

The State of the ICT Sector Report in South Africa (updated version)

MARCH 2023



INDEPENDENT COMMUNICATIONS
AUTHORITY OF SOUTH AFRICA

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EXECUTIVE SUMMARY

This is the 8th annual State of Information Communication Technology (ICT) sector report produced by the Independent Communications Authority of South Africa ("ICASA / the Authority") since 2015.

The Authority recognises that access to a comprehensive and timely set of ICT indicators is vital for a proper regulation of the sectors for which it is responsible namely: broadcasting, postal, and telecommunications sectors. The intention is to use these indicators to benchmark values, inform sector policy analysis and ensure compatibility with global benchmarking and data compiled by other regulators. The data used to compile this report was collected over a 12-month period ending 30 September 2022. The data was collected from secondary sources (such as Statistics South Africa ("Stats SA") and OOKLA speed test) as well as through a detailed questionnaire sent to relevant stakeholders by the Authority.

The Authority received a total of eighty-five (85) responses from the Electronic Communications Service (ECS) and Electronic Communications Network Service (ECNS) licensees in 2022 (lower from 102 responses received in 2021). About twenty-five (25) ECS/ECNS licensees are in the process of liquidation, and some ECS/ECNS licensees are no longer in business. Twenty-seven (27) responses were from television and radio broadcasters in 2022 (lower from 27 responses received in 2021). The responses received from postal services provider remain stagnant at seven (7) responses both in 2021 and 2022. All the major operators have responded to the questionnaire.

The report also includes an international comparison of South Africa's internet speeds for fixed as well as mobile broadband (both download and upload speeds).

According to the 2021 Stats SA's General Household Survey (GHS) report, the proportion of households using only cellular phones for communication increased by 1.4% from 89.4% in 2020 to 90.80% in 2021. The percentage of households using

both cellular and fixed (or landline) phones decreased from 8.2% (2020) to 6.5% in 2021. The percentage of households with no access to either a landline or a cellular phone increased from 1.8% in 2020 to 2.2% in 2021. The proportion of households using just landlines has been steady at 0.1% from 2016 to 2019 and increased to 0.5% from 2020 to 2021.¹

The total revenue reported for the three sectors (telecommunications, broadcasting and postal) increased by 4.61% from R243.6 billion in 2021 to R254.8 billion in 2022. Despite the loadshedding faced by the country in 2022, telecommunications and broadcasting services revenue increased by 3.94% and 11.97% in 2022, respectively; however, the postal services revenue decreased by 16.26% from R6.6 billion in 2021 to R5.5 billion in 2022.

The total telecommunications investment increased by 17.16% from R33.9 billion 2021 to R39.7 billion in 2022.

National population coverage for 3G stood at 100% in 2022. National population coverage for 4G/LTE stood at 98%. National 5G population coverage increased from 7.5% in 2021 to 20% in 2022.

The total numbers for the three sectors employment increased by 20% in 2022. For the same period, employment in the three sectors changed as follows: telecommunications sector employment increased by 46.36%; broadcasting sector employment decreased by 8.56%; and postal sector employment increased by 3.43%.

According to Ookla's Global Speedtest® Index, the fixed broadband speed ranking for South Africa has progressed from 100th place in 2021 to 95th in 2022 (out of 180 countries). The mobile broadband ranking has also progressed from 61st place in 2021 to 58th in 2022 (out of 137 countries).

¹ <https://www.statssa.gov.za/publications/P0318/P03182021.pdf>

The total number of Pay TV subscriptions slightly increased by 0.06% in 2022 (from 8 300 403 in 2021 to 8 305 578 in 2022).

The number of set-top boxes increased by 4% (from 20.5 million in 2021 to 21.3 million in 2022). The number of Digital Terrestrial stations remain the same from 2021 to 2022 at 86. However, number of Digital Satellite stations decreased by 2% in 2022.

Regarding postal services, the data shows that the total letter delivery services (registered letters) decreased by 3.32% from 331 million (2021) to 320 million in 2022. Domestic service and international outbound (Local Volumes) decreased by 2% in 2022.

The loadshedding has impacted several industries in South Africa, including the ICT Sector. The availability of communication services is dependent on the consistent supply of electricity. Interruptions in the supply of electricity have an impact on, *inter alia*, quality of communications services provided to the public and businesses. This report elaborates on some of the impact of loadshedding on ICT indicators. The total amount spent on batteries by licensees during loadshedding was R2.6 billion in 2022. R873 million was spent on generators during this period. About 16,660 generators and 98,733 batteries were purchased by licensees in 2022 during loadshedding.

Considering the impact of the loadshedding on 9 February 2023, the President, Mr Cyril Ramaphosa, in his 2023 State of the Nation Address, announced that the Minister of Cooperative Governance and Traditional Affairs has declared a national state of disaster to respond to the electricity crisis and its effects. The state of disaster will enable the Government to provide practical measures that are needed, *inter alia*, for supporting businesses in their operations, assisting, and protecting the public, providing relief to the public and preventing the possible progression to a total blackout from occurring. Organs of State are required to prepare and submit reports, as required by the National Disaster Management Centre.

As part of the measures to address the loadshedding crisis, on 27 February 2023, the Minister of Cooperative Governance and Traditional Affairs, issued regulations under the Disaster Management Act, 2002, which, *inter alia*, empowers the Minister of Communications and Digital Technologies to issue directions requiring the mobile network operators and broadcasters to issue public service announcements on the national state of disaster, at no cost to users. On 28 March 2023, the Minister of Communications and Digital Technologies issued Policy Directions regarding the communications and digital technologies sector. The purpose of the Policy Directions is to ensure that measures are taken in respect of the communications and digital technologies to effectively deal with the effects of the national state of disaster and where applicable prevent the escalation of the electricity constraints. The Authority is considering the Minister's Policy Directions.

1 INTRODUCTION

The report presents the performance and developments in the ICT sector, focusing on the three areas that are regulated by ICASA, namely: telecommunications, broadcasting, and postal services.

The report aims to provide up to date information to enable interested parties to make informed decisions on the ICT sector.

ICASA Mandate

ICASA is a creature of statute and derives its mandate from the Constitution of the Republic of South Africa, 1996, the Independent Communications Authority of South Africa Act, 2000 (Act No. 13 of 2000) (ICASA Act), the Broadcasting Act, 1999 (Act No. 4 of 1999), the Electronic Communications Act, 2005 (Act No. 36 of 2005), and the Postal Services Act, 1998 (Act No. 124 of 1998). The Authority regulates electronic communications, postal services, and broadcasting in the public interest.

Within this mandate, the Authority's responsibility includes the collection of information and statistics on the ICT sector to monitor, report and ensure that regulations are fact-based.

The Authority also has a responsibility to ensure that all South Africans have access to affordable services of high quality, as stipulated in the letter and spirit of the underlying statutes.

