

3.3 Equipment for Use of ICT Services

Given the capacity of ICTs to access, transfer and apply knowledge and information to almost every aspect of human engagement, they are increasingly being recognized in facilitating the attainment of household and national development at large. The continuous development of new technologies and their application to economic, political and social processes is creating new opportunities that could enhance the quality of life. This will depend on the type of technology and how it is used, which will ultimately depend on peoples' values and better understanding through improved data. In fact there is very little hard data at the moment to make judgments. One of the problems is that most of these developments rely on complex global networks whether they are the internet, WAP, GSM, or other networks and there is little understanding of how they impact the environment and change social behaviour. Therefore, to establish the current status of the national ICT infrastructure of the Gambia, this survey was conducted to identify indicators that capture the country's status on and trends in information and communication technology. Certain levels of basic infrastructure as well as organisational activities are generally required for the direct benefits of the information society to be realized.

3.3.1 Access and Use of ICT Equipment in Households

Although ICT may be meeting the needs of individuals and households in products or services delivered to them, for most individuals and households, even in most developed countries, the direct application of ICT is still relatively limited. However, households can mainly access the available information through the use of communication and telecommunication tools via radio and television programmes, to increase agricultural productivity, marketing facilities, trading opportunities and thereby reduce on household poverty. The types of tools commonly used are the radio, GSM mobile and televisions.

At national level in table 5 below, about 90% of households in the Gambia, have "access to radio", whilst about 40% have access to "Television". Also, the consequence of the fantastic growth of cellular telephone with 56 percent of national households that have it,

has seemingly overshadow fixed lines which shows only 14.27 percent of households in the country that has this access either from their own landline or neighbours.

Table 5: National estimate of households with access to ICT

Types of ICT facilities	% of Gambian Households accessing ICT Facilities
Radio	89.98
Television	39.82
Landline (Fixed line)	14.27
Wireless Jamano phone	4.23
WLL/ Airspan	1.03
GSM Mobile	55.97
Computer/ PC	2.25
Internet	1.10
Internet Connection Type (Analogue/Dial-up)	0.47

Source: SCAN –ICT Baseline Survey 2006, The Gambia

Mobile telephones covered nearly three times as much people as fixed telephone. Moreover, the mobile telephone has become a very useful object used today in cities as well as in rural areas among almost all the levels of the society, including policy makers, traders in the informal sector, artisans, students and even taxi drivers who have made of it a working instrument that has considerably facilitated the development of their public relations activities.

Besides landline (fixed line) telephone, access to “wireless” which is a more recent telephone facility accounted for about 4% whilst access to “wireless local loop – WLL/Airspan” accounted for just about 1%. Again from the survey data we are able to estimate that about 2% of households have access to “computer” and, about 1% have access to internet (see Table 5). However, in the same figure, only about 0.47% of

households in The Gambia connecting to the internet are using “Analogue modem/Dial-up” type. Furthermore, households were asked about their main source of energy and the results shows that, about 14% of the households in The Gambia have access to “NAWEC Electricity Supply”

As could be seen in table 6, stratum-wise indicators reflected a scenario which showed that our stratification strategy succeeded in having together a more homogeneous households in each of the strata. The strata are: (1) Banjul and Kanifing, (2) Brikama Urban and Kombo North, (3) Other Urban and (4) Rural. The stratification was employed based on the fact that the units in each stratum will have about equal probability of accessing ICT facility. Whilst about 93% of households in Banjul and Kanifing, as one stratum, have access to radio, Brikama Urban and Kombo North has about 97% of the households with access to radio. Other Urban and Rural accessing radio accounted for about 93 percent and 89 percent percentages respectively (see table 6 below).

Access to television manifested a downward pattern towards the rural. It could be seen in table 6 that whilst about 84% of households in Banjul and Kanifing have access to television, Other Urban and Rural combined accounted for about 36 and 29 percentages respectively. However, Brikama Urban and Kombo North were estimated to have about 75% of the households that have access to television.

