odeh (2012), CSO's have established the Budget Law and the fiscal responsibility initiative to help monitor the process. They are also working with the legislature to develop inclusive budget laws at national and state levels. Despite these initiatives, it is still early to evaluate the effectiveness of CSO's in the national budgeting process, since they have only been active in this area since 2003.

iv. Campaign for Legal Reforms in the National Assembly-; the passing of Freedom of Information Act would have been a mirage, but for a CSO called Media Rights Agenda (MRA), which alongside others, sponsored a private member bill on the issue at the National Assembly, and the struggle by Citizens Forum for Constitutional Reform (CFCR) and other CSO's is the campaign for a new constitution for the country through the convocation of a sovereign national conference (SNG). Odeh (2012)

v. Guarding Against Unpopular Policies-; Kunle (2012) cited in Odeh (2012) observed that when the federal government unilaterally removed subsidy on petrol or Premium Motor Spirit (PMS), with its attendant increase in fuel prices and hardships on the citizens in January 2012, CSO's led by the NLC, mobilized Nigerians from all walks of life for what they described as the "mother of all protests". The government reversed the policy to N97.00 /liter, in favor of the citizens, thereby forestalling unnecessary pressures that could jeopardize the democratic process. However, nothing



has been done on the issue of gross mismanagement and corruption in the oil sector, which prompted the fuel crisis in the first place.

2.3 Some Challenges of Civil Society Organizations in Nigeria

Civil Society Organizations in Nigeria had over the years, been faced with problems which have affected their effectiveness and efficiency as agent of change in Nigeria. Some of these challenges are caused by both the political and the administrative environment (context within which they operate) of the civil Society Organizations, such as political instability which is cause by frequent change of government and also lack of clearly defined objectives. In the light of this Odeh (2012), Habu (2015) and Habu (2019), have enunciated some of the challenges affecting Civil Society Organizations in Nigeria as follows:

- i. **Disconnection from Rural Organizations-:** CSO's activities are mostly restricted to the federal government levels. They lack national spread. Most of these organizations are concentrated in Lagos and a few other state capitals in the country. This anomaly makes it difficult for majority of the Nigerian population, which live in rural areas to appreciate the role they play, in many cases they do not even know they exist, talk less of imbibing their doctrines and through the process, develop political consciousness and confidence to resist inducement from politicians. Odeh (2012)
- ii. **Lack of Unity-:** Divisions among the Nigerian civil society along the ethnic and regional lines have not helped its democracy advocacy. This has led to disunity and disagreement among the Nigerian CSO practitioners in term of decision making and unity of purpose. The internal contradictions within the membership make it difficult to agree on common positions during the period of engagement with the state. Divisiveness weakens efficiency and makes the associations vulnerable to penetration by government agents. Habu (2015)
- iii. **Inadequate Funding-:** Most Nigerian prodemocracy CSO's are donor dependent and the focus of foreign donors on democracy in Nigeria have expanded from supporting pro-democracy to include the support for democratic institutions like the legislature, judiciary and other democratic institutions. This fiscal factor has also reduced the activities and impacts of some prodemocracy CSO's in contemporary Nigeria. Habu (2019)
- iv. **Government Patronage-:** Most often, the Nigerian private media, under the umbrella of the NUJ, rely heavily on government patronage (advertisement) for survival and their independence has been seriously compromised for the above reason. There have also been claims that the NLC leadership was compromised by the government in the recent 2012 strike/mass protests against the withdrawal of subsidy on petroleum products. Odeh (2012)
- v. **Lack of Internal Democracy-:** The lack of internal democracy in most of the Nigerian CSO's makes it difficult for members of these organizations to learn Democratic values, norms within their organizations, thus they cannot adequately inculcate this principle to citizens. Odeh (2012)
- vi. **Lack of Skills for CSO's-:** The civil society organizations are also faced with lack of capacity in terms of knowledge, skills and methods of advocacy. It is expected that any organizations that wish to engage the state must be well equipped with superior knowledge and articulation of stronger points, specifically the ICT knowledge, This is still absent in many of the civil society organizations in Nigeria. Habu (2019)
- vii. **Corruption and Personal Enrichment-:** There have been accusations of corruption, ranging from lack of transparency in the utilization of donor-funds to outright embezzlement or conversion of foreign donations to CSO's for personal use. This tends to weaken the CSO's moral right to engage the state. It also hinders people of integrity and value from associating with them. The impact of their advocacy for a change is also limited, because it is stated that he who comes to equity must come with clean hands. Odeh (2012)
- viii. **Lack of State Support and Partnership-:** The relationship between CSO's and the state is largely characterized by suspicion and tension. For the most part, state officials have viewed CSO's as competitors of power, influence, and legitimacy in the public sphere rather than as partners enhancing development in society. Habu (2015)



3.0 METHODOLOGY

The study relied on the secondary method of generating data and qualitative method of data analysis is employed for the analysis, considering the nature of the paper, the study utilizes the secondary sources of data, where documented materials such as official documents, newspapers, magazines, books, journals and internet materials were consulted in order to obtain data for the study. Further, the qualitative method of data analysis was adopted for study considering the fact that the paper analyzes the implementation of ethically and morally agreed development initiative (politically), and examine how they fare in Nigeria, in short, the basic method of this paper is library and desk work .

3.1 CONCEPTUAL CLARIFICATION OF THE KEY WORDS

3.1.1 Civil Society organizations; what they are and what they are not

There is no universally acceptable definition for many concepts in social sciences and civil society organization is just one out of them, but for guidance to this study, we select the following definitions, Iklegbe cited in Omode and Bakare (2014) refers to civil society as an “essentially participatory, broad-based and self-governing formation engaged in shaping public affairs, public policy and governance”, on his part, Uwais cited in Gberevbie(2013), refers to civil society as the sum total of those organizations and networks which lie outside the formal state apparatus, which includes, social groups, professional groups and non-governmental organizations. In other dimension civil society organizations as defined by the London school of economics (LSE) from its Centre for civil societies (CCS of LSE) 2004 is that

Civil societies refer to area of un-coerced collective action around shared interests, purposes and values. in theory its institutional forms are distinct from those of the state ,family and market ,though in practice the boundaries between state ,civil societies , family and market are often complex, blurred and negotiated. Civil societies commonly embrace a diversity of spaces, actors and institutional forms, varying in their degree of formality, autonomy and power. civil societies are often populated by organizations such as registered charities , non-governmental societies ,community groups ,women organizations ,faith based organizations ,professional associations ,trade unions ,self-help groups, social movements ,business associations, coalitions and advocacy group Barnes (2006;43)

This definition contradicts the stance of many scholars such as Diamond (1992), Simai (2006) and most importantly Schulte(2001) cited in Omode and Bakare(2014), Their argument is that civil societies fall outside government and state sphere and which are not primarily motivated by profit (any form of business activity) ,These arguments are strengthen by the works of Cohen and Arato (1992) also cited in Omode and Bakare(2014) which asserts that it now a settled matter in the annals of literature that civil society is different from political parties and business organizations, this is justified by the reasons that political parties generally aim at wrestling power from their competitors while civil societies aim at influencing decisions in their favor, thus that absence of intention to form a government distinguish civil societies from political parties , Omode and Bakare(2014)

But there is completely different conception of civil society organizations that seems to be highly acceptable in conflict arena, this conception seems to be in tandem with the (CCS) of (LSE's) conception, the conception is often referred to as “wider” or “maximalist” conception of CSO's, what is peculiar about these conception is that even business, faith-based, family and other organizations that hitherto did not made the list are included. Not only did Centre for civil society (CCS) of London school of economics (LSE) came up with completely different conception of civil society organization, but many out of its products are of similar opinion scholars such as Machetti and Tocci (2009) these scholars built their arguments on the premise of “conflict societies”, and they define them as; that society which is contrary to an environment (society) where there is peaceful coexistence, they further assert that the existential nature of conflict situation generate high degree of politicization and polarization, and thus by implication produce a completely different mood and mode to mobilize, articulate and promote interest thus they define civil society organization as: -

“The term civil society encompasses a wide variety of actors ranging from local to international, independent and quasi-government players, conflict tends to shape the identity and actions of civil society organizations”. Machetti and Tocci (2009)

They further assert that they adopted the wider or maximalist conception of civil society organization in order to avoid conveying false understanding that the two type of civil society organizations are easily separable that is the “civil” and “uncivil” (i.e. such views as argued by Hirata (2002) Omode and Bakare (2014), by “uncivil” Machetti and Tocci (2009) are referring to such groups as racist groups, business groups, and groups of born again Christians, Islamic fundamentalist, similarly families and private citizens are also excluded.



Therefore they saw a need to coin new terminology to take care of this view they are propagating as such they called them “conflict society” rather than civil societies in conflict and define them as amalgamation of various civil society organizations that are particularly related to conflict they range from “civil” to “uncivil”, international and transnational, local, normative and non-normative bottom line is conflict societies are independent agent of change and dependent product of the structure that exist (context). They are the wider perception of civil society that encapsulate wide range of civil society activities which are both positive and negative i.e. “civil” and “uncivil” they also identify some range of actors, such as conflict specialist, business, private citizens, research and educational activism, religious based groups, foundations and media, these groups are rather diverse they include similar model of elements provided by Diamond and McDonald multi-track diplomacy see

Table 1

Table 1. CoSOs typology

	Type of track diplomacy	Actors
1.	<i>Professional</i>	Technical experts consultants
2.	<i>Business</i>	Businessmen Trade unions Professional associations Organized crime networks
3.	<i>Private Citizens</i>	Individual citizens Diaspora groups Families and clans
4.	<i>Research, Training, and Education</i>	Special interest research centres Think Tanks Universities
5.	<i>Activism</i>	NGOs Lobby groups Grassroots social movements Local communities Combatant groups
6.	<i>Religion</i>	Spiritual communities Charities Religious movements
7.	<i>Funding</i>	Foundations Individual philanthropists
8.	<i>Communication</i>	Media operators

Source from Machetti and Tocci (2009)

adopted from Machetti and Tocci (2009) this is what makes Machetti and Tocci (2009) to conclude that civil society organization are independent agents of change and dependent products of the contextual conditions/societal structure that they exist within, therefore they could be both “civil” and “uncivil” so long as conflict is involved.

