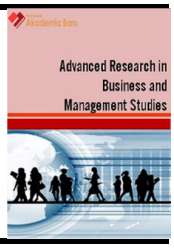
Penerbit Akademia Baru

Journal of Advanced Research in Business and Management Studies

Journal homepage: www.akademiabaru.com/arbms.html
ISSN: 2462-1935



Information Communication Technology Utilization in Federal Road Safety Corps' Operations in South-West, Nigeria

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ARTICLE INFO

Article history:
Received 10 December 2017
Received in revised form 18 January 2018
Accepted 30 January 2018
Available online 10 February 2018

Keywords:
Information communication technology (ICT), ICT utilization, FRSC operation

ABSTRACT

The study analysed ICT utilization in the operations of FRSC in South-west, Nigeria. It adopted a quantitative research approach conducted in a cross-sectional design with the use of structured questionnaire to collect primary data from the FRSC staff operating in south-western Nigeria. Multi-stage sampling technique was employed to select 323 FRSC staff from Ondo, Oyo and Osun States, Nigeria. The study conducted both descriptive and regression analysis using the statistical package for social sciences (SPSS) version 23. The descriptive analysis of the study revealed that ICT facilities and applications are quite often used in the FRSC and failure of the staff to adapt to technology change and irregularity of power supply are the salient factors hindering the utilization of ICT in the FRSC. In addition, the findings of the regression analysis revealed that ICT utilization has a positive effect on the operations of FRSC. Therefore, the study recommends that more awareness should be created on the importance of ICT and alternative power supply be made available for better utilization of ICT and more quality facilities such as better internet connection, upgrade of the existing ICT facilities for better performance, friendly ICT applications for easy use to enhance the operations of FRSC through ICT utilization.

1. Introduction

Today, ICT is an increasingly powerful tool for participating in global markets, promoting political accountability, improving the delivery of basic services and enhancing local development opportunities [1]. Therefore, it becomes pertinent for all sectors of the nation's economy, to be well-informed and adequately equipped with ICT facilities in order to function productively in this age of information explosion and technological advancement.

The introduction of office automation and information technology has assisted to strengthen information and service delivery. Several organizations in Nigeria have had success in refining some of their work processes as well as imbibed the use of ICT in their operations. The public sector

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represents one area that has experienced ICT revolution globally. According to Bhuiyan [2], major computerization and infrastructure development in the public sector has been taking place to replace internal manual work processes by ICT-based automation. In Nigeria, Federal Road Safety Corps (FRSC) over the years has introduced more effective means of carrying out its responsibilities and statutory functions with the incorporation of ICT infrastructure [3].

Undoubtedly, one of the notable constraints to road safety administration in Nigeria is insufficient data. Data is important to the FRSC in delivering its mandate of creating safe motoring environment in Nigeria. The need to develop functional and sufficient database in the FRSC that will provide ready access to up-to-date data on a broad range of subjects relating to road safety management became imperative. This led to a culture of technology use in FRSC that will improve the collection, management and use of road traffic data.

Several studies such as Adelabu and Adu [4], Ezeh [5], Okolocha and Nwadiani [6] and Onyadongha [7] have been conducted on ICT utilization in Nigeria, though these studies were mostly conducted in the education and agriculture sectors and other studies like Evangelista [8], Kapros, Polydropoulon and Antonopoulon [9] abound in advanced countries. Their studies assessed the impact of ICT utilization on service delivery and concluded that there is a high tendency of improving operation through utilization of ICT. Despite the numerous studies conducted on ICT utilization in Nigeria, only few has been conducted in the transport sector [10-11]. Many of which focussed on the private industries with little attention on the public organizations. Based on the peculiarity of the Federal Road Safety Corps as a lead (public) agency in road traffic management in Nigeria, there is need to analyse the utilization of ICT on FRSC operations.

The infusion of ICT into public administration enhances efficiency in the delivery of services to the people. Nwabueze and Ozioko [12] maintain that ICT helps in taking high quality decisions and at the same time saves time. It is in line with the laudable roles that the federal government of Nigeria in order to ensure the full exploitation of the potentials of ICTs in sustainable democracy laid foundation for e-government in Nigeria [13].