Methodology

ICASA has the authority to request data from licensees in terms of section 4(3)(g) of the ICASA Act. The Authority uses questionnaires customised for Electronic Communications Services (ECS), Electronic Communications Network Services (ECNS), television and sound broadcasting services and postal service licensees to

collect data on ICT indicators. The questionnaires cover data over a 12-month period ending on the 30th of September each year, unless otherwise specified. For confidentiality reasons, the information gathered is aggregated to conceal stakeholder-specific information.

Data collected is then used by the Authority to produce the State of the ICT Sector report that is published on its website on an annual basis. The report also features data from secondary sources, such as Statistics South Africa (Stats SA) and OOKLA (Speedtest intelligence).

Limitations

In terms of identified possible limitations to the report that should be borne in mind when interpreting the information collected is that:

- the unreserved postal sector always had a low response rate to the questionnaire; and
- the data contained in the report is self-reported by licensees, which therefore requires a more rigorous data-validation process.
- About 25 of the licensees in the telecommunications sector are in the process of liquidation, and some of them are no longer in business.

Structure of the report

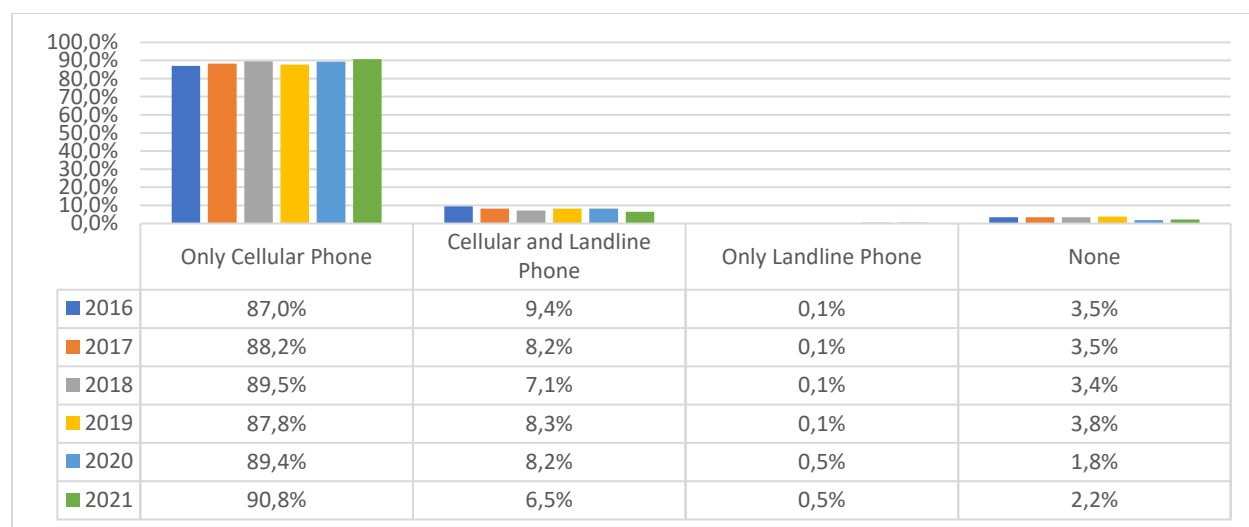
The report is structured as follows: Section 2 presents information as collected by Stats SA. Section 3 looks at information as collected by the Authority. The information is then broken down and presented per sector: Telecommunications Sector (Section 4), Broadcasting Sector (Section 5), and Postal Services Sector (Section 6). Section 7 provides a conclusion.

2 INFORMATION ON THE ICT SECTOR AS REPORTED BY STATISTICS SOUTH AFRICA

The State of ICT sector report is usually published once a year ahead of Stats SA's *General Household Survey* ("GHS") on or by the 31st of March annually in accordance with ICASA's Operational Performance Plan.

According to the GHS, the proportion of households who use only cellular phones as a means of communication increased by 1.4% from 89.4% in 2020 to 90.80% in 2021. Households who use both cellular phones and fixed (or landline) decreased from 8.2% in 2020 to 6.5% in 2021. A proportion of 2.2% was accounted for by households who have no access to either a landline or a cellular phone. The proportion of households who use only landlines has been steady at 0.1% from 2016 to 2019 and increased to 0.5% from 2020 and 2021. Cellular phones continue to displace landline phones at the household level with only 0.5% of households using only landline phones compared to 0.1% in 2016. There are still households that remain unconnected with no access to either a landline or a cellular phone – albeit in the low single digits.

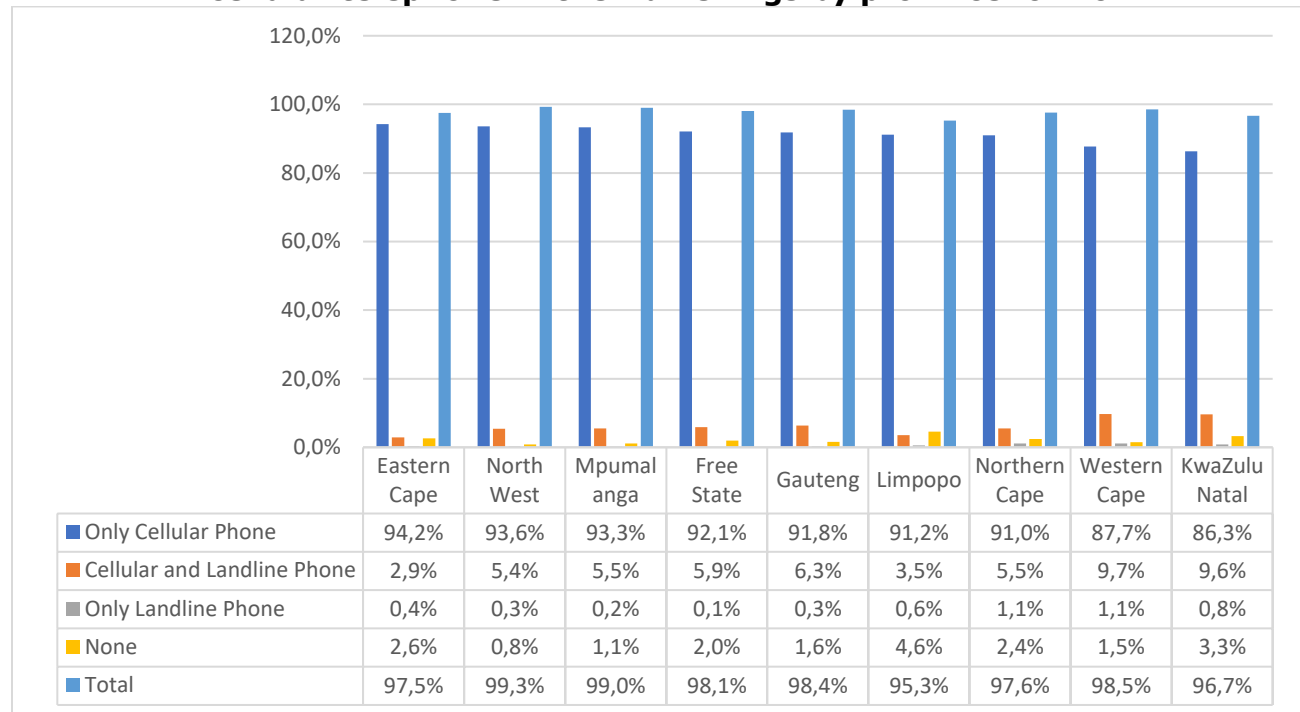
Graph 1: Proportion of households who have a functional landline and/or cellular telephone in the Republic of South Africa for 2016 to 2021



Source: StatsSA GHS, 2016,2017,2018, 2019,2020 & 2021

Limpopo and KwaZulu Natal have the highest number of households with no access to either cellular phone or a landline seating at 4.6% and 3.3%, respectively. Provinces with the highest number of household with access to either cellular phone or landline are North West and Mpumalanga seating at 99.3% and 99.0%, respectively.