Following the path of maximalist Barnes (2006) also defines and see civil society organization from wider conception she asserts that “civil society must broadly understood, however refers the web of social relations that exist in the space between the state, market (activities with the aim of extracting profit) and the private life of families and individuals, civil society therefore involves qualities associated with relationships, values and organizational forms.

3.2 Some General Features and Functions of Civil Society Organizations

Civil society organizations are wrapped with some general characteristics which is common amongst them and they are; voluntarism, interest articulation and promotions, they are non-violent, they exist in between the realms of states, government and market, they do not seek to contest or form a government, they also perform these basic functions; according to Paffenholz (2009) civil society generally performs these basic function (advocacy, monitoring, protection, facilitation ,service delivery, socialization, inter group cohesion)



Fig (1) Courtesy Barnes (2006); the maximalist conception of civil society organizations

Barnes (2006) also asserts that a maximalist conception of civil societies recognize its plurality because it's a manifestation of the range of opinions, interest and values that exist within a society.

In some contexts there may be deep divisions within society that are in turn reflected in and shaped by polarized civil society organization some civil societies promote causes that are incompatible with internationally agreed norms and principles such as those promoting exclusionary or other hate-based ideologies or those tolerating (or even endorsing) tactics based in violence or oppression, while it is possible to conclude that “armed group” are not part of civil society they are often supported by elements in civil society that help to legitimize their cause, Further indicating the fuzzy lines around the “civility” of some civil society organizations

Barnes (2006) also asserts that every society has its own distinct forms of social organizations cultural and political traditions as well as contemporary state and economic structures all of which are central to determination of and development of civil society and shape its specific feature, this impliedly means civil society organizations are not static they're dynamic and contextually prone concept and phenomena.

Paffenholz (2009) also shares the maximalist conception in attempt to define what is civil society organization, she said civil society is understood to include a wide range of actors from professional associations, clubs, faith-based organizations (such as churches or Islamic charities) non-governmental organization (NGO) as well as traditional and clan group, However Paffenholz (2009) also exclude the usual groups that are excluded that is (media, political parties and business) but only to allow for the inclusion of their association (i.e. association of political parties) and she still claim that she applied of broader conception of civil society organizations than those usually applied in development and democratic studies i.e. the normative (minimalist) conception.

What is particularly important in this two opposing views of conception of civil society organizations is to scholarly show how the concept is diverse and dynamic and to understand some factors or context such as; (the context within which they operate, contemporary state and economic structure, socio-political traditions, political opportunity structure) that influence the development and operations of civil society organizations in general regardless of how and where they operate and thus significantly influence what they are capable of accomplishing or not.

3.3 Distinguishing Civil Societies from Civil Society Organizations

Another dimension worthy of exploring with regard to studies about civil societies organizations is the mis-conception usually portrayed by many scholars with or without their consent, about civil society organizations and civil society; civil societies in the stance of classical economist Adam smith, Karl Polanyi, Hegel to them a civil society is a non-political group thus completely separated from state, and a civil society is the result of transformation of societies from subsistence to civilized, this view of classical liberalist solely refers to a market driven system which abhors the



interference of government or state, but certainly it get to picture the civil society as modern setting of civic and social interactions of populace (citizens), see the quotation of their view and how they define civil society below:-

“the term civil society refers not only to a system of private want satisfaction regulated neither by the state nor the family, but to a system motivated by self-interest, within which ‘ each member is his own end, everything else is noting to him” Caporaso and Levine (2010) .

it is this dynamism in conceptualizing civil society that make us to take solace in the demarcation of civil society from civil society organization as cited in Bakare and Omode (2014) that it is arguable that civil society is broader than civil society organizations the former entails the entire territorial polity which include all citizens who either belongs to any civil group or not ;while the latter entail those individuals that consciously and actively participate in civil group activities , thus our argument find solace in the position of Hirata (2002) that civil society organizations exclude parochial society (i.e. individual and family life and inward looking activities such as entertainment ,recreation, and religious worship) and economic society (i.e. profit making individual business firms). Both parochial society and economic society are concerned with private end, not civic life or public end.

3.4 Politics

politics also is defined in many ways and views, some of the definitions are presented here, first politics is seen as striving to influence the distribution of resource in the society similarly Goodnow cited in Laxmikanth (2011), holds that politics is the expression of state will, further he asserts that the domain of politics is policy formulation, enactment of laws, execution of the laws(expression of the state will) and implementation of the selected or formulated policies, in another view Arthur Bentley sees politics as the sum of group behavior, similarly other scholars from the group theory perspective such as David Truman sees politics as the center of political process rather than the sum total of political activities .politics can also be seen as the authoritative allocation of values from Estonian view of point, it can also be seen as determination of who get what , when and how in the views of Harold laswell cited in Anifowese and Enemou (1999), and politics is also seen as the way choices are made, the way policies are devised and administrated the way programmes are managed Hughes (1998).

Politics in Nigeria is not all a smooth affair, starting from the struggle for independence to gaining independence, the struggle to keep military from involving themselves into governing the county to struggles to mobilize and sensitize the entire citizenry to participate in political activities, politics in Nigeria and other African countries also had to do with politicking and maneuvering by politicians to keep themselves in power, monumental corruption and extravagancy, lack of ideological inclinations and many other forms of vices and challenges, all these forms of challenges are what influence and motivate the formation and operations of various civil society organizations (most especially those relating to politics and enthronement of democratic ethos) in Nigeria, similarly these challenges contributed to slow and sluggish development of political activities and politics in Nigeria.

3.5 Political development:

Nigerian institute of social and economic research (NISER) cited in Gbervbie (2013) defined political development to involve deliberate action by inhabitants of a given society with the defined objective of achieving beneficial political goals in the polity. Development like many other concepts in social science has no one definite or precise definition, this implies that the concept is multi-dimensional. In other words, such stance can also be applied to political development, since we are only qualifying the word development with political, therefore there could be social development, economic development, etc. here we are concern with political development.

Development is used to refer to the total transformation of a system; thus when uses to describe a nation, describes the transformation of the various aspect of the life of the nation. In fact development implies a progression from a lower and often undesirable state (such as low political development level), for a high and preferred one. Walter Rodney (1972) cited in Onah(2006) sees development as many sided process at the individual level, it implies increased skills and capacity, greater freedom, creativity, self-discipline, responsibility and material well-being, at the level of social group, development implies increased of capacity to regulate the internal and external relationship (political relationship included), in another dimension (Marxian dimension) development is see as dialectical process in which the contradictions between a societies productive forces and relationship of production are resolved in a dynamic manner. The contradictions in the society are regarded as the driving forces of development in the society (where the majority of the populace gets to control their resources and affairs) thus development is sees as a social and dynamic process, the goal of which is change (Orluwene, 2014)



Thus political development could be seen as ability of society to be able to run its internal political matters without hindering from outside forces (independence), it could also be seen as provision and enjoyment of fundamental political rights (basic existential rights), interest and liberties, it could also be seen as establishment and consolidation of key political institution and even non-key institution. The existence and functioning of most of the aforementioned key elements of the democratic style of governance, is enough to qualify a political system as developed or developing. But inclusion of vibrant and prompt civil society organization will certainly made it complete and transparent.

4.0 Conclusion

In conclusion, the transformation of the Nigeria political system was made possible as a result of the active role played by civil society organizations, and continuous dynamism of the system depends on the autonomy and active role of civil society organizations, young and colonized nation-states are in dire need of the active role of civil society organizations, for the reason of gaps created by representative democracy between governments and their citizens, CSO's should fill that gap by keeping the governments on their toes, CSO's should endeavor to find means of funding themselves to reduce the chances of being manipulated by governments or foreign donors as well.

5.0 Recommendations

- i. Civil society organizations should not be seen as threat but partners in the maintenance of law and order in Nigeria.
- ii. Civil society organizations should be seen as pace-setters especially in the management of resource, accountability, transparency and justice.
- iii. Civil society organizations should be integrated into the policy making process because the acceptance or rejection of any policy depend on their active participation.
- iv. Civil society organizations should strive to have wide coverage to enable them educate people in the rural areas to develop political consciousness and confidence to resist inducement from politician because that is where the population is.
- v. There should be proper education concerning the roles or responsibilities of the civil society organizations to the political development of Nigeria, not to a particular group in Nigeria because they are instrument of promoting unity.
- vi. Civil society organizations should strive hard to be independent in terms of funds and finance, as it will allow them to be objective in their activities.

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READING PROBLEMS AMONG JUNIOR SECONDARY SCHOOLS STUDENTS, IN SOME SELECTED SCHOOLS IN NASSARAWA LOCAL GOVERNMENT AREA OF KANO STATE. (CAUSES AND THEIR MEASURES.)

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Abstract: This study was undertaken to discover the reading problems among Junior Secondary School Students. It covered two (2) randomly selected Junior Secondary Schools in Nassarawa Local Government Area of Kano State. In data collection, a reading passage was distributed to forty (40) randomly selected students, twenty (20) from each school. A questionnaire was also designed to collect data from five (5) English Teachers from each school regarding reading problems of their students in English, as well as the causes of the problems. Lastly, the study recommended that the students should be taught and exposed to the identified problems of reading among them with the aim of overcoming them.

1.0 Introduction

Nassarawa Local Government is one of the eight local governments located in the Kano State metropolis. Wkuje (1986) asserted that most of the secondary schools in Kano state are public schools; and some of the schools lack qualified English teachers, well equipped libraries as well as conducive atmosphere suitable for learning, to mention just few. The above mentioned problems may cause students to be unable to read and comprehend properly. The study was conducted in order to identify the causes of problems of reading among junior secondary school students and to offer some recommendations on how to overcome such problems.