Countries that have adopted and applied electronic services (ICT) to their operations have witnessed dramatic improvement in their development efforts. ICT is a strong tool for sustainable development and improving governance, widening democratic space, increasing productivity, administrative effectiveness and cost savings [14]. It is not surprising therefore that the application of ICT in governance is engendering much concern in many countries of the world.

To this end, ICT is seen as a tool to support the work of governmental institutions and agencies with the objective of delivering public services and information in a more convenient, citizen centric and cost effective manner. Thus, in Nigerian public service, ICT can be an effective tool to ensure increased access to government services, improved value for money as well as increased productivity, transparency and better service delivery [15]. Hence the study assessed the level of ICT utilization, examined factors influencing its utilization and the effect ICT utilization on the operations of the FRSC.

2. Literature Review

Studies on the impact of ICT confirmed productivity increasing effects in both the user sectors and in ICT producing sectors [16]. In particular, ICT was found to have positive effects on labour productivity and total factor productivity [17]. An important finding is however, that ICT-induced productivity effects vary significantly between sectors and among countries [18]. Recent research suggests that the largest productivity growth effects occurs in the ICT-producing sectors

themselves, and in selected service industry sectors like banking, wholesale, retailing and telecommunication [19]. These results indicate that ICT-induced productivity effects are relatively less pronounced in other sectors, including transportation and logistics. On the other hand, empirical evidence shows that particularly the larger companies in the steel industry have dynamically adopted ICT.

The preoccupation of many countries in recent time is how to reposition their public service for effective and efficient service delivery. Consequently, government of nations have taken it upon themselves to carry out various reforms in the public sector by redesigning the structures, systems and processes to improve the delivering of services to their citizens [20]. The reforms in the public sector commenced in 2008 which needed to be fast tracked in order to achieve a world class civil service that would place the country's public sector among the best in the world in the next few years. The reforms were being implemented by the Bureau of Public Service Reforms which focus on critical institutional changes, restoring professionalism and client focus and delivery of effective basic service by 2017 [21].

2. Method

This research adopted a quantitative research approach conducted in a cross-sectional design to analyse information communication technology utilization in the operations of Federal Road Safety Corps in South-west, Nigeria. The study was conducted in the South-west, Nigeria with emphasis on Ondo, Osun and Oyo States. The choice of these areas is informed because they cover a stretch of road network noted for incessant road traffic crashes in Nigeria. The target population for this study is staff members of FRSC in the three (3) States. There is two thousand and forty-five (2,045) FRSC staff in the selected region and which represents the total population of the study.

A sample of 323 was determined and used for the study, based on the simplified statistical sample table by Krejcie and Morgan [22]. The study used a multi-stage sampling technique to select the respondents for the study. The first stage entails purposive selection of three (3) States (Oyo, Ondo and Osun States) out of the six States in the southwest of Nigeria. This is followed by stage two which involves selecting four (4) FRSC Commands within each State using simple random sampling. Stage three involves selecting twenty-seven (27) respondents (staff members of Federal Road Safety Corps in each selected FRSC command using random sampling. This resulted in 323 staff members that were used as the respondents of the study.

Primary data was collected in the study using survey questionnaire that was self-administered to the respondents. The used survey questionnaire was adopted from previous study on ICT utilization and service operation and subject to content validation before distributing to the respondents. The survey questionnaire was designed into four (4) sections. Section A was designed to collect general demographic information of the respondents. The demographic characteristics on which data was collected include state where the respondent works, age, gender, rank, religion, marital status, educational status and experience. Section B collected information on the awareness and utilization of ICTs in FRSC using a 4-point likert type scale ranged from 1 - Unaware, 2 - Quite aware, 3- Aware and 4- Very aware. Section C collected information about factors influencing ICT utilization on the operations of FRSC using four point likert type scale ranged from 1 - Very low, 2 - Low, 3 - High and 4 - Very high while section D collected data about the operations of FRSC measured using a 4-point likert scale such as 1- Strongly disagree, 2 - Disagree, 3 - Agree and 4 - Strongly agree.