Access to landline telephone showed a pattern with Other Urban stratum having about 39% of its households with access to it, above that of Briakama Urban and Kombo North that has about 18% of households (see table 6).

Table 6: Estimated percentage of households in The Gambia with access to ICT by Stratum

Type of ICT Facilities	Banjul & Kanifing	Brikama Urban & Kombo North	Other Urban	Other Rural
Radio	92.83	97.14	93.06	89.12
Television	83.88	75.26	35.63	29.37
Landphone	38.19	18.29	39.38	9.01
Wireless JAMANO Phone	5.92	2.50	15.00	3.88
Wireless Local Loop/Airspan	3.19	0.71	2.14	0.59
GSM Mobile	82.15	78.26	63.24	49.67
Computer	7.72	6.68	0.66	0.95
Internet	5.07	3.93	0.00	0.18
Electricity	71.54	21.07	9.38	1.37

Source: 2005 Scan-ICT Baseline Survey of Households, The Gambia. :Based on 1504 households

Access to landline telephone according to the survey results in table 6 above, other urban has the highest percentage, showing 39 percent accessing landphone. There are 38 percent households in Banjul and Kanifing and 18 percent households in Brikama Urban and Kombo North accessing landphone. This might be the effect of inclusion of Kombo North in the stratum, which in the recent years has emerged as a highly concentrated area in terms of population but with little or yet to benefit from infrastructural development or installations such as ICT infrastructure. The least accessing landphone is other rural accounting for only 9 percent households. The recently introduced ICT technologies such as wireless telephone and the wireless local loop (WLL/Airspan) was captured in the survey and the estimates at least show some households having access to them.

The survey estimated substantial percentages of households in all the strata having access to GSM mobile services. By virtue of this, the survey estimates are evidence of the reality on the ground. The survey further revealed an interesting pattern with estimates showing Banjul and Kanifing stratum having about 8% of households with access to computer in their homes whilst Brikama and Kombo North combined stratum has about 7% of households. In table 6, we have seen that the first two strata have at least some households having access to internet in their homes.

The radio set is the equipment which is widely used in The Gambia; it is owned by 90.0% of households. The difference by place of residence is relatively low when compared with the other items (respectively 93.1% of urban households) and 89.3% of rural households. The television set, telephone, mobile, computer and internet facility are found in the Gambian households in both urban and rural. These ICT equipments are owned by urban and rural as clearly shown in table 7 below. These proportions reveal disparities according to the place of residence.

Table 7 : Estimated percentage of households in The Gambia with access to ICT equipments by Area

Households Access to:	Urban	Rural
Radio	93.05	89.31
Television	82.13	30.57
Land phone(fixed)	37.23	9.26
Wireless JAMANO Phone	5.96	3.85
Wireless Local Loop/Airspan	3.03	0.60
GSM Mobile	81.83	50.32
Computer	7.71	1.06
Internet	5.01	0.24
Electricity	68.43	1.75

Source: Scan-ICT Baseline Survey 2006, The Gambia. Based on 1504 households

Generally, the rates of penetration of the ICT equipment like the radio, television, fixed telephone and mobile telephone in the households remain high although large disparities exists between different local government areas (see table 8 below) for each type of equipment. The radio and GSM Mobile telephone sets are the most widely used communication tools at the level of the home by the Gambian households. Other ICT equipments like computers and internet facilities are only present in the homes of households located in Banjul, Kanifing and Brikama.

Table 8: Estimated percentage of households in The Gambia with access to ICT by LGA (in %)

Households Access to:	Local Government Area (LGA)							
	Banjul	Kanifing	Brikama	Mansakonko	Kerewan	Kuntaur	Janjangbureh	Basse
Radio	90.00	93.40	92.41	78.43	89.37	91.25	88.53	90.80%
Television	81.25	84.40	57.89	5.12	40.11	15.07	5.59	29.14
Landphone	46.25	36.58	7.74	0.17	17.45	0.00	4.04	16.67
Wireless JAMANO Phone	5.00	6.11	2.50	0.00	0.25	0.00	0.07	16.82
Wireless Local Loop/Airspan	0.00	3.83	0.11	0.00	0.00	0.00	0.07	2.93
GSM Mobile	75.99	83.39	65.35	28.37	54.19	48.62	37.23	51.07
Computer	7.57	7.76	3.16	0.00	1.90	0.00	0.00	0.00
Internet	10.00	4.08	1.34	0.00	0.00	0.00	0.00	0.00
Electricity	86.25	68.60	7.56	0.06	0.05	0.00	1.41	0.84

