Awareness and Level of Income as Determinants of Utilization of Information and Communication Technology by Sports Administrators in Nigeria

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Abstract: *The study investigated the awareness and level of income as determinants of Utilization of Information and Communication Technology by Sports Administrators in Nigeria. The population for this study consisted of 1144 staff of the National Sports Commission, Nigeria. A sample of 780 respondents were selected using simple random sampling technique. A structured questionnaire developed and validated by the researchers were used to collect data for the study. Descriptive statistics and ANOVA were used to describe the demographic data as well as test the hypotheses at 0.05 level of significance. Scheffe Post hoc analysis was used to determine the group that accounted for any significant result. The results revealed organizing secretaries are more aware of the utilization of ICT than other Sports Administrators and Sports Administrators of low level of income utilize ICT more than Sports Administrators of high and middle income cadres. Based on the findings of this study, it was recommended that management of NSC should give Sports Administrators ICT dependent and driven jobs to improve their level of awareness and ICT facilities should be provided for all categories of staff in the six departments in the NSC.*
Keywords: Awareness, Level of Income, Sports Administrators, Utilization, Information and Communication Technology

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I.   Introduction

Information Communication Technology (ICT) is the branch of engineering that deals with the use of computers to store, retrieve and transmit information. The acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by a microelectronics-based combination of computing and telecommunications are its main fields (Longley & Shain, 2012). Otunla (2005) comprehensively describes ICT "as all kinds of electronic system that are used for broadcasting, telecommunications and all forms of computer-mediated communication. It involves the use of computer online self-learning packages, satellites, radio, fiber optics technologies, tele-presence system and all software". Onasanya (2009) defines ICT as a computer-based tool used by people to work with information and communication processing needs of an organization. Tusubira and Kyeyure, (2001) and Wade (2012) stated that ICT specifically is the use of computers and software to process, store, transmit, retrieve and protect information. These definitions attest to the fact that ICT is globally recognized and are useful in all spheres of life including sports. From the foregoing, ICT are equipment both in the hard form and soft form used in the day-to-day running of sports in Nigeria. ICT is used in the office work for preparation of documents, for instruction and skills demonstration by coaches and officiating in all sports to determine actual winners, accurate timing as well as in the dissemination of information through e-mail and social media such as facebook, twitter, and whatsapp as well as broadcast through internet, radio and television. Utilization refers to the various ways by which ICT is put to use in sports. Recently, there have been a number of innovations in ICT for various sports: in Tennis and Cricket Hawk Eye is a computer and camera system which traces a ball's trajectory. It is now a standard at major tennis tournaments whereby players are given power to review contentious line calls. In Football, there is the introduction of goal line technology to determine whether the ball passes over the line or not. In Basketball, replay now shows last touch decisions in the final two minutes of games and also to determine whether players release the ball before the clock expires (Topendsports, 2013). ICT is also used in sports to detect how injuries occur and assess sports injuries; in athletics, it is used to detect false starts. It is also used for security, ticket sales and all technical stuffs.

ICT through multi media is using different kinds of technology or media such as computer aided learning (CAL) and television/video for instruction and presentations (Dominic, Talabi, Obiyemi, Onasanya & Chado, 2012). ICT captures students, teachers, coaches, attention and exhibit greater motivation when used as well as that learning time for skill is reduced and mastery is increased for athletes. (Dominic et al 2012). ICT is stimulating, enjoyable and makes athletes active during training sessions and have more focused attention (Mohnsen, 1995). ICT enhances creativity, therefore SAs need to tap into it and be actively engaged in its use to optimize their administrative duties, procedures and organizational management of activities and competitions. SAs must take ICT as a challenge not only to enhance efficiency at work but also athlete's performance (Dominic et al, 2012). Dominic (2006) submitted that performance can be improved through the use of computer simulation (CS) to alter performance parameters of athletes. This she said could be achieved by generating model similar to the person thereby changing variables creating similar different movements/actions.

Coaches' demonstration of skill performance in games and sports can be produced in a CD-ROM and can be viewed by players/athletes without necessarily having close interaction with the coach resulting into learning and skill mastery. (Ajeigbe et al, 2011) corroborating above Ajayi (1999) revealed that ICT gadgets can be used to package information for the benefit of analyzing and synthesizing the athletes' in order to improve performance.