To ensure the validity of the study instrument, the survey questionnaire was subjected to facial validity; which involves giving a draft of the questionnaire to a researcher who is experienced in

survey research and also a practitioner to vet and correct the items of the questionnaire in order to avoid issues of ambiguity, double barrel questioning and to ensure that the questionnaire is valid to be used for data collection. Pilot study was further conducted on the study instrument by giving the survey questionnaire to 30 FRSC officers operating at the FRSC command office Akure. The findings of the pilot study revealed a Cronbach's alpha greater than 0.7 for all the variables of the study which indicates that the items of the questionnaire have acceptable level of reliability and hence, were further used for the main data collection. However, the respondents of the pilot study were exempted from the main data collection.

The study used both descriptive and inferential statistics to analyse the collected data. The descriptive statistics include frequency count, percentage, mean score and standard deviation while the effect of ICT utilization on FRSC operations was tested through a linear regression analysis.

4. Findings

A total of three hundred and twenty three (323) copies of survey questionnaire were distributed to the study population out of which two hundred and fifty nine (243) representing 75.23% were returned to the researcher indicating that 80 (24.77%) were not returned. However, 4 (1.24%) among the returned copies of questionnaire were not qualified to be used for the research due to issues of large number of missing responses.

4.1 Demographic Characteristics of the Respondents

The descriptive analysis of the demographic characteristics of the respondents revealed that majority of the respondents of this study is within the age range of 26 – 35 years of age (49.8%), while the group with the least representation is 56 – 60 years having a representation of 0.4%. The result also shows that 74% of the respondents are male, while the remaining 25.9 are female. This indicates that large proportions of the respondents are within the age range where their performance is at peak and adopt information and communication technology (ICT) in discharging their operations.

In term of religion, 76.6% of the respondents are Christian, 22.6 are Muslims and the remaining 8% are traditionalists. More so, 72% of the respondents are married, 23.8% are single and the remaining 2.5% divorced. The indication of this is that there is a tendency of high emotional stability among the respondents which may encourage the use of ICT at work. Furthermore, it is also noted that the highest proportion of the respondents (38.85%) are degree holder of either BSc./Bed./BA, 35.1% are having Diploma, 7.9 has a postgraduate degree certificate (PhD or Masters) with only 18% having O'Level indicating a high flair for education among the respondents and thus, may enhance the adoption/usage of ICT among the respondents.

In addition, the descriptive analysis on the position and experience of the respondents indicate that a large proportion of the respondents are in the rank of ARC – RC (33.9%) while the least percentage is ACC – CC (3.8%). Also, majority of the respondents have more than 10 years working experience (35.1%) while only 6.3% have below 2 years' experience indicating adequate experience among the respondents to provide accurate responses to this survey and discharge their duties as required.

4.2 ICT Awareness

The result of the descriptive analysis conducted on ICT awareness revealed that the minimum and maximum values for all the responses are 1 and 4 respectively. The descriptive analysis shows

that there is awareness of ICT facilities among the FRSC. It is also indicated in Table 2 that the respondents are aware (mean value = 3.12) of VSAT infrastructure in the FRSC. Also, the result found that the respondents are aware of Modem (Glo, MTN or Airtel), CUG, e-dashboard, e-tablet, RTCIS, RTSS. DSSP, driver's license portal and mobile application as the ICT tools used by the FRSC. The break-down of every response on ICT awareness is provided in Table 1 below.
The result of the overall descriptive analysis indicates that there is a quite often use (mean value = 3.216) of ICT facilities and application among the FRSC as revealed in Table 2. In addition, there is a quite often use of ICT facilities and application among the FRSC in all functions of their duties except in duty delegation and through other colleagues which is sometimes used (mean value of 2.88 and 2.82) respectively.