Graph 2: Percentage of Households who have functional landline and cellular telephone in their dwellings by province for 2021



Source: StatsSA GHS, 2021

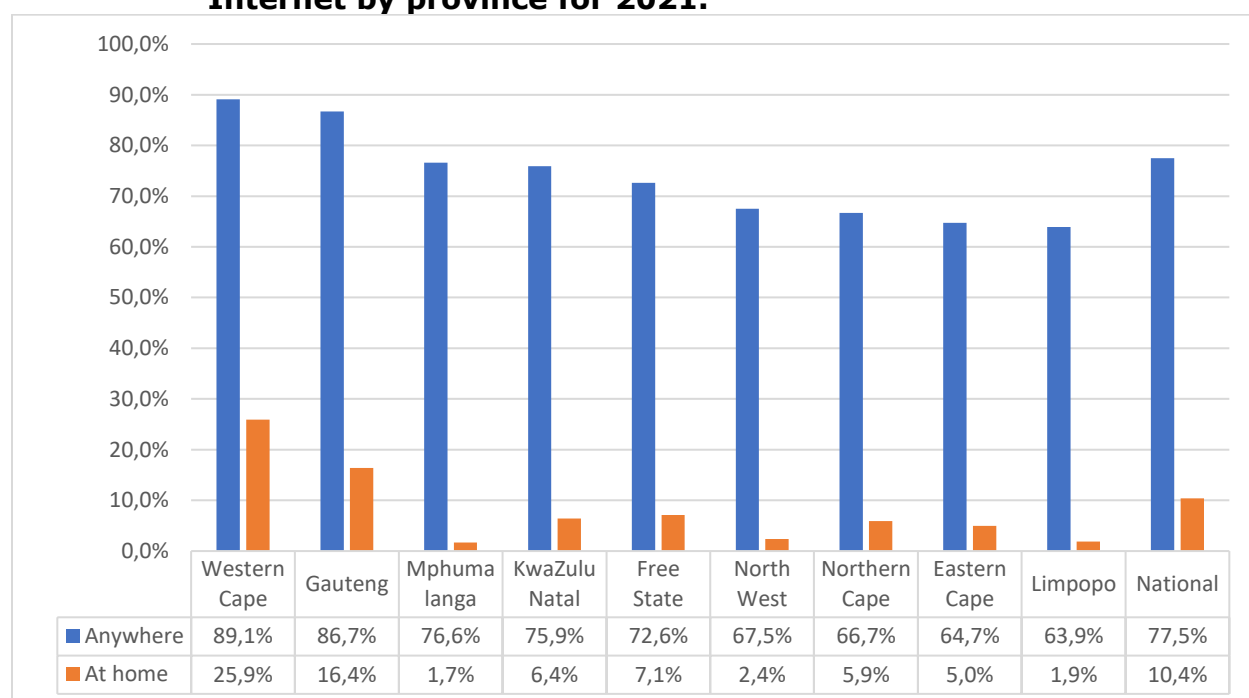
The proportion of households with access to Internet “anywhere” was at 77,5% on the national level in 2021, this high percentage is mainly because at least one member of the household had access to internet and mainly through mobile devices.

At the Provincial level, the Western Cape was the province with the highest proportion of households with access to the Internet “anywhere” at 89,1%, followed by Gauteng at 86,7%. The province with the lowest access to the Internet “anywhere” was Limpopo at 63,9%.

Western Cape is the province with the highest proportion of households with access to the Internet “At home” at 25,9%, followed by Gauteng at 16,4% and Mpumalanga is the least province at 1,7%.

At the national level, about 90% of the households do not have Internet connection at home.

Graph 3: Percentage of Households with access to the Internet at home, or for which at least one member has access to or used the Internet by province for 2021.



Source: StatsSA GHS, 2021

In Table 1 below Internet access is further broken down in terms of place of access such as metropolitan, urban, or rural status at both Provincial and National levels. In 2021, 69.4% of households nationally had access to the Internet using mobile devices, with the majority of this access accounted for by Households living in urban areas 73.3% and metropolitan areas sitting at 73.4%. Mobile devices are also the most used means of accessing the Internet by Households in rural areas at 59.2%.

Table 1 also clearly indicates the geographic digital divide, in terms of metro vs urban vs rural split. Cell phone is the overwhelming means of access to the Internet.

Table 1: Households' access to the Internet by place of access, urban/rural status, and province, 2021

Place where internet is	Rural/Urban status	Province (per cent)									
		WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
At home	Metro	30,3	10,7	—	12,1	10,2	—	16,5	—	—	17,2
	Urban	18,3	5,1	6,7	5,1	10,0	5,2	15,4	2,5	4,4	8,8
	Rural	12,2	0,2	4,1	4,5	0,2	0,3	29,7	1,0	1,3	1,2
	Total	25,9	5,0	5,9	7,1	6,4	2,4	16,4	1,7	1,9	10,4
At work	Metro	20,4	15,2	—	18,8	27,9	—	29,0	—	—	26,1
	Urban	27,9	11,8	18,1	9,4	22,3	13,0	20,1	10,0	17,8	17,1
	Rural	11,9	7,2	5,8	8,9	3,2	1,7	9,1	4,4	4,8	4,6
	Total	22,2	11,3	14,4	12,1	17,3	6,6	27,8	6,8	7,3	17,6
Using mobile devices	Metro	75,4	61,7	—	62,8	83,5	—	72,4	—	—	73,4
	Urban	78,9	73,2	64,3	66,3	80,8	72,9	74,5	68,7	79,1	73,7
	Rural	55,0	53,6	52,9	72,5	57,8	61,7	63,2	66,3	57,5	59,2
	Total	75,4	60,5	60,8	66,0	73,2	66,5	72,6	67,3	61,7	69,4
At Internet cafes or educational facilities	Metro	17,1	12,5	—	5,8	28,2	—	23,2	—	—	21,6
	Urban	18,3	1,6	1,4	6,5	7,4	3,6	24,6	18,8	1,7	11,1
	Rural	3,7	1,3	0,0	11,3	3,9	2,7	16,9	8,1	1,5	3,5
	Total	16,8	5,4	1,0	6,9	14,4	3,1	23,3	12,7	1,5	13,6

Source: StatsSA GHS, 2021

3 ICT DATA COLLECTED BY ICASA

This section reports on the aggregated data that was received by ICASA through questionnaires sent to all licensees in November 2022.