2.0 The concept of Reading

Reading has been defined by many scholars: Obanya (2002) defined reading as 'interpreting written language and translating it into words and sentences that convey thought and ideas'. Palani, (2012) sees reading as the identification of the symbols and the association of appropriate meaning with them. It requires identification and comprehension. He further elaborated that comprehension skills help the learner to understand the meaning of words in isolation and in context. In fact, reading is a process of thinking, evaluating, judging, imagining, reasoning and problem solving. From another angle, Udo 1975 described reading as one of the four (4) basic skills in language learning. Chukuma et al (1997) view reading as a complex mental activity which involves the entire human information processing system. They go further to define reading as an essential tool for the acquisition of all kinds of human knowledge. For them, reading is a means whereby information stored in books can be obtained and utilized for a variety of purposes.

2.1 Reading problems/ faults

Any habit that reduces your silent reading speed makes you become a poor reader. Such habits include vocalization, sub vocalization, finger/pen-pointing, regression, to mention just few.

2.2 Poor reading habits

Chukuma (2008), identified the following poor/ bad reading habits:

- i. Vocalisation: (the habits of reading aloud when the texts should be read silently) some junior secondary schools students are of the habits of vocalising words or sentences while reading. A good read only reads without vocalisation.
- ii. Sub-vocalization: (the habit of internally repeating what is being read silently).
- iii. Pointing at words with finger or pen.
- iv. Eye movement / unnecessary regression.
- v. Reading word by word or concentrating on every word.
- vi. Poor visual perception of written symbols
- vii. Poor motivation or lack of interest in reading
- viii. Poor comprehension
- ix. Excessive eye fixation



2.3 The causes of reading problems/faults

In a study conducted by Obanya (2002), the following major causes of reading problems/faults among junior secondary school students are mentioned:

- i. Poor linguistics background: it is noted that children from poor linguistic background are often victims of language deprivation; such children language development is so poor that they are unable pin concept to words.
- ii. Poor school organization: this is common feature in most of our junior secondary schools in Nigeria. It is believed that poor school organization is a significant factor that results reading problems among students of most of our junior secondary schools. It is common nowadays to see congestion in our junior secondary schools. Sometimes one can find that there about 120 students in one classroom to be taught by a single teacher, instead of usual ratio of 1:40. This situation may without any doubt result in problem or failure in not only reading but also in academic activities.

Wkuje (1986) support this view by saying;

‘Nigeria had attain perhaps highest world record of record of educational expansion within the last decade the population in the primary and secondary schools had seriously affected the quality of education. In some junior secondary schools

the class size unmanageable and qualified teachers are few.

The few teachers therefore resort to large class teaching’.

- iii. Poor Teacher Training: this another factor that leads to reading problems in junior secondary schools, it is pity to see that most of our junior secondary schools teachers in Kano state are Grade II failure, Grade II referred or N.C.E. holders with spill-over. Few of them are qualified to teach or read and pass English examination at grade II, Diploma or N.C.E level.
- iv. Poor social environment: this is another factor that leads to poor reading ability especially in our junior secondary schools. It is common knowledge in Nigeria that majority of backward readers come from poor families, and lower socio economic groups. Social and environment factor are very active indicator of reading problems in Nigeria.

2.4 Types of Reading

Femi and Kemi (2010) identified the following types of reading:

- i. Skimming:- this is the technique used in reading in order to get general overview of the material without concentrating on details. This type of reading involves running the readers eye over a text in a quick manner to get an idea of the information contained in the text. The purpose of skimming may be to know the relevance of the material to the task at hand or get an idea or intention of the writer. It has been described as reading and looking process.
- ii. Scanning:- Scanning is the fastest reading strategy available. To scan is to look quickly, but very carefully. It is a technique employed when looking for a particular piece of information. The important thing is to browse through the text until the readers eyes are focussed on the required information which a name, a date or a word in a dictionary.
- iii. Extensive Reading:- This is reading for recreation, pleasure or enjoyment. It is kind of reading we do without any examination in view. It is the reading that takes place outside routing study. Every educated person is expected to participate in it so as to keep in contact with great minds and to widen the intellectual horizon of the reader. It also helps in sharpening language competence, performance and communication skills.
- iv. Intensive Reading:- Intensive reading is reading with maximum concentration. It is the reading strategy employed when preparing for examination. This kind of exercise is bound to lower the reading speed of a student. It is also known as study reading.

2.5 Reading Techniques



It is necessary to approach reading in an organized ways by which a student can apply to improve efficiency in the reading process. In order to achieve this, several reading techniques have been advanced by various experts as follows:

1. Robinson (1946) SQ3R

This technique has been developed by Francis Robinson for effective reading. It is a useful guide to students on how they should read and gain maximum understanding within a relatively short period of time. It also helps the reader to retain relevant information of what they have read, and to recall the information when it is needed.

The SQ3R reading technique is one of such methods which have been developed in 1946 aimed at helping students read better and comprehend more. It is also believed that the technique among the other technique is still the easiest and the best.

The SQ3R stands for:

S= Survey, Q= question, the 3R stand for: R1= read, R2= recite R3= review/revise.

2. Young's (1971) PERU

This is another reading technique which has been described by Young (1971) as follows:

-P stands for preview. To preview means to give a general overview of the material to be read.

-E stands for enquire. It involves the need to develop an inquisitive mood by generating questions.

-R stands for read. This involves critically reading through the whole passage in order to drive maximum comprehension from it.

-U stands for use. It means to use the information or points gained from the passage.

3 PQRST: this is another reading technique which has been initiated by Robinson (1972) the technique is described as follows:

P stands for preview

Q stands for question

R stands for read

S stands for summarize

T stands for test.

3.0 Methodology

The data was collected through reading passages, questionnaire, verbal interview and observations. Specifically, the primary data was obtain using a designed reading passages administered to fourty (40) randomly selected students from two (2) selected Junior Secondary Schools in the study area. Five (5) questionnaires were also distributed to five (5) English teachers from each school in this study, verbal interview and observations were also used in collecting data in the study.

3.1 Findings

Based on the reading passage administered to forty (40) randomly selected students from the selected schools, numbers of problems were encountered in the process of their reading. The data gathered from the two (2) schools are represented on the tables below.

Table1

Reading Problem	GSS Kawaji		GGSS Yankaba	
	No. Of students with reading problems	Percentage of reading problems	No. Of students with reading problems	Percentage of reading problems
Unnecessary Regression	12 out of 20	60%	10 out of 20	50%
Word Pointing	13 out of 20	65%	11 out of 20	55%



/fingering				
Vocalization	10 out of 20	50%	12 out of 20	60%
Head/eye movement	13 out of 20	65%	10 out 20	50%

Table 1 above shows that JSS3 students in GSS Kawaji have the higher percentage of problem of regression while reading with 60%. Word pointing or Fingering is another problem of reading, the table shows that GSS Kawaji has the highest number of students with the problem of word pointing or fingering in the process of reading with 65% while JSS2 students in GGSS Yankaba with 55%.

On the other hand, Vocalization was encountered by JSS2 students of GGSS Yankaba with 60% while JSS 3 students of GSS Kawaji have 50%.

The problems of head / eye movement in reading were encountered by JSS3 students of GSS Kawaji at 65% and JSS2 students of GGSS Yankaba at 50%.

3.2 Analysis of Teachers' questionnaires

Q1. Do the problems of reading arise from the students' lack of interest in reading?

(Yes or No)?

Table 1

Teacher's response	Frequency	Percentage
Yes	6	60%
No	4	40%
Total	10	100%

The above table shows that out of ten (10) questionnaires distributed to ten (10) English teachers, five (5) from GGSS Yankaba and five (5) from GSS Kawaji, the results show that six (6) teachers i.e. 60% agreed that the students reading problems could be traced to their lack of interest in reading, while four (4) of them i.e. 40% disagreed.

Q2. Could the students' poor background in English language be responsible for their poor reading ability? (Yes or No)?

Table 2

Teacher's response	Frequency	Percentage
Yes	8	80%
No	2	20%
Total	10	100%

Table 2 above reveals that eight (8) teachers agreed that the students' poor background can affect their reading ability. While two (2) teachers disagreed

Q3. Could lack of suitable reading materials be responsible for poor reading among Junior Secondary School Students? (Yes or No)?

Table 3

Teachers' response	Frequency	Percentage
Yes	7	70%



No	3	30%
Total	10	100%

Table 3 above shows that seven (7) teachers agreed that lack of suitable reading materials is also responsible for students' poor reading in Junior Secondary Schools, while three (3) teachers disagreed.

Q4. Could the students' poor learning environment be linked to their failure in reading?

(Yes or No)?

Table 4

Teachers' response	Frequency	Percentage
Yes	6	60%
No	4	40%
Total	10	100%

The finding in table 4 above shows that six (6) teachers agreed that poor learning environment can affect the reading ability of the students, while four (4) teachers disagreed.

4.0 Discussion of the finding

Based on the finding of this study, one would realize that, the reading problem among Junior Secondary School Students lies on the factors such as: students' poor background in English, this is because some parents were not educated; they cannot speak, let alone read in English language. It has been found that, right from home students tend to speak vernacular and pidgin which make them have difficulty in communicating in Standard English.

Likewise, some teachers of English language at junior Secondary Schools were not qualified to teach. Most of the teachers are diploma holders without teaching qualification, some are N.C.E dropped out. It is also established the students habits of pointing at word, eye/ head movement and vocalization while reading were done as a result of lack of training and proper guidance by the teachers, which could be attributed to lack of competent and qualified English teachers.

The study also shows that, lack of suitable and availability of English text books and scarcity of instructional materials for teaching effective reading, help in influencing reading problems to arise.

To read in English effectively, it has to do with the quality of teacher who knows the subject matter and effective methodology of imparting the knowledge.

Lack of library in some Junior Secondary Schools is another cause of reading problems to the students. This is because some of our junior Secondary Schools nowadays have no library, and those that have, are not well equipped.

5.0 Conclusion

This study examines the causes of reading problems in some selected Junior Secondary Schools in Nassarawa Local Government Kano, Kano State. Reading problem or failure is seen as a chronic inability of the brain to perceive, recognize, interpret and express codified signs and symbols. The major physical manifestation of reading problems highlighted in this study include: vocalization, head/ eye movement, word pointing or fingering and unnecessary regression.