Table 1
Descriptive analysis of ICT Awareness

S/N	Description	Min	Max	Mean	Std. Deviation
1	VSAT Infrastructure	1	4	3.12	.822
2	Modem (Glo, MTN or Airtel)	1	4	3.37	.684
3	Close User Group	1	4	3.46	.648
4	e-Dashboard	1	4	3.38	.671
5	Enforcement with e-tablet	1	4	3.33	.773
6	RTSS	1	4	3.30	.756
7	RTCIS	1	4	3.44	.676
8	Mobile Court Application	1	4	3.29	.719
9	DSSP	1	4	3.30	.789
10	Driver's License Portal	1	4	3.40	.664
11	e-APER	1	4	3.49	.639
Overall	ICT Awareness	2.00	4.00	3.3711	.45994

Table 2
Description of the use of ICT facilities and application

S/N	Description	Min	Max	Mean	Std. Dev
1	Job functions require report rendition	1	5	3.35	.827
2	Report rendition requires the use of ICT facilities and applications	1	5	3.38	.797
3	Use of ICT facilities	1	5	3.54	.743
4	Visits FRSC official website for internal communication	1	5	3.35	.836
5	Use the ICT facilities and application myself	1	5	3.16	.936
6	Use the ICT facilities and application through duty delegation	1	5	2.88	.972
7	Use ICT facilities and application through other colleagues	1	5	2.82	.976
	Overall Application of ICT facilities	1.29	4.86	3.2126	.59145

H = Hardly; S – Sometimes; QO – Quite Often and A- Always

4.3 ICT Constraints

The result of the descriptive analysis on the constraints of ICT facilities and applications in the FRSC shows a minimum value of 1 and a maximum value of 4. The mean values of the overall constraints (mean =2.75) as shown in Table 3 below shows that there is a high constraint in using ICT facilities and application in the FRSC. Hence, failure of staff to adapt to change in technology is the biggest constraints as indicated by the mean value (m =3.21). This is followed by "non-regular supply of power, poor internet connection, malfunctioning of the existing ICT facilities, unfriendliness of the FRSC applications and inadequate of ICT facilities respectively while lack of

training is the least of the constraint. The break-down of the respondents in term of frequency is presented in Table 4 below.

Table 3
Description of the constraints of ICT facilities and applications

S/N		Min	Max	Mean	Std. Dev.
1	Lack of training	1	4	2.53	.976
2	Inadequate ICT facilities	1	4	2.55	.990
3	FRSC applications not friendly	1	4	2.56	.970
4	Malfunctioning of the existing ICT facilities	1	4	2.73	.901
5	Non-regular supply of power	1	4	2.87	1.046
6	Poor internet connection	1	4	2.79	.956
7	Failure of staff to adapt to technological change	1	4	3.21	.778
	Overall constraints of ICT facilities and application	1.14	4.14	2.747	.65942

4.4 Effect of ICT Utilization on FRSC Operations

The result of the regression analysis conducted on the effect of ICT facilities and applications on FRSC operations shows a regression equation with the predictor R = 0.424, R^2 = 0.18, Adjusted R^2 = 0.176, F = (1, 239) = 51.911, P ≤ 0.000. This result revealed that the predictor (ICT facilities and application) contributed 17.6% variance level in explaining FRSC operations. The result of the F-test revealed a significant relationship between the ICT utilization and FRSC operations representing the overall model by the equation: (F (1, 239) = 51.911, P ≤0.00). As depicted by Table 4 below, the result shows a significance level (P =0.00) which is lesser than 0.005 significance threshold level and a beta value of (β = 0.424) for ICT utilization indicating a medium positive significant effect of ICT utilization on FRSC operation. Hence, the null hypothesis which states that there is no significant effect of ICT utilization on FRSC operations is rejected while the alternative is accepted. This result revealed that an increase in ICT utilization has an increase effect on FRSC operations.