Electronic mail is useful in sports administration in disseminating information concerning organizations' activities especially if there is an upcoming competition whereby pictures, documents and other files can be sent as e-mail attachments. Also recipients can use the medium of e-mail to send their entries, particulars of athletes, coaches and administrators and other vital information to the organizers. Akabueze (2002) and Fasanmi (2010) stated that the electronic mail has become the fastest, cheapest and commonest means of transmitting information through the global computer network. Aribamikan (2015) reported that SAs utilize ICT for the following reasons: to promote sporting events by sending e-mails to coaches, athletes, parents and officials; typing documents, letters, research works, reports; encoding materials being asked by superiors; answering letters of sponsors and marketers; preparation of results for competitions; informing staff through the internet; preparation for television and radio broadcast and advertisement; serves as a medium of invitation, registration and to access other relevant information concerning a particular competition without appearing in person. He submitted that e-mail is available at the NSC and is used to communicate among personnel, SAs athletes and sponsors.

Sports Administrators (SAs) are those charged with responsibility of day-to-day running of sports affairs such as Directors, Coaches, Organizing Secretaries and Sports Officers in the NSC. To perform optimally it is therefore expedient that SAs in Nigeria are aware of the latest cutting edge technology in sports administration, coaching, officiating, and broadcast in order to be a global player in the world of sports.

Awareness in this paper has to do with familiarity with ICT resources such as computer, phones, Ipad, laptops, projector, internet with its derivates such as e-mail, facebook, twitter, teleconferencing, CAI, and so on. Adebo, Adekunmi and Daramola (2013) reported high awareness among males than females which they attributed might be due to the fact that the females are less inquisitive than males when it comes to information seeking behaviour. They also reported further the low awareness of the females on the use of online sports resources might result from lack of interest of most women folk in sporting activities and that a greater percentage of males than females respondents had access to all sources of Internet resources available.

Asefeh and Nostrat (2007) found that 70% of respondents were aware of digital resources and utilization, 70% of respondents were aware of online databases and 87% of respondents felt that these forms of ICT met their information needs. Thanuskodi (2013) found that more awareness of electronic resources need to be created and that a friendly environment be provided so that SAs can make a better use of the facilities. SAs needed to be given ICT dependent tasks so as to be familiarize them with these resources and as such conducive and enabling environment needed to be provided to enable them carry out their tasks efficiently.

Level of income refers to earnings by SAs according to their level of placement at the NSC. The high income SAs are usually few in number but earn higher pay; the medium income SAs are more in number but earn less than the SAs in the high income cadre while low income SAs are large in number but earn lower than the two cadres of SAs. The researchers observed that the low income SAs were mostly young in age and had the urge to utilize ICT. SAs with low level of income backgrounds have less privilege to access ICT due to lack of funds. Reddick, Boucher and Groseillier (2000) reported that social class background, as measured by education and level of income are factors that affect digital divide in Canada. According to Morales-Gomez and Melesse (1998), access to internet and other ICTs is only for few who can afford to buy and pay for their services, a phenomenon which is a function of income. In a country like Nigeria, ICT availability and utilization is determined by funds available to SAs which is a function of how much they earn as salary, it therefore follows that ICT are used by few population who are incidentally in the high level cadre officers because of the salary they earn. This is so in a developing country like Nigeria where the income gap is wide and literacy rate is remarkably low; and users of ICT belong to the elite (Morales-Gomez & Melesse ,1998).

This was corroborated by Njiraine (2000) who reported high charges as discouraging SAs and other users from making use of ICT. Bekkabulindi, Sekabembe, Shopi, and Kiyingi, (2014) found level of income to correlate with utilization of ICT, this they said was due to the fact that, often, the higher the income, the easier it is for individuals to acquire personal ICT resources and to get familiar with ICT through various avenues such as magazines and newspapers.

Thus, the purpose of the study was to determine the extent to which Awareness and Level of Income determine Utilization of Information and Communication Technology by Sports Administrators in Nigeria.

Research Question
Are sports administrators aware of the ways ICT can be utilized in sports?
Hypotheses
Two hypotheses were postulated for verification at $P < 0.05$, thus
1) There is no significant difference in the level of awareness and the use of ICT among sports administrators of different departments.
2) There is no significant difference in the utilization of ICT among sports administrators with different levels of income.

II.   Methodology
The study adopted a descriptive survey research design which enables information to be obtained from a representative sample of the population so as to describe situation as they exist. The population for this study consisted of all the 1144 personnel at the National Sports Commission located in Abuja and twelve (12) zones created to ease the administration of sports in Nigeria. The zones are South West 1 at Ibadan and 2 at Akure, South East 1 at Enugu and 2 at Umuahia, North East 1 at Bauchi and 2 at Damaturu, North Central 1 at Jos and 2 at Minna, South South 1 at Benin City and 2 at Portharcourt, North West 1 at Kaduna and 2 at Sokoto.

The simple random sampling technique was used to select 68.2% of the entire population who are members of staff. Thus a total of 780 respondents were sampled for the study.

