

# Impact of Telecommunication System in Ekiti State, Nigeria

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**Abstract-** This paper investigated the impact of Telecommunication System in Ekiti State, Nigeria. The study adopted descriptive research design of the survey type which was questionnaire based. The targeted population for the study was all the users of telecommunication systems in Ado Ekiti Local Government Area of Ekiti State, Nigeria. A simple random sampling technique was used to select one hundred (100) people (male and female) from Ado LGA of Ekiti State. A well structured questionnaire was used to elicit relevant information from the respondents to answer the five (5) generated research questions of the study. Data were analysed using frequency counts and Chi Square statistical analysis. The findings of this study showed that Telecommunication system play vital role in Ekiti State and Nigeria at large. The role played by Telecommunication cannot be substituted with any other facility. It was recommended among others that enabling environment should be provided for Telecommunication facilities in Ekiti State and Nigeria in general; Telecommunication facilities should be affordable by every citizen in Nigeria; Government should subsidize the cost of Telecommunication in the country because of its importance in the society; and every sector of Nigeria economy should adopt the use of Telecommunication system for their efficient performance.

**Index Terms-** Impact, Telecommunication, Communication system and Technology

## I. INTRODUCTION

The world has become a global village with telecommunication being an indispensable tool in the entire process of globalization. However, it is not in dispute that Telecommunications and Information Technology (IT) play essential roles in this process. This is obviously why development in this vital sector over the years has been phenomenal all over the world. In fact, this is why emerging trends in socio - economic growth shows high premium being placed on Information and Communication Technology (ICT), by nations, organizations and homes. Nigeria, fortunately, has not been left out of this race for rapid development in the telecom industry. Unlike in the past, governments consider telecommunications service to be so vital to national interest and economic development that it was placed directly under their control in most countries until fairly recently, when deregulation and competition were introduced. These recent advances in telecommunications technology have been an important vehicle in permitting information exchange to develop as a valuable commodity for moving the country into post industrial and

information based economic growth. In this present world, a modern telecommunication infrastructural development is not only essential for domestic economic growth, but is a prerequisite for participation in increasingly competitive world markets and for attracting new investments.

Telecommunication is the transmission of encoded sound, pictures, or data over significant distances, using radio signals or electrical or optical lines [9]. In earlier times, telecommunications involved the use of visual signals, such as beacons, smoke signals, semaphore telegraphs, signal flags, and optical heliographs, or audio messages via coded drumbeats, lung-blown horns, or sent by loud whistles. In the modern age of electricity and electronics, telecommunications now also includes the use of electrical devices such as the telegraph, telephone, and teleprinter, as well as the use of radio and microwave communications, as well as fiber optics and their associated electronics, plus the use of the orbiting satellites and the Internet. Telecommunications is an essential mode of communication. This technology allows us to speak to someone thousands of miles away instantly. Within seconds we can be connected with family and friends. Over the last 100 years telecommunications has expanded across the entire world. We also have the ability to communicate from just about anywhere with a cell phone. Using the telephone is a wonderful privilege that people can easily take for granted because it has become so easy to just pick up the phone and call.

Communication plays very important role in the human life. Since the moments of our existence we communicate our wants and needs. In the earlier days communication was very difficult due to the lack of proper means of communication. If anybody wanted to convey a message to a person who is living far away, that message used to be sent with the help of human being only. For a longer distance and more detailed message pigeons post was used. These all means were very costly, uncertain and time consuming also. Because of all these reasons there was a great need of efficient means of communication to save time and money and hard work.

Use of various means of telecommunication now becomes an integrated part of society. Information found to be one of the most important elements for the efficient growth of an economy. With efficient use of telecommunication one can remove various constraints of all the sectors in the economy resulting into increased productivity and better administration. Effective controlling mechanism can be possible only through better communication and with better use of telecommunication equipments. In the developing countries earlier telecommunication was a big problem because all the means of communications were confined to the rich people only. But with the revolution in this sector now all the means are also available

to middle and lower class people who play vital role in the growth of economy of any country.