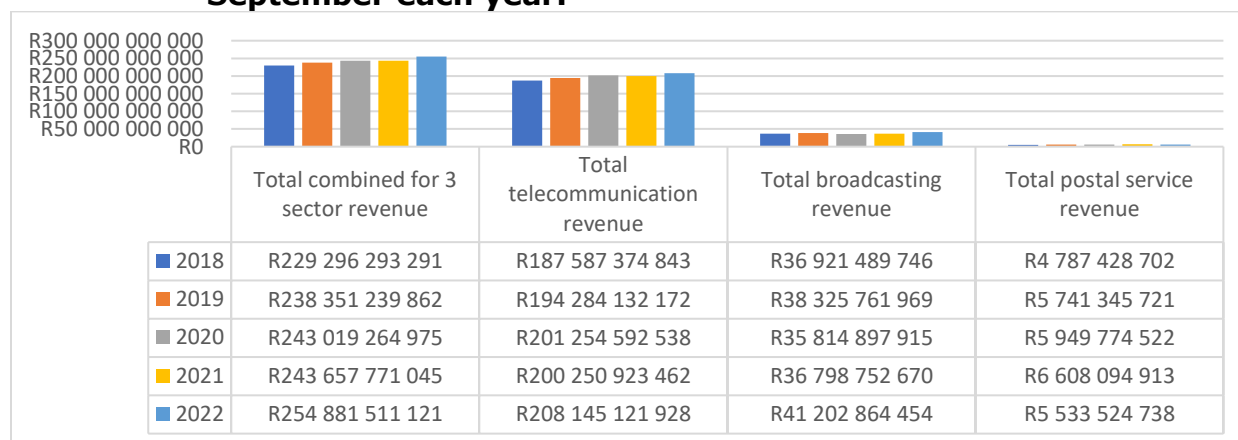
3.1 Revenue for the three sectors regulated by ICASA.

Despite the impact of loadshedding in the country, the total sector revenue (telecommunications, broadcasting and postal) experienced a growth of 4.61% from R243.6 billion in 2021 to R254.8 billion in 2022, this was a significant increase compared to a growth of 0.3% post Covid-19 from R243 billion in 2020 to R243.6 billion in 2021.

The telecommunications and broadcasting services revenue increased by 3.94% and 11.97% in 2022, respectively. However, the postal services revenue decreased by 16.26% from R6.6 billion in 2021 to R5.5 billion in 2022.

The revenue for the three sectors increased by 2.68% for a period of 5 years. Over the same period, telecommunications services revenue increased by 2.63%, broadcasting services revenue increased by 2.78% and postal services revenue also increased by 3.69%.

Graph 4: Total revenue of the 3 sectors, for the 12 months ending 30th September each year.



Source: ICASA Electronic Telecommunications, Broadcasting and Postal Questionnaire 2018 - 2022

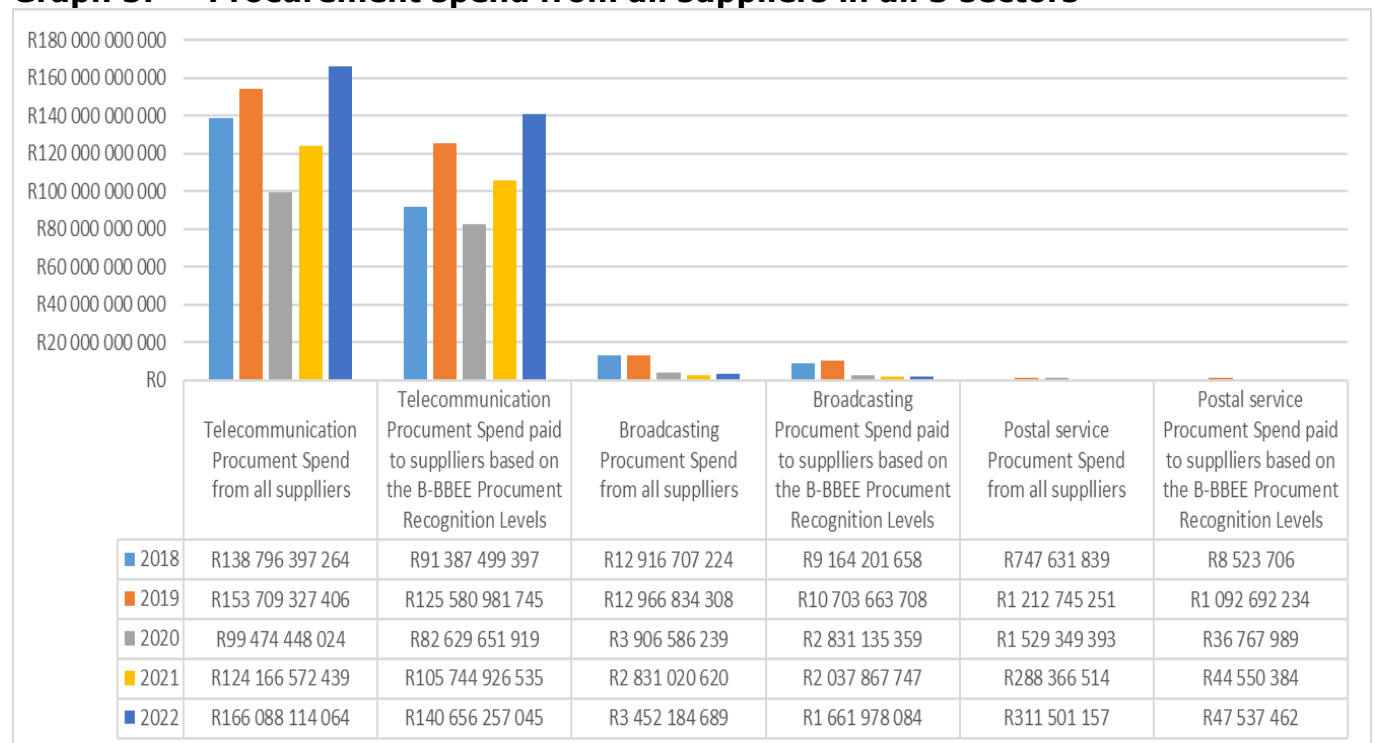
3.2 Procurement spend from all suppliers in all 3 sectors.

Total combined telecommunications services procurement spend paid to suppliers was R166 billion in 2022, R140.6 billion (84.69%) of this amount was spent on suppliers based on their B-BBEE rating level. This indicates that there is increased promotion of B-BBEE participation in the telecommunications service's procurement, from 65.85% in 2018 to 84.69% in 2022.

Total combined broadcasting services procurement spend paid to suppliers was R3.4 billion in 2022, R1.6 billion (48.14%) of this amount was spent on suppliers based on their B-BBEE rating level.

Total combined postal services procurement spend paid to suppliers was R311 million in 2022, R47 million (15.26%) of this amount was spent on suppliers based on their B-BBEE rating level.