Source: Scan-ICT Baseline Survey 2006, The Gambia.: Based on 1504 households

3.3.2 ICT Equipment at the Workplace

The rate of penetration of computers into institutions is very high, 54.17 % of institutions on the average own two or more computers whilst 11.98% own one. The level of penetration of the computer at the workplace is 66.15 %. This figure also reveals disparities between the local government areas. The Kuntaur LGA is the only area where workers reported having zero computers in their place of work. Other LGAs reported a fair rate of usage of computers in the offices in Janjanbureh LGA with 20 percent; Mansakonko with 29.41 percent and in Kerewan with 39.43 percent. Usage of computer in the workplaces is very high for offices located in Banjul (83.88%), Kanifing (92.31%) and Basse (100.00%) local governments areas.

Table 9: Availability of Computers in the Offices per Local Government Area (in %)

Local Government Area (LGA)	No Computer	One Computer	At least two Computers
Banjul	12.90	3.23	80.65
Kanifing	7.69	16.67	75.64
Brikama	11.11	11.11	44.44
Mansakonko	64.71	17.65	11.76
Kerewan	61.76	5.88	32.35
Kuntaur	100.00	0.00	0.00
Janjangbureh	80.00	13.33	6.67
Basse	0.00	33.33	66.67
TOTAL	31.25	11.98	54.17

Source: Scan-ICT Baseline Survey 2006, The Gambia

The photocopying machine is the most used equipment at the workplace (45.77%) but remain low in the local government areas of Mansakonko (11.16%), Kerewan (17.14%) and Janjangbureh (12.50%). The low level of penetration in this local government may result from lack of support facilities like electricity and maintenance services.

Table 10: Availability of Photocopying machine in the Offices per Local Government Area (in %)

Local Government Area (LGA)	No photocopy machine	One photocopy machine	Two and more photocopy machine
Banjul	19.35	41.94	38.71
Kanifing	15.66	38.55	19.28
Brikama	44.44	22.22	33.33
Mansakonko	5.56	5.56	5.56
Kerewan	8.82	5.88	11.76
Kuntaur	0.00	14.29	14.29
Janjangbureh	0.00	0.00	12.50
Basse	0.00	0.00	66.67
TOTAL	13.43	25.37	20.40

Source: Scan-ICT Baseline Survey 2006, The Gambia

Nationally the overall penetration rates in the usage and availability of fax machine, printer and digital projector in offices is quite high at a rate of 38.31%, 58.71% and 13.93% respectively, see table 11. Printers are widely used in most offices in both urban and rural, whilst digital projectors are hardly used.

Table 11: Level of equipment for the use of ICT services at the workplace per Local Government Area (in %)

Local Government Area (LGA)	Fax machines	Printers	Digital projector
Banjul	90.32	83.87	16.13
Kanifing	51.81	77.11	20.48
Brikama	33.33	88.89	33.33
Mansakonko	0.00	22.22	0.00
Kerewan	2.94	26.47	5.88
Kuntaur	14.29	28.57	0.00
Janjangbureh	6.25	18.75	6.25
Basse	0.00	66.67	0.00
TOTAL	38.31	58.71	13.93

Source: Scan-ICT Baseline Survey 2006, The Gambia

Analysing the results by types of institutions reveals that the government, the business and the ICT sectors have a high penetration in the use of photocopying machines with respective rates of 71.88 percent, 64.59 percent and 58.33 percent. Health and the education sectors have also registered a significant availability of photocopying machines in their offices showing that copiers are widely in most sector of the economy, see table 12 below.