The research instrument used to gather data for the study was a questionnaire tagged 'Sports Administrator Questionnaire' (SAQ) designed by the researchers and it consisted of two sections. The first part dealt with socio-demographic variables of respondents, while the second part contains items on utilization of ICT. A rating scale of HA-High Awareness, AA-Average Awareness, LA-Low Awareness and NA-Not Aware was used to collect data on SAs awareness about utilization of ICT.

The researcher with the help of three trained research assistants administered the instrument on the respondents. The respondents were given sufficient time of one week to respond to the questionnaire, after which the completed questionnaire were collected. Each respondent responded to the questionnaire independently. Respondent's responses were regarded as reflecting current status of availability and utilization of ICT at the NSC. It was assumed that all responses given by the participants were frank and sincere. It is relevant to add that the researchers were former athletes, sports administrators and academics and hence had little or no difficulty in interacting with the sports administrators at NSC.

The data collected were analyzed using descriptive and inferential statistics. The descriptive statistics included percentages, frequency counts, while inferential statistics of Analysis of Variance (ANOVA) was used. The hypotheses were tested at alpha = 0.05 level of significance.

III.   Results
Research Question 1: Are SAs aware of the ways ICT can be used in sports?
In answering Research Question 1, data generated from responses on awareness of ICT were analyzed using frequency counts and simple percentages the result is presented in Table 1.

Table 1: Percentage of Respondents on Awareness of ICT in sports.

	Variables	H A	%	A A	%	L A	%	N A	%
1	Networking and connection of offices	488	62.6	148	19.0	40	5.1	104	13.3
2	Research resources in sports	512	65.6	144	18.5	72	9.2	52	6.7
3	Sponsorship and marketing of sports	424	54.4	204	26.2	108	13.8	44	5.6
4	Sports resources	504	64.6	160	20.5	76	9.7	40	5.1
5	Online information dissemination	464	59.5	188	24.1	72	9.2	56	7.2
6	Online learning and interaction	472	60.5	180	23.1	40	5.1	88	11.3

From the table 1, it was discovered that respondents were highly aware about the utilization of ICT for networking, research resources in sports, looking for sponsors and marketers, online information dissemination as well as online learning and interaction. Thus, SAs were aware about the utilization of ICT.

Hypotheses Testing
Ho1: There is no significant difference in the level of awareness of the use of ICT among sports administrators of different departments.
In testing Hypothesis 1, awareness of SAs on the use of ICT was manipulated against status and departments of sports administrators using two-way analysis of variance. The result is as presented in Table 2.

Table 2: Summary of Two-way Analyses of Variance on level of Awareness by status and department

Source	SS	df	MS	F	P
Status	232.845	3	77.615	2.826	.038*
Department	487.562	5	97.512	3.551	.004*
Status * Department	1050.925	15	70.062	2.551	.001*
Error	18892.994	688	27.460		
Total	505116.000	712			

*P < 0.05

Table 2 shows a 2 x 2 ANOVA results of status and Department on level of awareness that (F 15, 688)=2.55, p=.001). The null hypothesis was rejected. This implied that there was significant difference in the level of awareness of the use of ICT among sports administrators of different departments. Similarly, the main effect of status (F3, 688)=2.83, p=.038) and department (F5, 688)=3.55, p=.004) on the level of awareness of the use of ICT among sports administrators is statistically significant at 0.05 level in each case. In order to locate the source of significant difference in the level of awareness of ICT use among sports administrators of different departments, Scheffe post-hoc test was used. The mean scores showed that organizing secretaries were more aware about ICT than directors, coaches and sports officers on status while the mean showed that SAs in the Human Resources and Finance and Grassroots sports departments were more aware about ICT than SAs in the National Sports Federation and Elite Athletes, Sports Medicine and Sports Planning, Research and Documentation departments. The results were shown in tables 3 and 4.

Table 3: Scheffe Post-hoc Analysis of Awareness of ICT by Status

Status	Director	Organizing Secretary	Coach	Sports Officer	Mean	N
Director					26.00	124
Organizing Secretary				*	27.41	116
Coach					26.30	80
Sports Officer					25.67	392

Mean difference is significant at 0.05 level of significance
Table 3 shows that there was a significant difference in the awareness of ICT between organizing secretaries and sports officers at 0.05 level of significance.

Table 4: Scheffe Post-hoc Analysis of Awareness of ICT by Departments

Department	HRF	NSFEA	FSM	GS	SM	SPRD	Mean	N
HRF					*		26.89	184
NSFEA							25.44	116
FSM							25.00	60
GS					*		26.97	168
SM							24.50	32
SPRD							25.85	220

Mean difference is significant at 0.05 level of significance

KEY
HRF-Human Resources and Finance
NSFEA- National Sports Federation and Elite Athletes
FSM- Facilities and Stadia Management
GS- Grassroots Sports
SM- Sports Medicine
SPRD- Sports Planning, Research and Documentation
Table 4 shows that there was a significant difference in the awareness of ICT between Human Resources and Finance Department and Sports Medicine and between Grassroots Sports and Sports Medicine at 0.05 level of significance.