Graph 5: Procurement spend from all suppliers in all 3 sectors



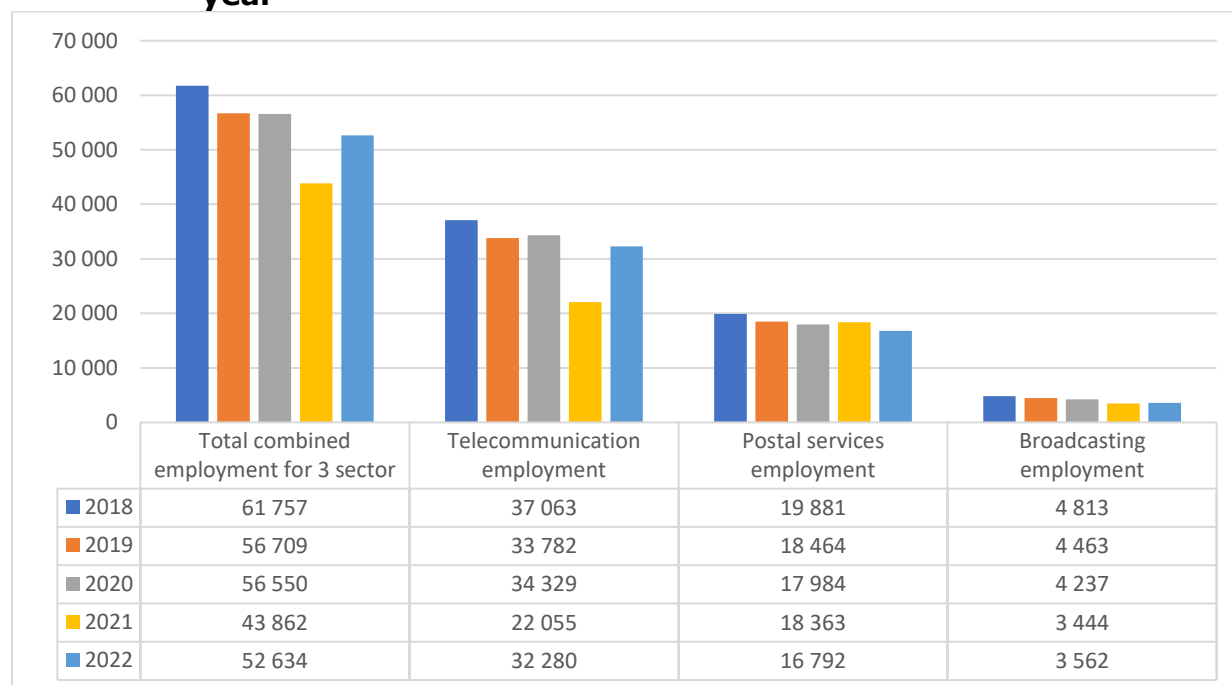
Source: ICASA Electronic Communications, Broadcasting and Postal Questionnaires, December 2018 – 2022

3.3 Employment levels for the three sectors that ICASA regulates.

Total numbers for the three sectors increased by 20% in 2022. For the same period, employment changes in the specified sectors were as follows: telecommunications sector employment increased by 46.36% (because there were more licensees who submitted employment data in 2022 as compared to 2021); broadcasting sector employment also increased by 3.43% and postal sector employment decreased by 8.56%.

Over a 5-year period, the total employment for the three sectors decreased by 3.92%. Telecommunications sector employment decreased by 3.40%, broadcasting sector employment decreased by 4.13% and postal service employment still shows a decline in terms of growth as it decreased by 7.25% for the same period.

Graph 6: Total employment for the 3 sectors, as of 30th September each year



Source: ICASA Electronic Communications, Broadcasting and Postal Questionnaires 2018 – 2022
Some of the operators who submitted employment in 2022 did not submit in 2021.

4 TELECOMMUNICATIONS SECTOR

The telecommunications sector revenue realised a positive increase of about R8 billion in 2022, the overall revenue from mobile services also increased by 7.07%. However, total fixed internet and data revenue and total fixed line revenue decreased by 10.97% and 14.49% in 2022, respectively.

The Authority continues to work on regulatory initiatives aimed at reducing the cost to communicate. In March 2022, the Authority successfully concluded the International Mobile Telecommunications (IMT) spectrum auction, which raised more than R14.4 billion, for the national fiscus. This spectrum will, *inter alia*, increase lower communication costs and enhance competition in the sector. Furthermore, on 17 August 2022, the Authority initiated the second phase of the IMT licensing process. This process seeks to make additional Radio Frequency Spectrum available to prospective licensees to provide Mobile Broadband Wireless Access Services with the view to contribute to, *inter alia*, the achievement of the South Africa Connect targets and the United Nations Sustainable Development Goals.

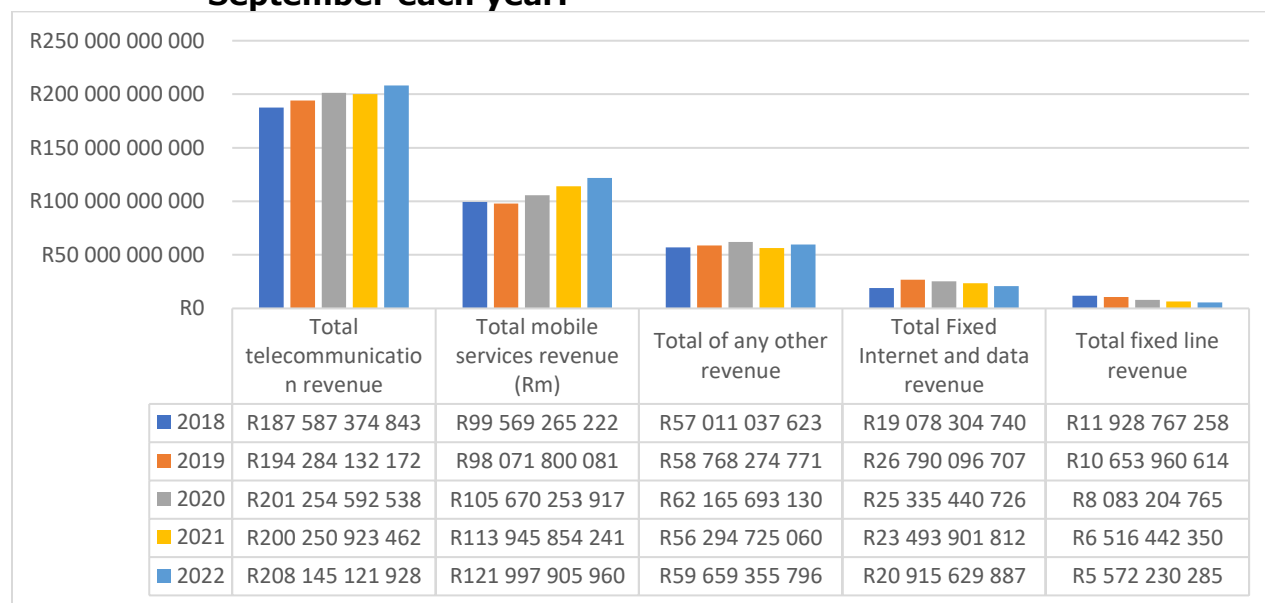
4.1 Telecommunications Sector Revenue

The total telecommunications revenue increased by 3.94%, from R200.2 billion in 2021 to R208.1 billion in 2022.