In telecommunication, a communications system is a collection of individual communication networks, transmission systems, relay stations, tributary stations, and data terminal equipment (DTE) usually capable of interconnection and interoperation to form an integrated whole. The components of a communications system serve a common purpose, are technically compatible, use common procedures, respond to controls, and operate in unison. Telecommunications is a method of communication (e.g., for sports broadcasting, mass media, journalism, etc.). A communications subsystem is a functional unit or operational assembly that is smaller than the larger assembly under consideration.

An optical communication system is any form of telecommunication that uses light as the transmission medium. Equipment consists of a transmitter, which encodes a *message* into an optical signal, a channel, which carries the signal to its destination, and a receiver, which reproduces the message from the received optical signal. Fibre-optic communication systems transmit information from one place to another by sending light through an optical fibre. The light forms an electromagnetic carrier wave that is modulated to carry information.

A radio communication system is composed of several communications subsystems that give exterior communications capabilities. A radio communication system comprises a transmitting conductor in which electrical oscillations or currents are produced and which is arranged to cause such currents or oscillations to be propagated through the free space medium from one point to another remote there from and a receiving conductor at such distant point adapted to be excited by the oscillations or currents propagated from the transmitter. Power line communication systems operate by impressing a modulated carrier signal on power wires. Different types of powerline communications use different frequency bands, depending on the signal transmission characteristics of the power wiring used. Since the power wiring system was originally intended for transmission of AC power, the power wire circuits have only a limited ability to carry higher frequencies. The propagation problem is a limiting factor for each type of power line communications.

A duplex communication system is a system composed of two connected parties or devices which can communicate with one another in both directions. The term *duplex* is used when describing communication between two parties or devices. Duplex systems are employed in nearly all communications networks, either to allow for a communication "two-way street" between two connected parties or to provide a "reverse path" for the monitoring and remote adjustment of equipment in the field. A tactical communications system is a communications system that (a) is used within, or in direct support of, tactical forces, (b) is designed to meet the requirements of changing tactical situations and varying environmental conditions, (c) provides securable communications, such as voice, data, and video, among mobile users to facilitate command within, and in support of, tactical forces, and (d) usually requires extremely short installation times, usually on the order of hours, in order to meet the requirements of frequent relocation.

GSM mobile communication is one of the most explosive developments ever to have taken place in the telecommunications industry [8]. Combining the convenience of mobility with the rich multi-media content of the Internet and with the integration of the mobile telephone with palm-sized computers, cameras and content related information makes it almost inevitable that the ubiquitous access point to the electronic information is not the PC but rather some form of mobile appliance.

### Impact of Telecommunication

According to [2], GSM facilitates economic development as it provides easy and effective communication needed to stimulate and promote trade between Nigeria and its foreign partners in the world. Even at home, it plays a significant role in communicating government programmes. Above all, it encourages investment which in the long run promotes employment opportunities.

According to a report in [11], government treasury has been boosted by payment of over 200 billion Naira in taxes and levies. National productivity has also been enhanced as travel times and associated risks have been reduced, business communications improve and the rural-urban divide narrowed. Social and family relationships and the security situation have also been significantly enhanced.

Adeyeye in [8] noted that telecommunication has discouraged rural-urban migration, now with GSM and Internet people travel to cities without boarding a vehicle. The introduction of GSM also has potential for reducing crime. Accessibility to phone services ensures quick calls to security operations when the need arises as well as informing fire stations during fire incidents to save lives and properties. To [1], GSM is used by Nigerians mostly to communicate with another. He explained that students used it to communicate with their course mates, friends, lecturers and family relatives. Additionally, family matters, finance, and academic matters constitute the topics/ subject of mobile communication for a majority of students. Mobile phones limit the need for students to travel as well as facilitating the exchange of information as the need may arise.

GSM activities have increased and promote competition in the industry, resulting in an exponential growth in the number of telephone lines. It is instructive to note that while connected lines only grew at an average of 10,000 lines per annum in the four decades between independence in 1960 and end of 2000, in the last two years, an average growth rate of 1 million lines per annum was attained. As of September 2003, Nigeria had attained over 3 million lines, (2.3 million of which were digital mobile lines). Total tele-density, which had been just 0.4 lines per 100 inhabitants in 1999 stood at 2.6 per 100 inhabitants by September, 2003.