Ho2: There is no significant difference in the utilization of ICT among sports administrators with different level of Income.

In testing Hypothesis 2, levels of income were manipulated against official status using two-way analysis of variance.

Table 5: Summary of Two-way Analysis of Variance of Utilization of ICT by SAs of Different Levels of Income.

Source	SS	df	MS	F	Sig (2-tailed)
Status	380.061	3	126.687	1.05	.370
Level of Income	815.303	2	407.652	3.38	.035*
Status*Level of Income	2055.604	6	342.601	2.84	.010*
Error	84472.035	700	120.674		
Total	2193860.000	712			

*P<0.05

Table 5 shows two-way analysis of variance of utilization of ICT by sports administrators with different level of income. The main effect of level of income on utilization of ICT by sports administrators was statistically significant ($F_{2, 700}$)=3.38, p=.035). Thus the hypothesis which stated that there is no significant difference in the utilization of ICT among sports administrators with different level of income was rejected. This means that level of income determines utilization of ICT. However, the effect of official status of the sports administrators on the utilization of ICT was not statistically significant ($F_{3, 700}$)=1.05, p=.370). The interaction effect of status and level of income was significant ($F_{6, 700}$=2.84, p=.010). In order to locate the source of significant difference a Scheffe post-hoc test was used. The mean showed that SAs of low level of income utilize ICT more than SAs of medium and high income levels. The result is shown in table 6.

Table 6: Scheffe Post-hoc Analysis of Level of Income

Level of Income	Low	Medium	High	Mean	N
Low			*	56.53	164
Medium				54.26	520
High				53.66	96

*Mean difference is significant at 0.05 level of significance

Table 6 shows that there was a significant difference between utilization of ICT by sports administrators on low level of income and high level of income at 0.05 level of significance.

IV. Discussion

The study examined awareness and level of income ad determinants of utilization of information and communication technology by sports administrators in Nigeria. The present study found that sports administrators were aware of networking and inter-connectivity of offices and that ICT could be used for research in sports, advertising, sponsorship and marketing, online sharing of information and online registration of athletes for competitions (See table 1). Asefeh and Nostrat (2007) found that 70% of respondents were aware of digital resources and utilization, 70% of respondents were aware of online databases and 87% of respondents felt that these forms of ICT met their information needs.

Findings revealed that organizing secretaries were more aware about the utilization of ICT among SAs in Nigeria and that SAs in human resources and finance as well as SAs in the grassroots sports were more aware about the utilization of ICT than those of other departments. This is in line Thanuskodi (2013) who found that more awareness of electronic resources needed to be created and that a friendly environment be provided so that SAs can make better use of the ICT facilities.

Another finding from this study showed that SAs in the low level of income utilize ICT more than SAs in the medium and high level of income. This finding contrasts with Bakkabulindi et. al. (2014) who found high level of income to correlate with utilization of ICT, this they said was due to the fact that, often, the higher the income, the easier it is for individuals to acquire personal ICT resources and to get familiar with ICT. The contrast could be as a result that SAs in the low level of income were younger in age and nowadays, ICT is synonymous with younger generations as observed by the researchers that it is the younger SAs who teaches and assists the older SAs in the medium and high level of income to operate and manipulate ICT such as phones, IPad, laptops, email and so on. The researchers observed that SAs of low level of income were saddled with the responsibility of utilizing available ICT in the NSC. Factors such as operational costs, social class background and level of income as reported by Reddick, Boucher and Groseillier (2000) no longer serve as barriers to utilization of ICT.

V.   Conclusions

From the findings of this study, it can be concluded that organizing secretaries were more aware of ICT by status while human resources and finance and grassroots sports departments showed high awareness about utilization of ICT. It can also be concluded that low level of income of the sports administrators is no longer a potent factor in determining utilization of ICT.

VI.   Recommendations

1. Directors, Coaches and Sports Officers should be encouraged to utilize ICT to improve level of awareness and should be given ICT dependent and ICT driven tasks thereby familiarize them with ICT resources.
2. All the six departments in the NSC should be equipped with the latest ICT resources for use to improve their performance in training, officiating and information dissemination.
3. Sports Administrators in the medium and high level of income should be encouraged to utilize ICT and not rely on the low level income earners to operate ICT at the NSC.
4. Medium and High level SAs should be encouraged to personally own ICT facilities like phones, laptops and IPad because they can afford them. This will motivate them to show interest in the utilization of ICT

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