Table 12: Availability of Photocopying Machine in Workplace in the sector of Activity (in %)

Type of institution	No Photocopying Machine	1 – 3 Photocopying Machines	4 – 10 Photocopying Machines
Government	6.25	71.88	0.00
Health Sector	40.00	40.00	0.00
Education Sector	9.28	24.74	3.09
ICT Sector	25.00	58.33	0.00
Business Sector	18.75	60.42	4.17
TOTAL	13.57	43.72	2.51

Source: Scan-ICT Baseline Survey 2006, The Gambia

3.3.3 Access to Internet

Since the inception of internet services in 1998, Gambia has experienced sustained growth of the Internet market. Internet services that are common in the market are: email, web browsing, web hosting, discussion forums and file transfers. The survey reveals a

regular increase in the number of institutional subscribers while the number of individual subscribers showed a downward trend. Investments aimed at modernising the network of the traditional operator can justify the increase in the number of professional subscribers.

The major advantage of the Gambia in Internet access is the presence of four ISPs – Gamtel, QuantumNet, Netpage and Airtip – who are licensed to operate in the country. Because of the competitive environment that prevailed among ISPs, the Dial-up Internet services are comparatively cheaper than many African countries. In fact, at an average of 200 Dalasis equivalent to 8 US\$ per month for unlimited access and less than 50 cents per hour for phone/dial up time, this therefore justifies the affordability of dial-up internet services in the Gambia.

Most of the access to Internet in The Gambia is through dial up because leased lines or direct access is expensive for the individual subscribers. Consequently the Internet access is quite slow for large amount of data transfer. Users of Internet have indicated that the speed of current dial-up internet services is very slow resulting in high dial up time cost and less reliable information exchange where large volumes of data/file transfers are concerned.

However, despite the presence of four ISPs and impressive Internet spread in the Greater Banjul area, the general Internet penetration rate remains very low in rural areas, as the actual numbers of institutions connected to the Internet in remote areas are very few. Availability of Internet access in government offices, particularly in service departments and local government offices in provinces will go a long way to provide Gambians with information, and services essential for any successful e-government.

Prominent government offices are to be provided with dedicated connection to Internet so that more web-based services can be initiated with adequate information security. ISPs are to be encouraged to increase their bandwidth with a corresponding increase in international gateway bandwidth.

The study results showed that in all the public and private institutions, there are relatively more institutions that were connected to Internet (46.23%) as compared to those institutions who reported having a Websites (22.11%) in their workplace. Institutions in the ICT sector, 91.67% and 58.33% have respectively reported having an internet connection and a website at their workplace. Institutions in the business and the government sectors reported a high proportion of internet connectivity and website ownership in their offices, see table 13.

Table 13: Availability of Internet Connection and Ownership of Website at Workplace (in %)

Type of institution	Connected to Internet at Workplace	Institution has a Website
Government	62.50	15.63
Health Sector	30.00	20.00
Education Sector	20.62	10.31
ICT Sector	91.67	58.33
Business Sector	79.17	41.67
TOTAL	46.23	22.11

Source: Scan-ICT Baseline Survey 2006, The Gambia

3.3.4 Teledensity

3.3.4.1 Fixed telephony

There has been a significant increase in the number of fixed telephone subscribers during the past three years. From 2004 to 2006, rates for a fixed telephone local call for non-busy hours as well as for busy hours have doubled. On the other hand, during the same period, charges for telephone installation remained constant for residential lines and for business lines.

Table 14: Number of Fixed Telephone Subscribers; 2004 to 2006

Subscribers	2004	2005	2006
Number of Fixed Telephone Subscribers	42, 000	44,000	53,000

Source: Facts & Figures; 2005 & 2006; PURA

The provision of lines is sufficient in the different categories of institutions. For example, institutions with 1 to 3 telephone lines account for 45.73% of all telephone lines. Generally, 15.58% of institutions on the average have more than four fixed telephone lines. This is reasonably adequate to meet the communication needs in the structures. Generally, in each sector of institutions the penetration rate on availability of fixed telephone line is at least 42%, see table 15.