Table 4
Effect of ICT utilization on FRSC operations

Model		**Unstandardized Coefficients**		**Stdandardized Coefficients**	**T**	**Sig.**
		B	Std Error	Beta		
1	(Constant)	2.213	.179		12.365	0.000
	ICTFA	.395	.055	0.424	7.205	0.000
	R					0.424
	R^2					0.180
	Adj. R^2					0.176
	F					51.911
	Sig.					0.000

5. Discussion and Conclusion

The descriptive analysis conducted in this study revealed that there is awareness of ICT among the FRSC. Precisely the ICT facilities such as VSAT infrastructure, modem, closed user group and other facilities are well known among the FRSC. The descriptive result also found that ICT facilities and applications are quite often used in the FRSC. This result is revealed in the operations of the FRSC which indicates that the staff of the FRSC finds it easy and timely to collect data for analysis, report real time information, make quick decision, reduced RTC response time and improve

enforcement among others. This result is in-line with the assertion of Igyor [23] who declared that ICT has changed the way transactions are conducted, the way in which information is circulated and the way in which education and information is shared in Nigeria due to the concerted effort made by the government in joining the league of industrialized nations in the acquisition, deployment, consumption and utilization of ICT.

Furthermore, the findings of the study as indicated by the mean value revealed that failure of the staff to adapt to technology change is the most important factor hindering the utilization of ICT in the FRSC. This is followed by the irregularities of power supply, poor internet connection and malfunctioning of the existing ICT facilities. However, the result found that lack of training is the least factors hindering the utilization of ICT in FRSC operation. This result has revealed the effort made by the FRSC in Nigeria as one of the first Federal Government Agencies in Nigeria to adopt the global trend in computerization.

The findings of the study revealed that there is a positive effect of ICT utilization of FRSC operations the findings of the study indicate that the more ICT is utilized in running the operations of the FRSC the better the operations and vice versa. The findings also revealed that ICT utilization has been able to successfully contribute to approximately 18% success of FRSC operations. The findings of the study concurs with the assertion of Pilat [17]; Inklaar et al. [19]; Bakac and Akbay [24]; who all regards ICT utilization as having positive effect in speeding up the growth of operations.

6. Recommendation

The study has revealed that ICT utilization has a positive effect on the operations of FRSC which means that better utilization of ICT has a great tendency in improving FRSC operations. Therefore, it was found that inability of the FRSC staff to adapt to technological change is the major factor hindering the utilization of ICT in FRSC operations. Hence it is recommended in the study that more awareness be made on the importance of ICT by enlightening the FRSC staff on the utilization of ICT in their operations.

The study also found that non-regular supply of power, poor internet connection, malfunctioning of the existing ICT facilities, unfriendliness of the FRSC applications and inadequate of ICT facilities are also among the factors hindering ICT utilization in the south-west Nigeria. Therefore, this study recommends that alternative power supply be made available for better utilization of ICT and more quality facilities such as better internet connection, upgrade of the existing ICT facilities for better performance, friendly ICT applications for easy use to enhance the operations of FRSC through ICT utilization.

7. Direction for Future Studies

This study has contributed to knowledge by conducting its investigation in the paramilitary force which is a non-profit organization as most previous studies have been conducted in the private organizations where much attention is focused on profit maximization. The current study has also expanded literatures in the aspect of ICT utilization and service delivery by investigating the level of ICT utilization in the FRSC operations and the effect of ICT utilization on FRSC operations. Furthermore, the study has contributed to practices by highlighting the factors hindering the utilization of ICT in operations of FRSC. Hence, it has enlightened the policy makers and the stakeholders in the FRSC on the factors to consider for better utilization of ICT in the delivery of the operations of the FRSC. However, since ICT is not only utilized by FRSC in Nigeria,

future studies are encouraged to conduct similar investigation in the other arm forces (both military and paramilitary) in Nigeria and further compare the findings for better policy making.