The emergence of Telecommunication has led to improvements in efficiency and productivity, reductions in transaction costs, increased service innovation and better quality of life for the rural dwellers. Close to 2,000 persons have been directly employed by the GSM operators and an estimated 400,000 Nigerians are benefiting from indirect employment generated by the GSM operators [5]. Indirect employment has also been created through contract awards to construction firms, research companies and media consultants. In the financial

sector, enterprising banks have designed innovative products that leverage the use of GSM.

The emergence of Telecommunication has also led to the return of significant numbers of Nigerians from abroad. These are telecom professionals who have come back to build the country's communications sector. Moreover, the GSM explosion has given birth to a new class of entrepreneurs who might otherwise have been unemployed. There is a nationwide network of dealers, vendors, GSM accessory sellers and the ubiquitous "umbrella-stand" operators, who interestingly received a special mention in a recent ITU publication for the service they are rendering to the Nigerian public.

**Medical System:** Healthcare telecommunications encompasses a vast range of equipment and services. Whereas previously the stalwart PBX was the primary healthcare telecom equipment, now routers, integration systems, ATM systems, videoconferencing systems, security systems, and call centers are joining the mix. Videoconferencing systems, integration systems, and Internet development systems are poised to represent significant aspect of healthcare telecommunications.

An integrated computerized patient record system means the time required to access radiology film has dropped from 24 hours to 3.5 seconds. Purchasing decisions are often shared by a coalition of surgeons, nursing staff, and hospital administrators, with purchasing decisions taking into account whether a product reduces the cost of treatment and/or attracts additional patients to a hospital. All of these factors, along with competition, have contributed to continuing reductions in prices for products.

Internet technology has enabled a new way to deliver healthcare solutions. Under the application services provider (ASP) model information solutions are delivered to hospitals from a remote location.

**Business and Industries:** Telecommunication has revolutionized the phase of business around the world. Local businesses have become international due to a simple website. I.T. has helped businesses in advertising. I.T. has helped in customer service, huge corporations like Microsoft attend to customer needs through email and chat services. Networking internal and external in organizations has improved the working of businesses. Staffs and clients likewise can get in touch with the managers for feedback, progress reports and extensions.

Communication has bloomed two business organizations if they need to work together can easily do so. Hotmail, when merged with MSN was easy since the service was online. Business these days require a lot of planning, due to high tech organization systems on computers, planning can be done on an organized pattern, with schedule formats, grant charts etc. Huge databases can now be controlled and stored on network and backup drives. Accessibility of files also has become an easy task with series of password keys and shared folders. Cash transactions are easily made, delay in reduced hence giving liquidity to business.

**Education System: E-learning** includes all forms of electronically supported learning and teaching, and more recently Edutech. The information and communication systems, whether networked learning or not, serve as specific media to implement the learning process. The term will still most likely be utilized to reference out-of-classroom and in-classroom educational

experiences via technology, even as advances continue in regard to devices and curriculum.

E-learning is the computer and network-enabled transfer of skills and knowledge. E-learning applications and processes include Web-based learning, computer-based learning, virtual education opportunities and digital collaboration. Content is delivered via the Internet, intranet/extranet, audio or video tape, satellite TV, and CD-ROM. It can be self-paced or instructor-led and includes media in the form of text, image, animation, streaming video and audio.

**Social Impact:** Telecommunication has played a significant role in social relationships. Nevertheless devices like the telephone system were originally advertised with an emphasis on the practical dimensions of the device (such as the ability to conduct business or order home services) as opposed to the social dimensions. It was not until the late 1920s and 1930s that the social dimensions of the device became a prominent theme in telephone advertisements. New promotions started appealing to consumers' emotions, stressing the importance of social conversations and staying connected to family and friends.

Since then the role that telecommunications has played in social relations has become increasingly important. In recent years, the popularity of social networking sites has increased dramatically. These sites allow users to communicate with each other as well as post photographs, events and profiles for others to see. The profiles can list a person's age, interests, sexual preference and relationship status. In this way, these sites can play important role in everything from organising social engagements to courtship. Prior to social networking sites, technologies like short message services (SMS) and the telephone also had a significant impact on social interactions

In cultural terms, telecommunication has increased the public's ability to access to music and film. With television, people can watch films they have not seen before in their own home without having to travel to the video store or cinema. With radio and the Internet, people can listen to music they have not heard before without having to travel to the music store. Telecommunication has also transformed the way people receive their news.