Total mobile services revenue increased by 7.07%. The total fixed internet and data revenue decreased by 10.97%, and total fixed line revenue decreased by 14.49%, due to a high preference for mobile services by subscribers in 2022.

For a period of 5 years the total telecommunications sector revenue increased by 2.63%. The total mobile services revenue and total fixed internet and data revenue increased by 5.21% and 2.33%, respectively, however fixed line revenue decreased by 17.33% for the same period.

Graph 7: Telecommunications revenue, for the 12 months ending 30th September each year.



Source: ICASA Electronic Communications Questionnaire 2018 - 2022

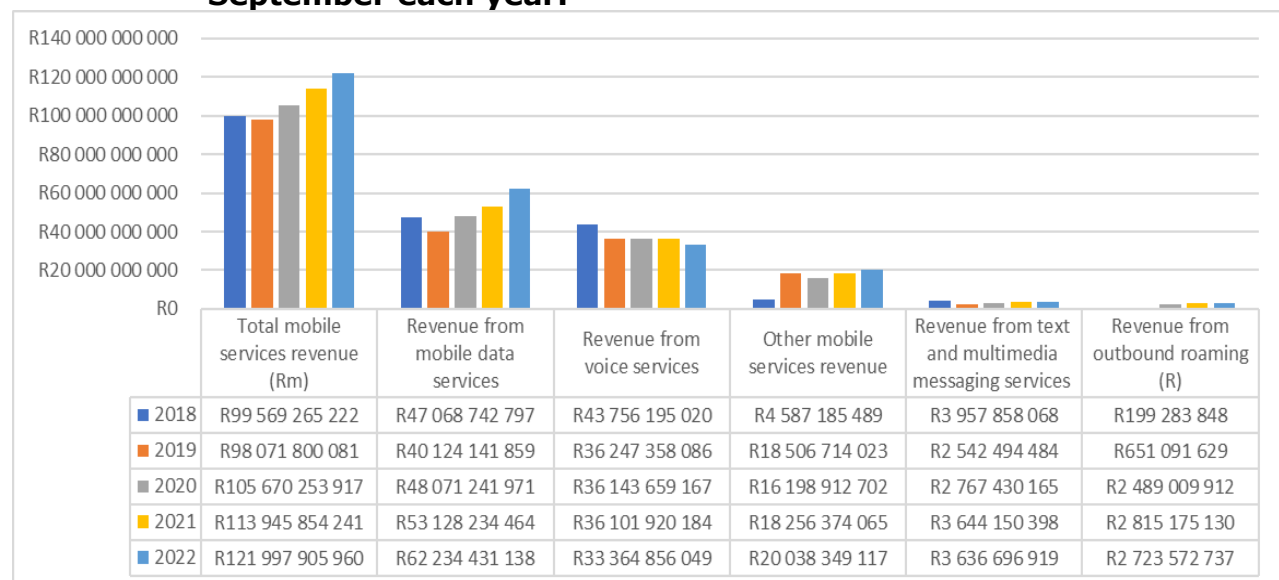
Note: Includes revenues from telecommunication services earned from retail fixed-telephone, mobile-cellular, internet and data services offered by telecommunication operators (both network and virtual, including resellers) and interconnection, equipment sales and any other revenue.

4.1.1 Total Mobile Services Revenue

Mobile voice is declining now only contributing 27.35% of the total mobile service revenue, which was 43.95% in 2018, while mobile data is growing at 17.14% year on year, is now over 50% of revenue.

For a period of 5 years, total mobile services revenue and revenue from mobile data services increased by 5.21% and 7.23%, respectively. Revenue from voice services, and text and multimedia messaging services decreased by 6.55% and 2.09%, respectively and outbound roaming revenue decreased by 3.25%.

Graph 8: Mobile services revenue for the 12 months, ending 30th September each year.



Source: ICASA Electronic Communications Questionnaire 2018 - 2022

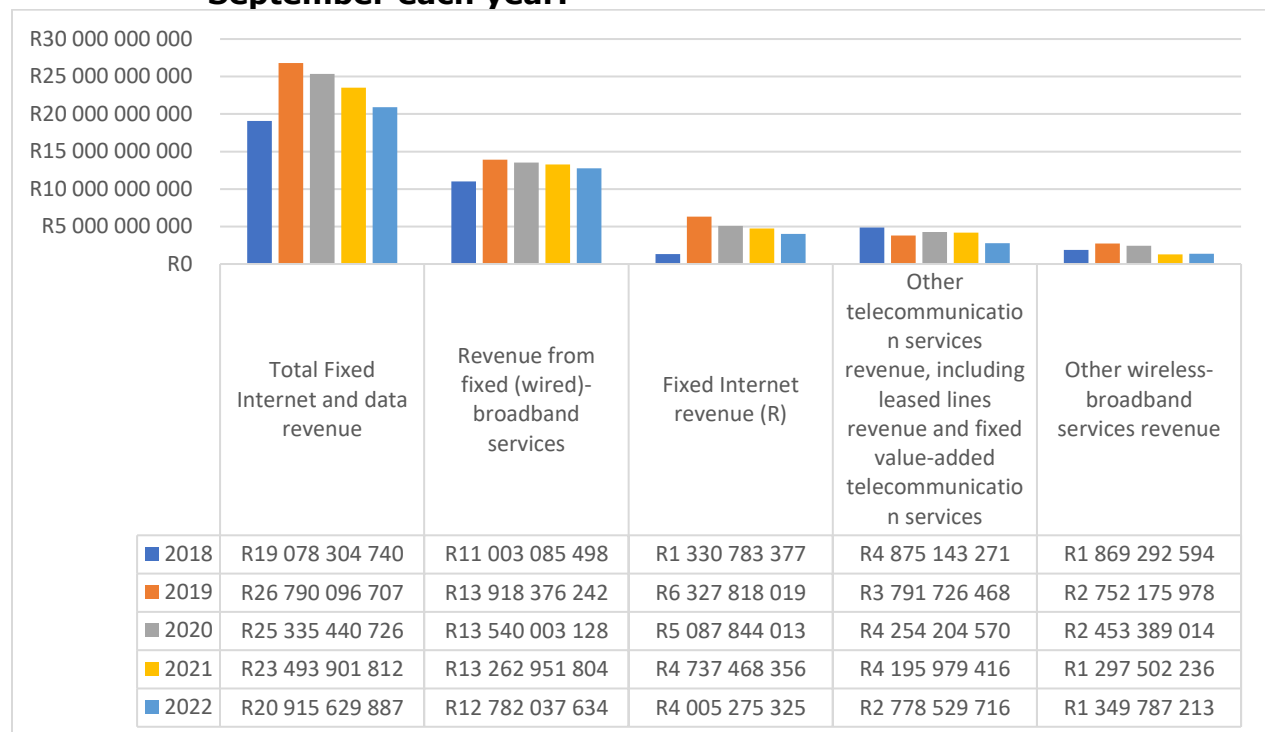
Note: This includes retail mobile revenue from the provision of voice services from national and international calls; outbound roaming abroad; mobile data; and text messaging and multimedia messaging (SMS and MMS) and any other mobile revenue. Excludes equipment revenue and termination (interconnection) revenue and any other revenue categories e.g., other wholesale services.