Number of causes has been found as responsible for problem/ failure of reading among junior secondary schools students; they include poor linguistic background, poor social environment and poor teacher training.

Recommendations have been made based on the findings of this study with regard to the reading problems among Junior Secondary School Students in some selected Schools of Nassarawa Local Government, Kano State. The Recommendations made in this study, are with the aim to overcoming the stated problems.

6.0 Recommendations



- The students should be taught and exposed to the identified problems of reading with the aim to overcoming them.
- Each school should set up remedial class for students with deficiency in reading.
- Junior Secondary Schools Nassarawa Local Government, Kano state should be equipped with Library and students should be taught how to make best use of it.
- Government should employ more qualified English teachers.
- Government should encourage teachers by providing them with in service training in order to upgrade and broaden their knowledge and qualification.
- Teachers should be aware of the psychological and individual differences of the learners so as to be guiding them during the process of reading.

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Challenges of Teaching English Language in the ICT Era

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Abstract: *This paper analyses the challenges of teaching English language in the ICT era. The paper also reveals the challenges and problems faced teachers of English language when teaching by using ICT facilities. The paper further reveals that: lack of training, inadequate time, lack of adequate ICT facilities, lack of internet service, and lack of constant power supply are among the major challenges of teaching language English language in the ICT era. Moreover, the paper shows that teachers of English language may likely face some challenges in applying the ICT facilities in teaching English language. Lastly, the paper recommends that the authorities concerned should organize a professional training on teaching by using ICT facilities and teachers should actively participate, all the ICT facilities should be properly installed, monitored and maintained. Other researchers should also focus on digital competence and development of teachers in this ICT era.*

Keywords: challenges, teaching, ICT facilities, ICT era and English language.

1.0 Introduction

The Nigeria National ICT policy NNIP (2012) has made it imperative that country should consider the application of ICT to facilitate its rapid growth and development. This involves the development of ICT sector to drive and expand the national production in all sectors of economy. The Nigerian National Policy for Information Technology (2001) in its effort to integrate ICT into the Nigerian education system specifically in the area of teaching and learning has stated the following objectives:

- i) Making the use of ICT compulsory at educational institutions
- ii) Developing ICT curricular for all level of education
- iii) Working with international and domestic initiatives to transfer ICT knowledge
- iv) Using ICT in distance learning

Similarly, the National Policy on Education (2004) has clearly recognized the role of ICT in advancing knowledge and skills necessary for effective functioning of individuals in the modern world.

Nowadays, technology gives teachers a chance to use digital tools in teaching and learning situations. It also facilitates and supports teaching and learning of language to be a digital one in this digital era. Therefore, there is need to explore and find out the challenges or problems associated with the use of digital tools in teaching process.

Importance of Technology Application in Teaching English Language

Koua, (2013) was of the view that in terms of technology as a tool for teaching and learning of language skills, internet supports a learner centred and functional approach to knowledge. Kilickaya & Saferoglu, (2013) indicated that computer technology could improve the students' language skills. In fact, technology adds effect to language learning. Similarly, Zhytsa S.A., (2012) supported that technology had positive effect on experiential learning, motivation, enhancing students achievement, authentic materials for learning, greater interaction, individualization, independence from single source of information and global understanding.



Richard and Smith, (2002) asserted that computer in language teaching and learning is an activity which is parallel learning through other media. It can be used to facilitate the presentation of reading text. Sung et al., (2016) found that technology and internet devices give effects to the students' learning of speaking skills and oral performance.

Furthermore, Han, (2008) mentioned that computer can promote teaching and learning interaction between teachers and learners and it can also help classroom teaching with a variety of materials and approaches. Rahimi &Yadollahi, (2011) concluded that digital portable devices were used extensively in teaching and learning of language skills; and these tools/ applications facilitate the teaching and learning of oral skills. Alm, (2016) mentioned that blogging made a special bond between language learners which allows them to see each other as people rather than students. The use of mobile devices among students outside classroom is not something new. Wu (2018,) mentioned that learners need more guidance on how to use digital tools in order to facilitate the development of their language skills. Thus, learners must be monitored and supported by their teachers especially on how to use powerful digital tools for learning. Parvin & Salam, (2018,) found that the use of audio-visual content has positive impact in improving and encouraging interactive language class.

Many studies show that technology significantly improves the learners' language skills. For example, Nachoua, (2012) found that computer assisted learning is a motivating method and computers are beneficial tools to be used in foreign language classes in order to improve students' listening skill. Khoshsima & Khazayi (2017) mentioned that chatting in cyberspaces (telegram) as one of call based activities promotes twenty (20) high school students' speaking skill. Omar, (2014) found that computer-based teaching facilitates in improving students' reading comprehension.

In a study conducted by Anggeraini et al., (2019) found that the language teachers had intermediate digital literacy level. Generally speaking, a teacher has to improve his/her digital technology competence in teaching methods and develop professional learning continually along with new development and to comprehend that changes is flowing so fast and must accept and prepare for growth.

Challenges of using ICT facilities in Teaching and Learning Process.

Various writers (Mamman 2013, Kano 2013, Agyeman 2007, Imran & Ojewande 2013, Sunusi 2013) have stated that the use of technology in teaching English language in Nigeria is surrounded by numerous challenges which include:

- a) **Scarcity of ICT facilities, especially in rural area:** although many of the computer hardware components (CD/DVD drives, card reader/writer, hard disk, keyboard, modem, monitor , light pen etc) are known and available to teachers in the city, they are scarce to the teachers in rural area. (Omede, 2012) asserted that the availability of assistive technologies (touch screen, adaptive keyboard, voice recognition, etc remain not only a challenge but a vicious one.
- b) **Lack of training of Teachers on use of digital tools in teaching.** Most teachers lack training in the application of digital tools in teaching and learning process. Similarly, in many institutions there is no time allocated for the teaching of ICT to teachers and learners.
- c) **In adequate electric power supply.** Many parts of the country suffer from inadequate and unstable electricity in the country especially the rural area. This is considered as a serious challenge in the country.
- d) **Unstable internet service.** Despite the various policies designed by the government of Nigeria to ensure recognition of the use of ICT in teaching and learning process for national development, the problem of internet accessibility is still in existence.



- e) **Resistance to change by some teachers.** The use of ICT facilities in teaching and learning rely heavily on teachers. But there is often resistance by some teachers especially when they are under the management of school leaders who are not prepared to implement plans for the use of ICT at the school.
- f) **Poor maintenance of the ICT facilities.** Most of the ICT facilities installed in the educational institutions are poorly handled and maintained by the institutions. There are just few trained personnel in the technical area and the cost of maintenance usually requires high capital.
- g) **Inadequate time.** In most cases, many teachers are complaining about time especially in the classes where they are supposed to use ICT facilities in teaching, the time allocated for the period is usually not enough.

Conclusion

This paper investigates the challenges of teaching English language by using ICT facilities. The paper discovers that teachers of English face challenges in applying the ICT facilities to teach the language. It has also discovered that learners too have their own challenges while learning the language by using ICT facilities.

In this digital age, language teachers believe that digital tools give positive effects to the language teaching and learning, it helps the language teachers to create interesting atmosphere in teaching and learning situation, and digital tools facilitate the teachers in applying digital teaching .

Recommendations

This paper recommends the following:

- i. The authorities concerned should be organizing a training, seminar or workshop to language teachers and the teachers should actively participate.
- ii Training on how to use ICT facilities in language learning should also be organized to the learners.
- iii. All ICT facilities meant for teaching and learning of language should be properly installed, maintained and monitored.
- iv. It is recommended that the school authorities should consider allocating enough time for classes where teachers intend to apply the use ICT facilities in teaching and learning process.
- v. The paper recommends for other researchers to focus on the teachers' ICT competence and development to face the teachers' challenges in the use of ICT facilities in teaching process.

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Privatization and Commercialization of Public Enterprises as Strategy for Development in Nigeria: Issues, Challenges and Prospects

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Abstract: *Lately in Nigeria, there has been a policy shift to privatization and or commercialization of public enterprises from import substitution industrialization policy perused earlier, this was aimed at rolling back state involvement in the enterprises circle or enhancing their level of productivity and assuring overall sustainable national development. The fundamental belief about privatization and commercialization was that they will serve as the engine of economic growth and development. Owing to the fact that the policy's theoretical background was Neo-Liberal theories (market thesis). Theories that place market ahead of State in terms of efficient allocation of societal scarce resource, some fundamental assumptions of privatization and or commercialization are; they can improve mechanism of allocating societal resources, eliminate wastages and financial drains of public treasury, create jobs and reduce unemployment. Data used for the study was obtained using secondary sources (library and desk work) and its analysis was through qualitative method of analysis. The study recommends that there is the need to strengthen many legal issues with regards to privatization and commercialization like property right laws, so as to stop activities of speculators, capital flights and corrupt tendencies with regard to the bidding and selling of the national assets. This will facilitate achievement of the stated objectives of privatization or commercialization and subsequently facilitate enthronement of development and establishment of effective regulatory frame work to check and balance privatized and commercialized enterprises is obligatory.*

Key words: Privatization, commercialization, public enterprises, and development.

1.0 Introduction

Public enterprises were established to facilitate socio-economic development amongst many other objectives; in fact, the strategy of establishing public enterprises was very much in use in developing and developed countries all over the world. This is catalyzed by the pre-world War (II) expansion drive among other factors, the need to address the heavy toll on economic and social system brought by the great depression made industrial economies to adopt and practice the welfare state strategies, and much of the developing world embrace the state-dominated development strategy, Tsunabavyon & Ogbole (2014).

Nigeria was no exception in the belief that state owned enterprises has a role to play in promoting socio-economic development, prior to this shift in strategy. Nigeria at independence opted for liberal (open door) policy as the first economic strategy; the rationale for this strategy was to attract foreign direct investment for industrialization Ogbuabu (1995) cited in Orluwene (2014). But towards 1970 with the oil boom and apparent domination of Nigerian economy by foreign multi-national cooperation (companies) such as British Petroleum (BP), shell, Barclays Bank (Union Bank), Standard Bank (First Bank) and host of others, sparks a spirit of nationalism and the government of Nigeria at that particular time (1972) precisely dish out the Nigerian Enterprises Promotion Decree (NEPD), to pave way for the government to involve itself into economic activities. Ogbuabu (1995) cited in Orluwene (2014).