The objective of this paper is to examine the impact of telecommunication in different areas in Ado local government Area , Ekiti State, Nigeria. Areas like: Its impact on the Economy; Employment Opportunities; Time Management; and Crime Reduction in Ado local government area, Ekiti State.

## II. RESEARCH QUESTIONS

The following research questions were generated and tested at  $p < 0.05$ :

1. Does the emergence of telecommunication have any relations with Nigeria economy?
2. Does the emergence of telecommunication provide job opportunities to dwellers in Nigeria?
3. Has the emergence of telecommunications reduce the rate of crime in Nigeria?
4. Of what relative impact is the emergence of telecommunication on time management?

- Has the emergence of telecommunication improve the activities in education system, medical system, banking system and industries?

### III. METHODOLOGY

The study adopted descriptive research design of the survey type which was questionnaire based. The population of the study was all the users of telecommunication systems in Ado Ekiti Local Government Area of Ekiti State, Nigeria. A simple random sampling technique was used to select the sample for this study. The sample was made up of one hundred (100) people (male and female) from Ado LGA of Ekiti State. A well structured questionnaire was used to elicit relevant information from the respondents to answer the five (5) generated research questions. The researchers administered the instrument on the respondents. The data collected were analyzed using Chi-square analysis.

### IV. RESULTS AND DISCUSSION

#### Research Questions 1

Does the introduction of telecommunication have any relations with Nigeria economy?

**Table 1: Chi- Square Analysis of Data on Telecommunication and Nigeria Economy**

S / N	ITEMS	S A	A	D	SD	X <sup>2</sup> -cal	x <sup>2</sup> -tab	df
1	Telecommunication has improved the standard of living in Nigeria?	74	21	3	2	137.20		
2	Every sector of the economy in Nigeria has benefited from telecommunication	67	30	2	1	115.76	7.82	3
3	Telecommunication is not relevant to all, because it is expensive to maintain	6	4	6	25	101.04		
4	Telecommunication is of no impact on Nigeria rural economy	2	3	1	80	165.52		
5	Telecommunication is	28	12	4	20	47.52		

meant for high income earners							
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P < 0.05

The result in Table 1. reveals that  $x^2$ -cal = 137.20,115.76,101.04,165.52 and 47.52 for item No 1,2,3,4 and 5 respectively in research question one. while  $x^2$ -tab = 7.82 showing that  $x^2$ -calculated is greater than  $x^2$ -table value at p <0.05 and df=3 (i.e.  $x^2$ -cal >  $x^2$ -tab) in all cases. Therefore, the result is significant, showing that Telecommunication has significant relationship with Nigeria economy.

#### Research Question 2

Does the introduction of telecommunication provide job opportunities to the dwellers in Nigeria?

**Table 2: Chi- Square Analysis of Data on Telecommunication and Job opportunities for the dwellers in Nigeria**

S / N	ITEMS	S A	A	D	S D	X <sup>2</sup> -cal	x <sup>2</sup> -tab	df	Rem ark
1	The emergence of telecommunication (e.g. GSM, Internet etc.) in Nigeria encourage small scale business thereby reducing employment.	43	54	2	1	90.80			
2	Telecommunication has provided a source of income to many young school leavers.	65	25	4	6	96.08	7.82	3	*S
3	Telecommunication had reduced poverty in Nigeria	34	26	2	1	125.20	5.04		
4	Telecommunication provides employment opportunities for only a few influential Nigerians	71	24	3	0	89.18			

5	Telecommunication provides holiday job for many students	76	23	1	0				
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P < 0.05

The result in Table 2. reveals that  $\chi^2$ -cal = 90.80, 96.08, 125.20, and 89.18 for item No 1,2,4 and 5 respectively in research question Two. While  $\chi^2$ -tab = 7.82 showing that  $\chi^2$ -calculated is greater than  $\chi^2$ -table value at p <0.05 and df=3 (i.e.  $\chi^2$ -cal >  $\chi^2$ -tab) in all cases. But item No 3 is not significant, because  $\chi^2$ -cal =5.04 which is less than  $\chi^2$ -tab = 7.82 showing that Telecommunication has not reduce poverty in Nigeria. But on the average therefore, the result is significant, showing that Telecommunication provides job opportunity to the Nigeria dwellers.