Table 15: Average Number of Fixed Telephone Lines in Workplaces (in %)

Type of Institution	Fixed Telephone Line			
	No line	1 to 3 lines	4 to 10 lines	11 to 20 lines
Government	0.00	18.75	21.88	3.13
Health Sector	0.00	70.00	30.00	0.00
Education Sector	2.06	47.42	1.03	1.03
ICT Sector	0.00	50.00	33.33	8.33
Business Sector	10.42	54.17	22.92	4.17
TOTAL	3.52	45.73	13.07	2.51

Source: Scan-ICT Baseline Survey 2006, The Gambia

With respect to the number of fixed telephone line in the workplace in the local government areas, the survey revealed that on average only 4.02% of sample institutions do not have any fixed telephone set in the office. Generally, 31.16% and 33.67% of institutions respectively reported having one and at least two telephone lines in the offices as shown in table 16. The availability of fixed telephone lines in offices in each local government area appears to be same.

Table 16: Fixed Telephone sets in the Offices per Local Government Area (in %)

Local Government Area (LGA)	Fixed telephone lines		
	No set	One set	At least two sets
Banjul	6.45	25.81	32.26
Kanifing	6.02	42.17	44.58
Brikama	0.00	44.44	55.56
Mansakonko	0.00	22.22	22.22
Kerewan	2.94	29.03	14.71
Kuntaur	0.00	0.00	14.29
Janjangbureh	0.00	6.25	18.75
Basse	0.00	33.33	66.67
TOTAL	4.02	31.16	33.67

3.3.4.2 Mobile telephony

The mobile telephony service is provided by GAMCEL and AFRICELL through GSM 800/900 networks with country wide coverage. The mobile telephony experienced a rapid increase in the Gambia in 2001 with a large number of Gambians owning mobile sets. The penetration rate increased from 7.33% in 2003 to 16.87% in 2006, see table 17.

Table 17: level of fixed and mobile telephone expressed as the number of lines per 100 inhabitants

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Fixed	2.15	2.39	2.65	2.71	2.66	2.81	2.99	3.05	4.72
Mobile	.42	.43	0.45	4.26	7.53	7.33	12.47	15.35	16.87
Total	2.58	2.82	3.09	6.97	10.19	10.14	15.47	18.40	21.59

Source: Annual Report 2006, PURA

The proportion of households owning a mobile telephone is by far greater than those households that own fixed telephone lines, see table 18. The analysis of the study results showed that about 65.09 percent of responding households do have a mobile telephone. There is not much disparity in proportion of households in the urban (76.58%) and rural (54.75%) that own a mobile telephone.

Table 18: Distribution of households equipped with individual telephone by Area of Residence (in %)

Type of facility Available	Urban	Rural	The Gambia
Access to Electricity	63.22	18.75	39.89
Fixed telephone owned	32.17	10.27	20.64
Mobile telephone owned	76.58	54.75	65.09

Source: Scan-ICT Baseline Survey 2006, The Gambia

Moreover, it should be noted that this level of mobile telephone equipment on the ground is fairly distributed in the local government areas. In both local government areas of Banjul and Kanifing, which are exclusively urban, the cell phones were used by more than 75 percent of households. There are still great regional disparities notably because of limited telephone network coverage in the North Bank of the river Gambia.

Table 19: Estimated percentage of households in The Gambia with access to ICT by LGA (in %)

Households Access	Local Government Area (LGA)							
	Banjul	Kanifing	Brikama	Mansakonko	Kerewan	Kuntaur	Janjangbureh	Basse
Fixed telephone	46.25	36.58	7.74	0.17	17.45	0.00	4.04	16.67
Mobile telephone	75.99	83.39	65.35	28.37	54.19	48.62	37.23	51.07
Electricity	86.25	68.60	7.56	0.06	0.05	0.00	1.41	0.84

Source: Scan-ICT Baseline Survey 2006, The Gambia .: Based on 1504 households

The proportion of households having access to electricity in urban area is more than three folds of the rural households.