But Nigerian governments decided to relinquish their stake in the state owned enterprises and other partially owned enterprises. According to Adesenni (2011) cited in Mercy (2011) the government set up Bureau for Public Enterprise (BPE) with objectives of reducing or eliminating the drain of public treasury. It also seeks to eliminate corruption, modernize technology, strengthen capital market, reduce debt burden and fiscal deficit, and broaden the ownership of business. It is also believed that Privatization and Commercialization will promote generation of funds for the treasury, attract foreign investment and stem capital flight. In other views Tsunabavyon and Ogbole (2014) argued that the performance of Nigerian public enterprises, were compromised in many instances by the political leaders through the misuse of monopoly power and bureaucratic suffocations from supervisory ministries. They became over staffed, always in need of funds from budgetary allocations; the enterprises became tools of rewarding political patronage through appointments of key managerial positions such as directors and Boards members and other top positions.



This amongst other reasons is why this study wants to explore the success or other wise of the policy so far and equally assess its vibrancy as development strategy and also explore some challenges that may hinder the achievement of its objectives. It is also hoped that this study will serve as catalyst to future researchers and guidance to policy makers and technocrats.

2.0 THEORETICAL FRAMEWORK

This study uses the “New market economy” theory as theoretical guidance. This Theory is suitable for this study because it proposes strong state presence in market and commercial activities through oversight functions, rigorous but flexible regulation that even the regulators are to be regulated from time to time and above all the trust issue is addressed through the theory. Ogbu (2010) said trust is essential in financial transaction though ignored by much scientific literature; it forms the basis upon which the soul of financial transactions and treasury affairs are founded. To mention the horrible experience of market failures such as in the 1930’s and lately the global economic crisis of USA in 2008, it is proven beyond reasonable doubts that market alone cannot deliver what is required, an equilibrium need to be established between the role of state and markets, in the economy so that harmoniously they could usher the much desired development. Ogbu (2010)

2.1 THE NEW MARKET ECONOMY THEORY

The theory of new market economy was introduced by Professor Osita Ogbu in an attempt to dis-approve of Joseph Schumpeter’s work of “Creative destruction” which is a version of classical thought (theory), the Harvard economist (Schumpeter) tries to revive the works and thoughts of classical liberal economist. The theory asserts that as market forces destroys firms that err in their operations, they also reward those firms that take or employ right investment decisions, a sort of winner wins all and loser loses all just as in “invisible hands concept”, “creative destruction” is totally against state intervention in market affairs as it proposes self -correcting mechanism for the market. Ogbu (2010) was quick to trace the failure of Schumpeter’s theorizing and promotion of “creative destructions” where he said it is rather unfortunate that Schumpeter did not live long enough to witness the revolution of information and communication technology, which enhances globalization through creation of seamless economic boundaries and enhance the speed with which transactions are carried out, the merger options for failing or failed business.

This new development facilitates dependence and borderless transactions amongst Nation-states, they are termed the “New Realities”. The concept of new reality exposes the weakness of Schumpeterian ‘creative destructions’ and the market thesis in general enshrined in the concept of new realities are: Ogbu (2010)

- The “bigger the better” mentality associated with mergers;
- The attendant moral hazard of “too big to fail” behavior;
- Close link between wall street and mainstreet;
- The presence of systematic risks that makes it impossible for governments to ignore;
- A system that privatizes profit but socializes risk.

Professor Ogbu itemize some essential elements of the ‘New Market Economy’ theory which to him necessitated by the challenges posed by new realities on the theory of creative destruction which is by large extension of classical liberal and neo-classical theories. The elements are itemized below:

The Elements of “New Market Economy” theory

1. Strong institutions for positive value and cultural orientation (the unrestricted freedom of choice in a market society is not sustainable);
2. Strong taxation regime, including contingent tax;
3. Very robust regulatory regime;
 - Regulating the regulator(through oversight functions)
 - Strong audit technology for the regulator
 - Capacity for early warning system
 - A regulator of systematic risk
4. Strong role for the State;
5. A new focus on curbing private and public sector corruption including illicit financial flows;
6. Strong social security provision;
7. Rule of Law in the strictest sense;



8. Strong dose of patriotism and democratic ideals, democracy has universal value (Sen., 1999). Ethnicity has no negative effect on growth and development when there are full political rights (Collier and Gunning, 1999). Hence the need for electoral reform, that will guarantee the integrity of elections in Nigeria.

9. Strong corporate governance practices and regulation;

10. Knowledge based institutions with technocrats or techno-politicians managing the new market economy; and

11. Building character and trust, moderating greed and reckless risk behavior.

Osita Ogbu (2010).

There is a close linkage between the rationale for privatization and commercialization with the content of this theory, primary amongst the linkage is that, the theory attests to the supremacy of the market thesis, with some adjustments. Whereas privatization and commercialization are an upshot of structural adjustment programme, a programme that is well known to be promoted by the Breton wood duo. Closely related to the first linkage is that the theory is propounded on the premise of the concept of “new reality” which are limitations to the classical market thesis and new market economy theory builds on the experience of the realities to make the market thesis more efficient and development centric.

3.0 METHODOLOGY

The methodology of this study is library and desk work by scrutinizing through relevant secondary sources such as scholarly journals, magazine, relevant text books, newspapers and various internet sources, analysis of the data used in the study was through qualitative means of analysis, and some statistical expression will also be employed in some part of the study.

3.1 CONCEPTUAL CLARIFICATION AND REVIEWS OF SOME KEY CONCEPTS USED IN THE STUDY

PUBLIC ENTERPRISES: - Public enterprises are defined by Hughes (1998) as that statutory bodies or authorities that sells good and services in large quantity or scale, with the financial return accruing to the state its self. Rondennelli (2005) sees public enterprises as public entities that are runned for profit purposes; they seek to deliver socio-economic goods along with return on capital invested. Similarly Afolabi (2010) cited in Garuba(2015) define public enterprises as business organizations set up and financed by the state to provide essential services and goods to the public. They may be established by various levels or tiers of governments, their major priority is provision of services and goods at relatively cheaper price than that of private firms. This is to allow for affordability of the majority of the citizenry, which make them (public enterprises) remarkably different from the private firms that only relies on market forces to determine affordability. Public enterprises are also meant to facilitate socio-economic development, create employment opportunities, generate returns on the invested capitals, reduce or eliminate unwarranted imports.

There are many types of public enterprises, such as public utilities enterprises (electricity, water and sanitation services), transportation enterprises, financial service enterprises and many others. What makes them all equal is their ownership structure that consists of public interest either partially or completely. They may also possess bureaucratic structure that is different from usual ministerial set –ups. Some of the basic objectives of public enterprises are promotion of socio-economic development, reduction of importation of goods and services, creation of employment opportunities, to check the excesses of market, to re-distribute pay-ups, to secure national interest, and in some cases to change the nature of the economy from capitalism to socialism. Afolabi (2010) cited in Garuba (2015)

In Nigeria public enterprises flourish between 1970’s to early 80’s, the oil boom of the early 70’s was said to be the major catalyst in the proliferation of the state owned enterprises. Tsunabavyon and Ogbole (2014) reported that in the early 1980’s there are about seventy (70) federally owned state enterprises and host of others belonging to states and local government. Onah (2005) also suggested that Nigeria had an estimate of fifty (50) public enterprises at independence and about (200) by 1970 and when the country embarked upon reforms in 1987 there are about one thousand five hundred (1500) state owned enterprises. But somehow unfortunately many enterprises lost their ways of meeting to their objectives, and apparently became avenues of siphoning the state scarce resources through awards of inflated and bogus contracts, demand of capital grants from the budgetary allocations, stockpiling of huge debt obligations, which the state had to pay later. There are also other problems that facilitate the decline in the performance of public enterprises such as bureaucratic sophocation from supervisory ministries which in so many instances leads to corruption, undue political interpearance by the political elites; in so many instances some of the parastatals are runned like personal properties of influential political elites. In fact during military regime or authoritarian regimes the state owned enterprises are almost merged with government activities to have greater control over the state resources and political reasons, and in many cases for personal corrupt manifestations Rondennelli (2005).



These amongst many other reasons is why this paper wants explore, what is the causal agent of this horrible deviation from primary objectives that has bedeviled the state owned enterprises, that warrant their privatization or commercialization as development strategy. why and what are the possible way out of this quagmire, and can their privatization or commercialization serve as development tools, like they were established to achieve ?

3.2 PRIVATIZATION: -

The term privatization narrowly defined stands for transfer of government owned shareholding in designated enterprises to private shareholders, comprising individual and corporate bodies, and also broadly defined privatization is an umbrella term used to describe a variety of policies which encourage competition and emphasize the role of market forces in place of statutory restrictions of the state and monopoly powers. Zayyad (1992) cited in Tsunabavyon & Ogbole (2014).

The first definition relates to programmes of privatization without structural adjustment such as in the developed world e.g. U.K, France etc. the second definition relates to a programme of privatization as an integral part of structural adjustment programme such as what we have here in Nigeria.

A French sociologist Andre Deleon cited in Eneh O.C (2009), used privatization as four types of measures like ownership change, deregulation and liberalism of government policy towards the private sector, and the application of private sector management methods or criteria to the public sector. Similarly Tsunabavyon and Ogbole (2014) defined privatization as the systematic transfer of appropriate functions, activities or property from one public to the private sector, where services (production and consumption) can be regulated more efficiently by the market mechanism.

Any way we choose to define or view the concept of privatization its result will be at allocative efficiency of the resource and rolling back states from market activities. People tend to confuse privatization with commercialization, but there is a degree of difference between the two concepts.