**Research Question 3**

Of what relative impact is the introduction of telecommunication on time management?

**Table 3: Chi- Square Analysis of Data on Telecommunication and Time Management**

S / N	ITEMS	S A	A	D	S D	X <sup>2</sup> -cal	x <sup>2</sup> -tab	d f	Rem ark
1	Nigerians are now more time conscious with the advent of telecommunication	74	21	3	2	17.20	7.82	3	*S
2	Telecommunication is time consuming (internet, GSM etc)	10	10	6	1	33.52			
3	Telecommunication encourages time management	65	14	1	1	44.96			
4	Telecommunication discourages time spent on unwarranted journey	84	3	1	3	96.00			
5	Telecommunication enhances proper planning and	68	12	4	1	51.76			

execution of private and public programmes.									
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P < 0.05

The result in Table 3. reveals that  $\chi^2$ -cal = 17.20,96.00, 33.52,51.76 and 44.96 for item No 1,2,3,4 and 5 respectively in research question Three. while  $\chi^2$ -tab = 7.82 showing that  $\chi^2$ -calculated is greater than  $\chi^2$ -table value at p <0.05 and df=3 (i.e.  $\chi^2$ -cal >  $\chi^2$ -tab) in all cases. Therefore, the result is significant, showing that Telecommunication encourages time management.

**Research Question 4**

Has the emergence of telecommunications reduce the rate of crime in Nigeria?

**Table 4: Chi- Square Analysis of Data on Telecommunication and Crime rate in Nigeria**

S/ N	ITEMS	S A	A	D	S D	X <sup>2</sup> -cal	x <sup>2</sup> -tab	d f
1.	Telecommunication has increased the rate of crime in Nigeria	23	14	4	2	23.04	7.82	3
2.	Telecommunication encourages dishonesty among Nigerians	5	25	5	6	81.36		
3.	The emergence of telecommunication assists in reporting and detecting criminal's activities in the society. (through the use of GSM, Biometrics).	35	28	2	1	186.96		
4.	Telecommunication has aided the activities of armed robbers	20	3	2	5	89.84		
5.	Emergence	6	23	1	5	71.28		

	of telecommunication had dramatically increased fraudulent activities in Nigeria			9	2			
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P < 0.05

The result in Table 4. reveals that  $\chi^2$ -cal = 23.04, 71.28, 81.36, 186.96 and 89.84 for item No 1,2,3,4 and 5 respectively in research question four. while  $\chi^2$ -tab = 7.82 showing that  $\chi^2$ -calculated is greater than  $\chi^2$ -table value at p < 0.05 and df=3 (i.e.  $\chi^2$ -cal >  $\chi^2$ -tab) in all cases. Therefore, the result is significant, showing that Telecommunication reduces crime rate in Nigeria.

**Research Question 5**

Has the emergence of telecommunication improve the activities in Education system, medical system, banking system and industries?

**Table 5: Chi- Square Analysis of Data on Telecommunication and activities in Education system, medical system, banking system and industries.**

S/N	ITEMS	S A	A	D	S D	X <sup>2</sup> -cal	x <sup>2</sup> -tab	d f	Remark
1.	Telecommunication has increased the teaching and learning skills in educational system. (E-learning, internet facilities, computer etc)	28	42	1 2	1 8	20.64	7.82	3	*S
2.	Telecommunication helps to improve the medical system	55	25	5	1 5	23.12			
3.	Emergence of telecommunication helps to improve the activities in the banking sector. (E-	35	28	2 1	1 6	34.16			

	banking system, internet facilities)							
4.	Telecommunication has help to improve the services rendered in industries. (GSM, Internet)	28	43	1 1	1 8			
5.	Emergence of telecommunication has facilitates the mode of business transaction. (E-business, internet services)	43	33	4	2 0			

P < 0.05

The result in Table 5. reveals that  $\chi^2$ -cal = 20.64, 56.00, 8.24, 23.12 and 34.16 for item No 1,2,3,4 and 5 respectively in research question five. While  $\chi^2$ -tab = 7.82 showing that  $\chi^2$ -calculated is greater than  $\chi^2$ -table value at p < 0.05 and df=3 (i.e.  $\chi^2$ -cal >  $\chi^2$ -tab) in all cases. Therefore, the result is significant, showing that Telecommunication improves the activities in Education system, medical system, banking system and industries.