4.1.2 Total Fixed Internet and Data Revenue

Total fixed internet and data revenue decreased by 10.97% (from R23.4 billion in 2021 to R20.9 billion in 2022). Revenue from fixed (wired)-broadband services decreased by 3.63%, and revenue for fixed internet decreased by 15.46% in 2022.

Over a 5-year period, total fixed internet and data revenues increased by 2.33%. The revenue from fixed (wired)-broadband services decreased by 3.82% for the same period.

Graph 9: Fixed internet and data revenue, 12 months ending 30th September each year.



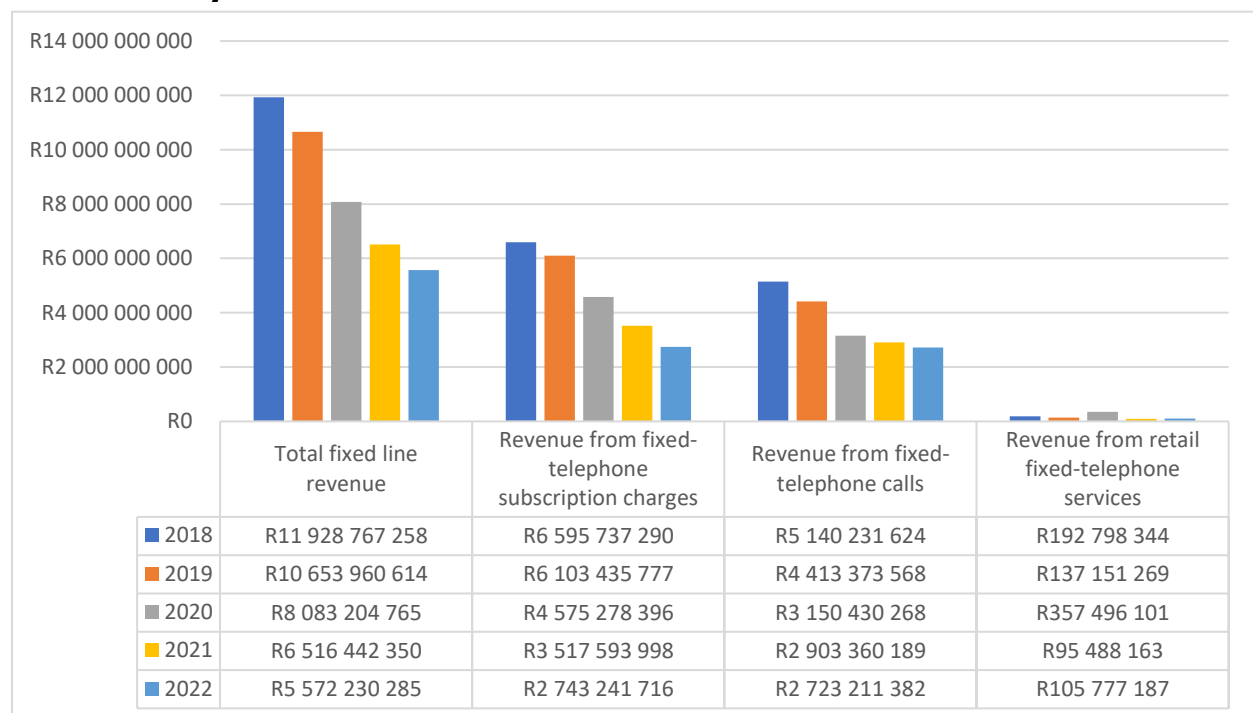
Source: ICASA Electronic Communications Questionnaire, December 2018 - 2022

4.1.3 Total Fixed Line Revenue

Total fixed line revenue decreased by 14.49% from R6.5 billion in 2021 to R5.5 billion in 2022. Revenue from fixed-telephone subscription charges and revenue from fixed-telephone calls decreased by 22.01% and 6.20%, respectively in 2022. Revenue from retail fixed-telephone services increased by 10.78%.

There is massive decline in fixed line revenue, for a period of 5 years, the total fixed line revenue decreased by 17.33%.

Graph 10: Total Fixed line revenue, 12 months ending 30th September each year.



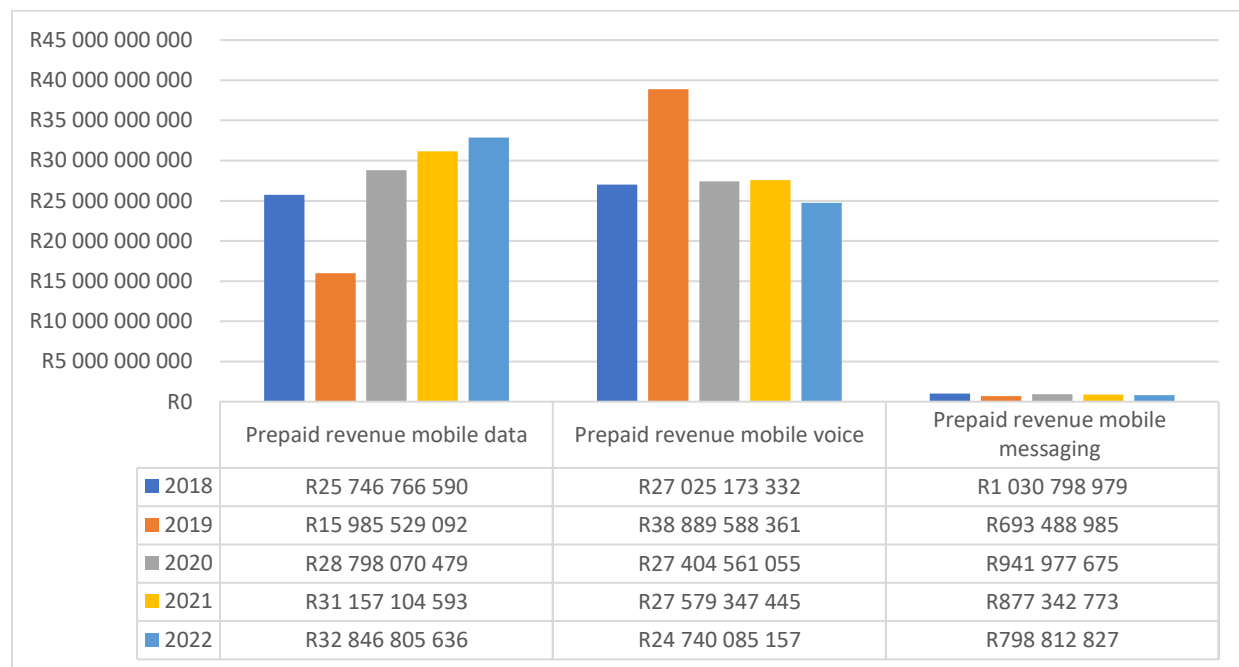
Source: ICASA Electronic Communications Questionnaire, December 2018 - 2022

4.1.4 Prepaid Mobile Voice, Data and Messaging Revenue

The revenue from prepaid mobile data increased by 5.42% in 2022, and voice increased by 8.2% and 0.6%, respectively in 2021. The prepaid voice and messaging decreased by 10.29% and 8.95% in 2022, respectively.