3.3 COMMERCIALIZATION: -

Commercialization can be defined as the reorganization of enterprises, wholly or partially owned by the government, in which such commercialized enterprises shall operate as profit making commercial ventures without subvention from the government. A critical component of the commercialization programme in Nigeria is existence of performance contract, which is designed to govern the relationship between the government and commercialized enterprise.

Under the contract the Board of Management of the enterprise will guarantee the attainment of certain levels of financial and operational performance in return for enhanced operational autonomy Zayyad (1992) cited in Tsunabavyon and Ogbole (2014) we can see clearly the distinction between privatization and commercialization. While privatization is purely transfer of ownership strictly on market principle of offer and sale basis, commercialization is guided deregulation. The term commercialization includes injection of private sector management practice like decentralization or division of organizational structure, introduction of incentive plans and balance sheets restructuring. Cornia (1987) cited Eneh (2009), bottom line commercialization allows ownership of public partially or wholly but to be runned or managed like private entity, and where as in privatization states stakes in the ownership are completely absent. This is because in commercialization certain consideration are admissible such as security issues in telecommunication industries, an area where private firms are usually reluctant to invest such as water and sanitary service and generally where affordability issue became of great concern . Zayyad (1992) cited in Tsunabavyon and Ogbole (2014).

The rationale for privatization and commercialization is based on the premise that private sector is an instrument for attainment or realizing productive and allocative efficiency and higher economic growth, while the promotion of efficiency is from both economic and social ends, it is central to privatization and commercialization, Eneh (2009) itemized seven objectives of privatization and commercialization:

3.4 OBJECTIVES OF PRIVATIZATION AND COMMERCIALIZATION

- Reduction of government administrative and financial burden with respect to providing services
- Improve the operational efficiency, effectiveness and productivity of the public administration of enterprises and their contribution to the national economy
- Expand the role of the private sector in the economy, permitting the government to concentrate public resources on its role as provider of basic services, including health, education and social infrastructure.
- Increase competition and reduce monopoly
- Foster increased efficiency in the economy
- Promote wider participation by the people in the ownership and management of business; and



- Save revenue for government.

However in spite of these beautifully drafted objectives of privatization and commercialization they are not without criticism; Some scholars are of the opinion that privatization and commercialization hardly succeeded in fulfilling their objectives the views of Professor Sam Aluko as cited in Mercy (2011) was that, the assumption of the inherited efficiency of the private sector should be questioned.

He further argue that in Nigeria most of the private sector profits are not always the result of efficiency operation and increased productivity, but rather often represent money that private contractors made through inflated contracts, patronage and corruption. He also argues that most of the richest people in Nigeria's private sector make their money, through their public sector connection and influence.

Another aspect of privatization and commercialization that was criticized was its failure to generate employment like it was stated in its objectives, Abubakar (2011) cited in Mercy (2011) stated that many of the sold companies in Nigeria have collapsed, while others are dancing at the precipice. Some examples provided to support this argument are: -

- Privatized companies in the steel sector that use to employ up to 20,000 workers before now have less than 4,000 after the exercise.
- The daily times plc. That was acquired by the Folio Communication Ltd. In July 2004 has since been out of production/circulation, Folio inherited 900 staffs. But currently they have 120, and over 700 were sacked.

(Source) Abubakar (2011) cited in Mercy (2011)

Another angle through which the exercise was criticized was output and profitability, using 3 ratios viz returns on Share (ROS), Return on Asset (ROA) and Return on Equity (ROE) cited in Mercy (2011), some companies privatized recorded some negative changes after privatization for instance:

- Unic Insurance → (ROS) Fell from 14% before privatization to 7% after privatization
- Okumu Oil → (ROS) Fell from 19% to 17.6%
- Flour Mills → (ROS) Fell from 4.8% to 3.6%

In addition, in the senate probe of privatized enterprises, the Managing Director of Nigerian Insurance Company (NICON) acknowledges that NICON did not make any profit since its takeover.

Similarly the argument from the output section is that in the course of privatization, Nigeria as a country is being short charged for example according to Adewale (2010) cited in Mercy (2011) it was revealed at the senate panel on privatization sitting in October 2011 that Nigeria spent between (1973 – 1995) about =N= 100 billion naira to establish public enterprises. But more than a decade of privatization, just a meager =N= 1.6 billion was realized as gross earnings from the exercise, and most of the companies were sold at giveaway prices. For instance the \$3.2 billion Aluminum Smelter Company of Nigeria (ALSCON) located in Akwa Ibom State was sold to a Russian Firm, named Russel for the sum of \$130 million, while there was an agreement with the buyer to spend \$120 million on the dredging of the Imo River. This was even when it is clear that the two should have been fully separated. Another instance was the Nigerian Re-insurance cooperation that was worth N50 billion was sold to Global Fleet for just 1.5 billion naira. The incontrovertible evidence that the re-insurance was sold cheaply, is that the buyer, shortly after taking over the ownership, reportedly used only two of the company's asset to secure a 41 billion naira loan from Union Bank Plc. Stieglitz (2010) in his book making globalization work talked about this kind of short comings of privatization and commercialization. He referred to them as "*shock therapy*".

"I was among those who worried that rapid privatization not only generated lower income/revenue for governments desperately in need of money but undermine confidence of the market economy, without appropriate laws concerning cooperate governance, these might be massive theft of corporate assets by managers there would be incentives to strip assets rather than to build wealth I worried too about the huge in-equality to which privatization could give rise, Stieglitz (2010).

3.5 DEVELOPMENT: -

The concept of development like many other concepts of social science suffer from ambiguity of definition, as the concept is multi-dimensional, we will consider some relevant definitions to this study, according to Stiglitz (2006) Development is a process that involves every aspects of society, engaging the efforts of every one: Markets, Government, NGOs, Cooperatives, Non-profit institutions. He further asserts that a developing country that simply opens itself up to the outside world does not necessarily reap the fruits of globalization. Even if its gross domestic



product (GDP) increases, the growth may not be sustainable, or sustained and even if growth is sustained, most of its people may find themselves worse off, according to Orluwene (2014) sees development as the ability of the people to exploit, manipulate and control their physical environment as well as themselves and other individuals for the betterment of everybody and that of the humanity. It abhors any form of exploitation of man by man... it also entails the constant improvement in the capacity and ability of the people including the unending increase in their political, social, economic, cultural, psychological and technological capacity and awareness, among other things, to actualize themselves individually and collectively. Orluwene (2014)

Development like mentioned above is an elusive term in many times, because it is used synonymously with modernization and growth, but simply it implies progression from static and un-desirable condition to a higher and desirable condition. In the views of professor Dudley Seers development can be traced by examining what is happening to three fundamental macroeconomic indicators (unemployment, poverty, and in-equality). if these three has been declining then development is absent or very low and in situation where they are growing it can be said development is recorded, while Rostrow (1960) cited in Onah (2005) viewed development as basically developing traditional subsistence society to a modern society with an aim of attaining sustained growth.

At this juncture it's good to attempt some clarification between growth and development, development according to various scholars such as Schumpeter (1934), Hicks (1957), Madison (1970) all cited in Onah (2005) relates to exploring the untapped resources natural, human, economic, social or political. This is why it is considered as multi-dimensional or elusive concept. development is distinctively different from growth, because growth is measured in output, while development is measured in income like Gross National Product (GNP) and Gross National Income (GNI), while development is always seen economically as an increase in per capita income, growth is seen as increase in real per capita out-put. Madison (1970) was particularly assertive that development is to developing countries and growth is to developed countries, therefore we can say that growth is to what is in existence while development is seeking to open up what is untapped and put it to use, in other words the under-lying determinants that facilitate the economic growth can be referred to as agents of economic development for example change in production technique, social attitude ,consumption behaviours and patterns, change in institutional ways of carrying out tasks, Thus it is safe to assert that growth is not equal to development.

3.6 EVOLUTION OF DEVELOPMENT THINKING: BETWEEN THE STATE AND MARKET (THE GENESIS OF PRIVATIZATION OR COMMERCIALIZATION)

Eboh (2010) under this heading discusses the evolution of development thinking with regards to the roles played by states and markets. He traces the genesis of squabbling and wrestling between the choice of state and market in an attempt to entrust the allocative mechanism for the whole society, community or state in general, he began by narrating the first experience of market failure which lead to the great depression of the 1930's and consequently the world war (II). British economist by the name of Jean Maynard Keynes (1936) came up with economic model that require the involvement of government in the market, which hitherto is absolutely absent. The adaptation of this model facilitates state involvement into market activities, covered under the auspices of facilitation of development. This coincide with the period of reconstruction in European countries that where devastated by war, so states in Europe and united states of America established public enterprises as many as they can, while African and Asian countries follow suit. The 1950's to 1960's witness great thrust of state into market arena all in a bid to drive economic progress and development. Eboh (2010)

Using the above scenario of market failure arguments, states became the dominant custodians of allocation mechanism sighting numerous rationales for their involvement such as the private sector was considered to be too uncoordinated, too poorly developed and too narrowly focused on private interest. The newly de-colonized states in Africa in particular adopted strong development roles of nation states, Nigeria is among them. Eboh (2010)

But fiscal and macroeconomic instability that rocks these countries due to oil price shocks of 1970's to 1980's reveals weaknesses in the statist model such as lack of productivity and efficiency, huge deficits and debts, frequent requirement of budgetary grants, retaining of large number of redundant staffs and many more problems made the choice of public enterprises as key driver of development and economic progress a regrettable choice. This also gave the neo-liberalist an opportunity to bounce back with new vigor and enthusiasm, dishing out new models of market driven development strategies in the 1980's to early 1990's strengthening emphasis on the primacy of market model of allocative mechanism. The period witnessed great attention to market oriented reforms such as structural adjustment programmes (SAP), the period is also occasioned with macro-economic stability and balanced fiscal accounts, much of the developing world did better, but by the mid 1990's many of this developing countries Nigeria included started to show a sign of distress because the pro-market approach is witnessing new wave of challenges. Eboh (2010)



This time around it is the shallow strength of other relevant institutions that support both market and government that appears to be the initiator of the south east Asia economic crisis of 1997, and lately the global economic crisis that rocks united states of America in 2008 owing its origin from reckless financial transaction from giant players in the market. Thus it appears that market approach paradigm is necessary but not sufficient for development and growth, there is the need for strong institutions to facilitate the role to be played by both governments and market. Eboh (2010)

Therefore one can safely say that an equilibrium need to be established between the roles market and state could play in development and growth, through minimizing the intensity of state involvement in market activities, while ensuring robust regulations, intervention when necessary and inculcation of trust and ethical consideration in running market activities as Eboh (2010) asserts.