References

[1] UNDP. "Information communication technologies and development." Retrieved from http://usdnq.undp.prg/it4dev/on 23 April 2016.
[2] Bhuiyan, M. Shakhawat Hossain. "Public sector eService development in Bangladesh: Status, prospects and challenges." *Electronic Journal of e-Government* 9, no. 1 (2011): 15-29.
[3] Adeleye, R. T. "Understanding the role of ICT in FRSC." Assistant Corps Commander Promotion Examinations Lecture. Abuja 21 August, 2015.
[4] Adelabu, Olusesan A., and Emmanuel O. Adu. "Assessment of accessibility and utilization of information and communication technology (ICT) for effective teaching of biological science in secondary schools." *Mediterranean Journal of Social Sciences* 5, no. 23 (2014): 1439.
[5] Ezeh, Ann N. "Extension agents access and utilization of information and communication technology (ICT) in extension service delivery in South East Nigeria." *Journal of Agricultural Extension and Rural Development* 5, no. 11 (2013): 266-276.
[6] Okolocha, Chimezie Comfort, and Comfort Onaigho Nwadiani. "Assessment of utilization of ICT resources in teaching among tertiary institution business educators in South Nigeria." *Journal of Education and Learning* 4, no. 1 (2015): 1.
[7] Oyadongha, Diseye Juliet. "Assessment of the Availability and Utilization of Information Technology (IT) Facilities in Bayelsa State Ministry Of Education." PhD diss., 2016.
[8] Evangelista, Pietro. "Understanding ICT management in small transport and logistics service providers." *Selected Papers of the Ninth IFPSM Summer School* 2004 (2003): 25-42.
[9] KAPROS, Seraphim, Amalia POLYDOROPOULOU, and Maria ANTONOPOULOU. "Impact of information and communication technologies on freight transport and logistics." In *Proceedings of the 12th World Conference of Transport Research (WCTR), Lisbon, Portugal, Ιούλιος*. 2010.
[10] Ayantoyinbo, Benedict Boye. "ASSESSING THE IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) ON THE PERFORMANCE OF FREIGHT DISTRIBUTION." *European Journal of Logistics Purchasing and Supply Chain Management* 3, no. 3 (2015): 1-11.
[11] Somuyiwa, A. and S. Adebayo. "Analysis of information and communication technology (ICTs) usage on logistics activities of manufacturing companies in Southwestern, Nigeria. Journal of Emerging Trends in Economics and Management Science, 2, no.1 (2011), 68-74.
[12] Nwabueze, A. U., and R. E. Ozioko. "Information and communication technology for sustainable development in Nigeria." (2011).
[13] Aragbe-Akpore, S. "Why e-government for Nigeria." *The Guardian, March* 16 (2004): 41-45.
[14] Adamali, Aref, John Oliver Coffey, and Zaid Safdar. "Trends in national e-strategies: A review of 40 countries." *Global Trends and Policies* (2006): 87.
[16] Oliner, Stephen D., and Daniel E. Sichel. "The resurgence of growth in the late 1990s: is information technology the story?." *Journal of economic perspectives* 14, no. 4 (2000): 3-22.
[17] Pilat, Dirk. "The economic impacts of ICT–Lessons learned and new challenges." In *Eurostat Conference "Knowledge Economy–Challenges for Measurement*. 2005.
[18] Nordhaus, William D. "The recent recession, the current recovery, and stock prices." *Brookings Papers on Economic Activity* 2002, no. 1 (2002): 199-228.
[19] Inklaar, Robert, Marcel P. Timmer, and Bart Van Ark. "Mind the gap! International comparisons of productivity in services and goods production." *German Economic Review* 8, no. 2 (2007): 281-307.
[20] Adeyeye, Mike, and Temitope Aladesanmi. "Aligning ICT for service delivery in Nigerian local government." In *MIPRO, 2010 Proceedings of the 33rd International Convention*, pp. 1304-1308. IEEE, 2010.
[21] Onuba, I. "Govt to intensify public sector institutional reforms." Punch Newspaper, (2017, 2 March), 28.
[22] Krejcie, Robert V., and Daryle W. Morgan. "Determining sample size for research activities." *Educational and psychological measurement* 30, no. 3 (1970): 607-610.
[23] Igyor, G. A. "The economic and social benefit of telecommunications technology." In *A Paper Presented at the Animal International Conference on Information Technology Management Infotech*, vol. 96, pp. 23-25. 1996.
[24] Bakaç, Mustafa, Aslıhan Kartal Taşoğlu, and Turgay Akbay. "The effect of computer assisted instruction with simulation in science and physics activities on the success of student: Electric current." *Eurasian Journal of Physics and Chemistry Education* 1, no. 1 (2010): 34-42.