**V. DISCUSSION**

The results of the study were discussed based on the general questions:

The result in Table 1. reveals that  $\chi^2$ -cal = 137.20, 115.76, 101.04, 165.52 and 47.52 for item No 1,2,3,4 and 5 respectively in research question one. while  $\chi^2$ -tab = 7.82 showing that  $\chi^2$ -calculated is greater than  $\chi^2$ -table value at p < 0.05 and df=3 (i.e.  $\chi^2$ -cal >  $\chi^2$ -tab) in all cases. Therefore, the result is significant, showing that Telecommunication has significant relationship with Nigeria economy.

Also, the result in Table 2. reveals that  $\chi^2$ -cal = 90.80, 96.08, 125.20, and 89.18 for item No 1,2,4 and 5 respectively in research question Two. While  $\chi^2$ -tab = 7.82 showing that  $\chi^2$ -calculated is greater than  $\chi^2$ -table value at p < 0.05 and df=3 (i.e.  $\chi^2$ -cal >  $\chi^2$ -tab) in all cases. But item No 3 is not significant, because  $\chi^2$ -cal = 5.04 which is less than  $\chi^2$ -tab = 7.82 showing that Telecommunication has not reduce poverty in Nigeria. But on the average therefore, the result is significant, showing that Telecommunication provides job opportunity to the Nigeria dwellers.

Furthermore, the result in Table 3. reveals that  $\chi^2$ -cal = 17.20, 96.00, 33.52, 51.76 and 44.96 for item No 1,2,3,4 and 5

respectively in research question Three. while  $\chi^2$ -tab = 7.82 showing that  $\chi^2$ -calculated is greater than  $\chi^2$ -table value at  $p < 0.05$  and  $df=3$  (i.e.  $\chi^2$ -cal >  $\chi^2$ -tab) in all cases. Therefore, the result is significant, showing that Telecommunication encourages time management.

Moreover, the result in Table 4. reveals that  $\chi^2$ -cal = 23.04, 71.28, 81.36, 186.96 and 89.84 for item No 1, 2, 3, 4 and 5 respectively in research question four. while  $\chi^2$ -tab = 7.82 showing that  $\chi^2$ -calculated is greater than  $\chi^2$ -table value at  $p < 0.05$  and  $df=3$  (i.e.  $\chi^2$ -cal >  $\chi^2$ -tab) in all cases. Therefore, the result is significant, showing that Telecommunication reduces crime rate in Nigeria.

Finally, the result in Table 5. reveals that  $\chi^2$ -cal = 20.64, 56.00, 8.24, 23.12 and 34.16 for item No 1, 2, 3, 4 and 5 respectively in research question five. While  $\chi^2$ -tab = 7.82 showing that  $\chi^2$ -calculated is greater than  $\chi^2$ -table value at  $p < 0.05$  and  $df=3$  (i.e.  $\chi^2$ -cal >  $\chi^2$ -tab) in all cases. Therefore, the result is significant, showing that Telecommunication improves the activities in Education system, medical system, banking system and industries.

## VI. CONCLUSION

As a result of the findings of this study, it is concluded that Telecommunication system play vital role in Ekiti State and Nigeria society. The role played by Telecommunication cannot be substituted with any other facility.

## VII. RECOMMENDATIONS

Based on the findings of this study, the following recommendations were made:

Enabling environment should be provided for telecommunication facilities in Ekiti State and Nigeria in general; Telecommunication facilities should be affordable by every citizen in Nigeria; Government should subsidize the cost of Telecommunication in the country because of its importance in the society; and every sector of Nigeria economy should adopt the use of Telecommunication system for their efficient performance.

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