3.7 SUMMARY OF SOME KEY ARGUMENTS FOR PRIVATIZATION AND COMMERTIALIZATION

With the enterprise in the hands of private investors, it is argued that there will be economic efficiency, equity is very crucial in the provision of goods and services. The operators are always considering private income and wealth; so all strata of the population are considered, it is also argued that privatization reduces the burden on the dwindling resources of the government, It will help restructure the Nigerian Economy to relocate public funds to efficient users, create a self-sustaining culture, and attract foreign investors, while goods and services will reflect real value, Ibidunmi (2005) cited in Joseph (2010). It is also believed that it will also broaden the ownership of the market (by allowing spread of ownership to the general public through initial public offer (IPO). Similarly it is believed that it will strengthen the capital market and other markets as well through abstinence of government from the market. Privatization and commercialization if faithfully implemented will help erase lack of productivity and efficiency, thus create Employment; it will also help to stem the wave of nepotism, corruption usually associated with the Public enterprises, Eneh (2009).

3.8 SUMMARY OF SOME KEY ARGUMENTS AGAINST PRIVATIZATION & COMMERCIALIZATION

Ogwemoh (2003) cited in Joseph (2010) was of the opinion that privatization will lead to mass layoffs (sacking of employees) which is the case in most privatized public enterprises, Hermming and Mansor (1988) cited in Mercy (2011) asserts that establishment of public enterprises allows governments to pursue goals of social equity that market will ignore ordinarily for example it is very difficult to privatize the services of water provision because of its existential nature, Stiglitz (2006) was of the opinion that Hastened privatization and commercialization will promote capital flight, loss of national assets, and corruption on the corporate management side, If property laws where not adequately put in place. For instance the sale of Ajakuta steel company was rebuked because the company that bought the public asset removes some important machineries and tool and began to export them out of the country even before they commence operations. Professor Sam Aluko was of the opinion that the assumption of the inherent efficiency in the market system or private sector should be questioned, Mercy (2011). This is because market failure is not only real, but persistent for example in Nigeria the government establish Asset Management Company (AMCON) the primary mandate of this company is to take over listed companies that are in distress, This view is further justified by frequent crashing of big companies/multi-national corporation, and subsequently in many instances the National Economies.

Nigeria recently exits recession despite privatizing most of its public assets; just as it happen in United State of America few years back in (2008). This is what radical Marxist scholars referred to as socializing the risk and privatizing the profit.

3.9 SOME KEY PROSPECT OF PRIVATIZATION AND COMMERCIALIZATION POLICY

- If carefully implemented the policy of privatization and commercialization will always help the state to stabilize its balance of payments by reducing the states debt burden, reduce drain of public funds, generate revenue through expansion of taxable out-fits. Mercy (2011).
- The debacle of finding equilibrium between efficiency of allocation of resources and settling political objectives(balancing authority of coercion and profitability) is always at the center of decision making for governments, privatization and commercialization makes it easier for governments and bureaucrats to concentrate on critical issues of governance that ordinarily markets or private investors are reluctant to undertake, while abstaining from those that socially and economically can be taken care of by the market. Joseph (2010)
- Technological transfer is very important aspect of development, privatization and commercialization can facilitate this important aspect, through opening the doors for foreign investors and foreign direct investments



and through this advance technology is usually transferred. Rostrow (1960) cited in Onah (2005) was very persistent on the issue of technology so long as development is to be attained. Onah (2005)

- By adopting the policy of privatization and commercialization the markets will be strengthen both in scope and dimensions, and thus usher other multiplier effects such as competition, innovations, creation of employments, diversified economy and many other drivable. Mercy (2011).
- It is not only technological transfer that is important to the success of enterprises and other elements necessary for development, skilled human resources that will provide the much needed labor is also equally important, thus the same way privatization and commercialization open up ways for transfer of technology, will be the way skilled labor will be transferred, such as management skills, administrative skills, accounting and financial skills and many more. Onah (2005)
- Another potential implication of privatization and commercialization is that it is capable of stimulating and initiating moves to strengthen institutions that are critical to the success of the entire policy framework, i.e. regulatory agencies such as security exchange commission, and legislature for oversight functions, judiciary, this is because as mentioned earlier in this paper, strength and performance of this relevant institutions is a function of the policies success. Joseph (2010)

3.10 SOME KEY CHALLENGES FACING PRIVATIZATION AND COMMERCIALIZATION IN NIGERIA

- One of the fundamental challenge facing privatization and commercialization policy in Nigeria is political interference or politicization of the implementation of the policy, such as undue influence in the bidding process usually against the objective of the entire process and the will of general populace, it can also be seen in the way only some few wealthy citizens were able to benefit from the exercise. Garuba (2010)
- Secondly insecurity is playing vital role in reducing the prowess with which the policy is supposed to be implemented, insecurity directly or indirectly limits the flow of foreign investors and foreign direct investment, which will affect the diversity, functioning and effectiveness of the market as well as the economy in general. Odeh, (2011).
- Poor institutional capacity, it is revealed that poor institutional capacity is prominent amongst the causal agent of south east Asia financial crisis of the 1990's, Eboh (2010), Nigeria is no exception for example it will take some time for economic and financial crime commission (EFCC) to detect capital flight, frauds, and our judicial system is too slow and corrupt in many cases, similarly we only have one capital market that is the Nigerian stock exchange (NSE) and so no and forth. Eboh (2010),
- Closely related to the above point is poor legal frame work for instance mandatory insurance cover provided by Nigerian deposit insurance cooperation (NDIC) is abysmal and ridiculous, if a person is to lose all his money in a failed bank the amount he should receive maximum is fifty thousand Naira =N= (50,000.00) only from the insurers no matter how many millions he deposited with the bank, in this scenario it is clearly demonstrated that costumer protection law is at its lowest ebb, such is obtainable with labor protection laws, property right laws and so on. Mercy (2011).
- Poor funding, Adeyemo and Salami (2008) reported that in 2001 budget the national committee on privatization and bureau for public enterprises made budget proposal of =N= 1.4 billion, but only =N= 520 million was approved for them, this means that 61% of their proposal was cut away, it is for sure the cut will grossly effect their viability and performance no matter what yard stick the national assembly used in cutting away the funds.. Adeyemo and Salami (2008)
- Socio-political and ideological impediments, the theoretical underpinning of privatization and commercialization is structural reforms, which owe its roots to classical liberalist and neo-liberalist, therefore people are cautious of it and abhor it in many instances, particularly in Nigeria structural adjustment programmes are not welcomed at all, in fact civil society organizations of all ramification protested against it, as a result of that many Nigerians are not interested in anything that relate to the macroeconomic policy of structural adjustment programme privatization and commercialization happens to be one of its sub-set. Mercy (2011).



- Inaccessibility to credits or fund to run a business or buy shares, it is within the objective of privatization and commercialization to diversify the structure of ownership of the public enterprises, but unfortunately in Nigeria access to loans is very difficult if not impossible, more especially for beginners and small and medium enterprises, this also **limits the success of privatization and commercialization significantly.** Joseph (2010)

4.0 SUMMARY OF FINDINGS

This study was able to find out that; Development whether sought from private (market) allocation mechanism or public (state) allocation mechanism it remain the end and not means to an end; it was also acknowledged that privatization is usually suitable for growth model of development and thus more suitable for developed and not developing nations (Nigeria) inclusive. The study was also able to find that privatization and commercialization in Nigeria is not 100% successful sighting some example of lack of productivity, failure to generate employment, corruption in the process of bidding and sale of some of the national assets. It is also found that poor institutional and legal frameworks constitute impediments to the overall success of the macro-economic policy, for instance in Nigeria we only have one market (Nigerian stock exchange) which also belongs to the state. It is also found that relationships that exist between the other key societal institutions such as judiciary, legislature, security agencies, regulatory bureaus and even civil society organizations is critical and functional to the success of privatization and commercialization.

5.0 CONCLUSION

One salient and fundamental problem with state intervention into market activities was how to balance between authorities of coercion (power) with profitability; this is because central to the relationship of state and its citizens is social contracts, while inefficiency and lack of productivity remain the significant reason why public enterprises failed to perform to the expectation. Then closely followed by corruption if the dosage of new market economy theory will be applied in our daily financial and market activities privatization and or commercialization will be a lot more successful and usher the much desired development.

Privatization and commercialization programme if faithfully implemented has the potential of making the private sector the engine of growth of the economy and development, but the success of privatization and commercialization shouldn't be judged not by the sale, the contract itself, the price paid to the government, The survival or extension of the enterprise sold, but rather on the basis of the net benefit to the economy i.e. (development).

If privatization and commercialization must be used as development strategy then they must ensure better services at lower rate/prices as desired by consumers who often times are not bothered about economic philosophies. This is because if privatization and commercialization does not bring tangible benefits, the critiques of the strategy will assert that the benefits are not worth the cost and would feel justified.

Considering the aforementioned articles, literatures digested it will suffice for a discussant to conclude that as far as Nigeria is concerned privatization as a development measure is not within the league of countries like Nigeria, because one can argue that the embryonic stage/status of the market its self is challenge worthy of consideration, closely followed by embryonic status of business and entrepreneur class of the citizens to run the market, this challenge is so serious that in developed countries market are owned and operated by private entities, while here in Nigeria the market its self is substantially owned by the state.

Therefore this study will recommends adaptation of commercialization as against privatization, because one can argue that with commercialization there will be no asset strips, efficient driven management and administration of the enterprises, low retrenchment, serving other existential interests which are commonly overlooked by absolute private driven profit seeking enterprise. Development and not growth will be more insight with the aforementioned attributes rather than privatization.

6.0 RECOMMENDATIONS

- Since Nigeria already adopt privatization and commercialization as development strategy, any public enterprise that is sold and still not performing should be reacquired and re-sold through strong legal process.
- There is the need to strengthen many legal issues with regards to privatization and commercialization like property right laws, so as to stop activities of speculators, capital flights and corrupt tendencies with regard to the bidding and selling of the national assets. This will facilitate achievement of the stated objectives of privatization or commercialization and subsequently facilitate enthronement of development,



- Strengthening of institutions that facilitate the success of the policy is a must and urgent matter; therefore it is recommended that such institutions i.e. (BPE, SEC, and NSE) be given priority if the policy is to succeed.
- States should tilt heavily towards commercialization as oppose to complete privatization, the advantage of this is that commercialization allows for retainership of the public assets, while it will be administrated just like private entity

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REVIEW ON THE IMPACTS OF INFORMATION AND COMMUNICATION TECHNOLOGY IN THE CONTROL AND MANAGEMENT OF COVID-19

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Abstract: In the late 2019, a pandemic named Corona virus or Covid-19 emerged in Wuhan province of China. The pandemic spread rapidly across the world like wildfire! It poses great risks to almost every system of human activities.

Many countries employed various technologies and methods/procedures to manage and control the rapid spread of Covid-19 with the aims of getting rid of the virus, managing the existing cases, tackling the spread of the virus as well as how to recover after the pandemic. This study provides framework for the application of Mobile phones technology Webinar, Online Conference, Electronic Health System (e-Health) and Electronic Commerce System (e-Commerce) as an aspect of information and communication technology (ICT) in the control and management of Covid-19 at various phases; prevention, preparedness, response and recovery. The review was conducted by studying the existing literatures from scholars and reviewing how some countries adopt this technology in Covid-19 control and management. The result of the review indicates that the adoption of ICT greatly helps in reducing the spread of the virus as the countries that adopted the technology succeeded in controlling the spread of Covid-19 and recorded low mortality rates. The study provides recommendations highlighting how the use of ICT can be enhanced to achieve maximum efficiency in the control and management of Covid-19.

1.0 INTRODUCTION

Many organizations and individuals around the world, suffered from the challenges caused by the Novel Coronavirus (Covid-19) once the social distanced and the lockdowns enforced in some states and countries, in order to stop the spreads of that virus, after the World Health Organization (WHO) declared the Covid-19 a global pandemic. Information and Communication Technologies (ICTs) remained the major tools used to curtail the spread of that virus, and gives an opportunity to that individuals and organizations to run their activities using ICT hardware's and applications to connect themselves globally.

In this paper, we have highlighted, the method and procedures used to reduce the spread of Covid-19 pandemic using Information and Communication Technology, like Webinar, Online Conference, Electronic Health System (e-Health) and Electronic Commerce System (e-Commerce) among others.

The main objective of this study was to see how effective ICT solutions can be used towards managing global pandemic events by relieving the strain on healthcare. Education among other social gathering for physical distancing to avoid the spread of the corona virus. Currently, various distributed ICT systems gather, interpret and interact with each other in real-time, allowing vast volumes of data to be collected, processed and analyzed effectively. This dependency of ICT is increasing day by day, thus guaranteeing better physical distancing, relieving the strain on public as well as organizational resources, and providing better analytics within less time at lower cost.

In order to perform this review, we have consulted indexed journal papers and conference papers published over the time period from 2010 to 2020. Even though many researches have been carried out on various novel solutions and methods, no adequate research has been done on the practical utilization of such solutions in in the control of Covid-19, hence we included all the publications from 2010 to 2020. In addition, we also consulted some useful web links.

The term Information and Communication Technologies (ICTs), is a broader term for Information Technology (IT), which refers to all communication technologies, including the internet, wireless networks, cell phones, computers,



software, middleware, video-conferencing, social networking, and other media applications and services enabling users to access, retrieve, store, transmit, and manipulate information in a digital form.

ICTs are also used to refer to the convergence of media technology such as audio-visual and telephone networks with computer networks, by means of a unified system of cabling (including signal distribution and management) or link system. However, there is no universally accepted definition of ICTs considering that the concepts, methods and tools involved in ICTs are steadily evolving on an almost daily basis.

Although there is no single, universal definition of ICT, the term is generally accepted to mean all devices, networking components, applications and systems that combined allow people and organizations (i.e., businesses, nonprofit agencies, governments and criminal enterprises) to interact in the digital world.

The list of ICT components is exhaustive, and it continues to grow. Some components, such as computers and telephones have existed for decades. Others, such as smartphones, digital TVs and robots, are more recent entries.

Coronavirus disease 2019 (COVID-19) is defined as illness caused by a novel coronavirus called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2; formerly called 2019-nCoV). Which was first identified amid an outbreak of respiratory illness cases in Wuhan City, Hubei Province, China. It was initially reported to the World Health Organization (WHO) on December 31, 2019. On January 30, 2020, the WHO declared the COVID-19 outbreak a global health emergency. On March 11, 2020, the WHO declared COVID-19 a global pandemic, its first such designation since declaring H1N1 influenza a pandemic in 2009.

This study provides framework for the application of technology as an aspect of information and communication technology (ICT) in the control and management of Covid-19 at various phases; prevention, preparedness, response and recovery.

2.0 LITERATURE REVIEW

Over the years, ICT has evolved to integrate with various analytical tools and social media platforms like Facebook for extracting information from these platforms to support the prevention of disease spreading using social media analytics, involving the use of geographical information systems (GIS) to assist in epidemiologic analysis. Hai-Jew in [1] presents a brief discussion about how ICT can be used to detect, monitor and prevent novel zoonotic disease outbreaks at the national and global level. He further discusses how open-source and commercial technology can be used in the work of pandemic prevention and protection of human health.

There is no doubt that prevention is always better than letting bad things happen. In order to successfully prevent a disease outbreak before it becomes a global pandemic, a nation must have an effective public health surveillance system (PHS) in place. Sheikh, et al. discussed the importance of ICT-powered public health surveillance in order to face emerging infectious disease threats, evolving environmental and behavioural risk, and ever-changing epidemiologic trends. Wilson and Jumbert in discussed one aspect of ICT powered eHealth i.e public Health related to pandemic control. They present a five-layered framework to address the management issues of eHealth based on the



example of a pandemic control system. Li et al, have developed a novel method for eHealth readiness evaluation of a pandemic from the perspective of healthcare organizations and providers.

ICT-driven solutions for local and global communities aimed at facilitating a rapid response to emergency in public health. In terms of pandemic outbreaks like HIV/AIDS, they discuss the use of ICT to meet the training and educational needs of the public and health workers. They also discuss how mobile devices such as pagers, smart mobile devices, personal digital assistants and tablet computers can play a key role in emergencies, which signifies the usefulness of eHealth solutions. They further mention that for the following reasons these eHealth related technologies are highly effective when managing pandemic.

- 1 Mobile devices are reachable anywhere and any time
- 2 Mobile devices are traceable through GPS.
- 3 Mobile devices can quickly obtain information (photos, video footage) and communicate under any situation

A research report on China's emergency response to the SARS crisis, stating that it is necessary to protect global public health by coordination through global collaboration. They also note that developing countries possess comparatively fewer ICT driven technological resources to cope with emergencies in public health.

Based on the growing literature highlighted above and in the next section, coupled with the rise of digital technologies in terms of social networking sites, virtual conferencing, etc. there is alternative thoughts and approaches to maintaining social connections and activities during the crisis. In general, this growth in scholarly research illustrates a fast-moving arena within the fields of sociology, general social science, computer science and Geon technology. In addition to a series of national and international research projects focusing on the various impacts and roles that technology can play within society

3.0 METHODOLOGY

The review was conducted by intensive study of the existing literatures from scholars and reviewing how some countries adopted information technology in Covid-19 control and management.

4.0 RESULT

Countries that employed ICT in the control and management of covid-19 has recorded various degrees of success in tackling the risks of the pandemic and its fatality as a result these countries maintained low mortality rates. Technological concepts such mobile phones technology, artificial intelligence, web-based toolkits, robotics were mostly employed by several countries. The table below shows the countries, the digital technology used, the functions as well as the case fatality recorded by the countries.



Table1 Digital technologies used in covid-19 control and management

Country	Digital Technology	Functions	Case fatality (%)
Singapore	Mobile phone applications Artificial Intelligence Telemedicine	Contact tracing and isolation Screening for infection Clinical management	0.1
Iceland	Artificial intelligence Digital thermometers Web-based toolkits	Screening for infection Quarantine and self-isolation	0.6
South Korea	Mobile phone applications Security cameras Artificial intelligence	Emergency alerts and quarantine Tracking and contact tracing Facial recognition and isolation	1.1
Canada	Mobile phone application Telemedicine Robotics	Contact tracking and tracing. Diagnostics and clinical management	1.8
Germany	Global Positioning System Mobile phone technology Wearable technology	Contact tracking Tracing and quarantine	2.4
Australia	Digital camera and recorders Mobile phone application Telemedicine	Quarantine and self-isolation Clinical management	2.8
China	Mobile phone application and wearable technology Artificial intelligence Global positioning system Telemedicine	Tracking Screening for infection Quarantine and self-isolation Clinical management	4.6
Taiwan	Smartphones and wearable technology Digital thermometers Artificial intelligence Global poisoning system	Tracking Screening for infection Quarantine	5.0

5.0 CONCLUSION

The adoption of ICT in the control and management of covid-19 helps many countries in tackling the rapid spread of the pandemic and maintained low mortality rates. Countries that readily deployed the technology in the prevention, preparedness and response stages were successful in managing the risks and burdens of the pandemic. It is recommended that other countries, especially African countries to adopts similar technology to curve the risks of pandemics. The use of digital technology in the control and management of covid-19 can be enhanced by using automated applications and devices that do not require continuous access to network especially in areas that lack constant power and network coverage. To achieve global implementation and utilization of ICT during pandemic, there should be an intervention in terms of broadband access, as well as investment in technology and infrastructures.

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