For a period of 5 years, revenue from prepaid mobile data increased by 6.28%. The revenue from prepaid mobile voice and messaging decreased by 2.18% and 6.18% respectively.

Graph 11: Prepaid mobile voice, data and messaging revenue for the 12 months ending on 30th September each year.



Source: ICASA Electronic Communications Questionnaire 2018 - 2022

4.1.5 Prepaid data prices (month validity)

The Prepaid data bundle sizes range from 100 MB to 20480 MB, with price ranges as indicated in Table 2. The data bundles are valid for a period of a month with an automatic roll-over for any unused data remaining after the expiry of the validity period.

Table 2: Prepaid data price (month validity)

Prepaid data Bundle prices		
Data Bundle (MB)	2023 ² prices	
	Lowest price	Highest price
100(MB)	R15	R20
250 (MB)	R35	R35
500 (MB)	R69	
1024 (MB)	R79	R85
1536 (MB)	R89	R99
2048 (MB)	R139	R149
3072 (MB)	R199	R229
5120 (MB)	R299	
6144 (MB)	R299	R349
10240 (MB)	R469	
20480 (MB)	R599	R699

Source: ICASA database 2023

² Updated on 22 February 2023

4.1.6 Post-paid data prices (month validity)

The post-paid data bundle, as indicated in the table, shows the 2023 price ranges per Gigabyte.

Table 3: Post-paid data price (month validity)

Post-paid data Bundle prices		
Data Bundle (GB)	2023 ³ prices	
	Lowest price	Highest price
1 GB	R40	R89,00
2 GB	R60	R123
3 GB	R149	R189
4 GB	R99	R100
5 GB	R99	R229
6 GB	R99	R129
10 GB	R149	R339
14 GB	R259	
15 GB	R149	
20 GB	R199	R569
30 GB	R399	R679
50 GB	R499	R959
70 GB	R299	
100 GB	R1 699	R1 799
200 GB	R2 099	

Source: ICASA database 2023

³ Updated on 22 February 2023

4.1.7 Prepaid and Post-paid Voice and Messaging prices

The price per minute for prepaid voice range from R0.66 to R2.50 and for post-paid it ranges from R0.35 to R1.79.

The price for a prepaid local SMS ranges between R0.15 and R0.52 and post-paid is R0.30 to R0.55.

The price of an international prepaid SMS ranges between R1.61 to R2, while post-paid ranges from R1.52 to R1.74.

Table 4: Prepaid and post-paid voice and SMS prices

Price range	Voice (Per minute)	SMS (Local)	SMS (International)
Prepaid	R0.66 to R2.50	R0.15 to R0.52	R1.61 to R2.00
Post-paid	R 0.35 to R 1.79	R 0.30 to R 0.55	R 1.52 to R1.74

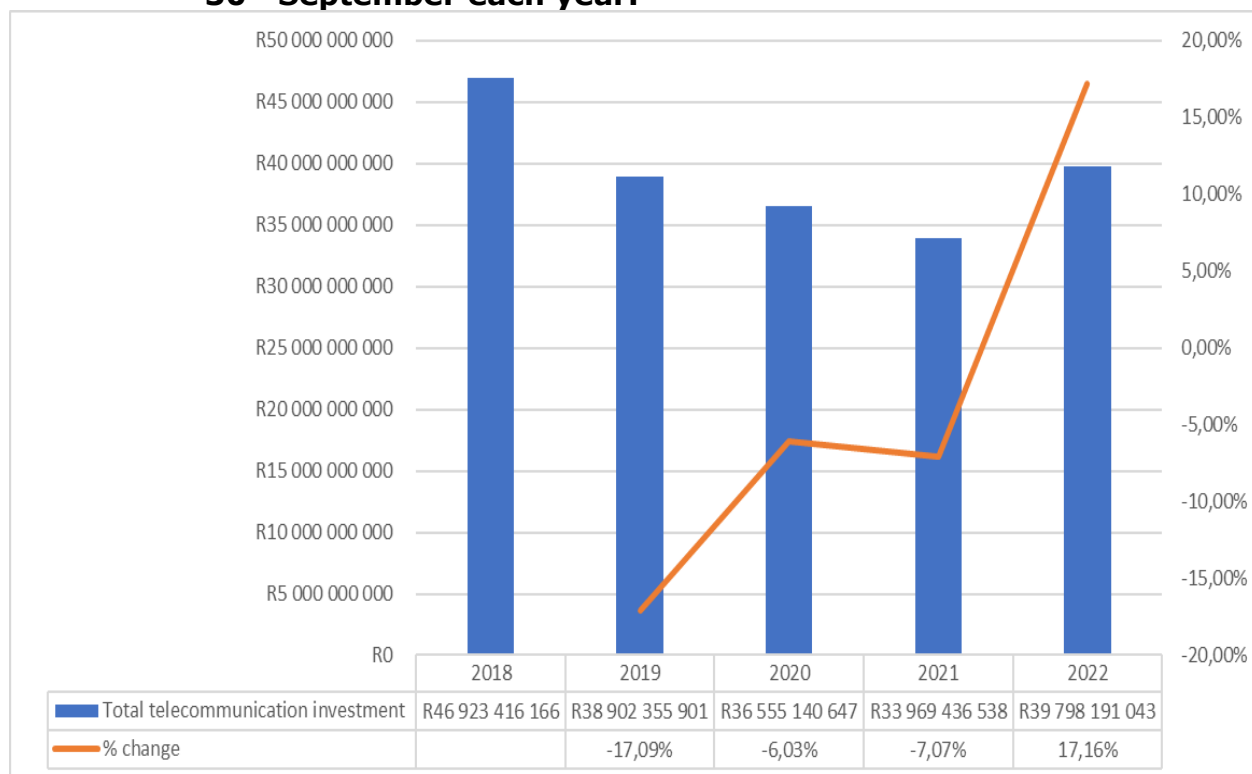
Source: ICASA database 2023

4.2 Total Telecommunications Investment

Total telecommunications investment increased by 17.16% from R33.9 billion in 2021 to R39.7 billion in 2022.

Over a 5-year period, the total telecommunications investment decreased by 4.03%.

Graph 12: Total telecommunication investment, for the 12 months ending 30th September each year.



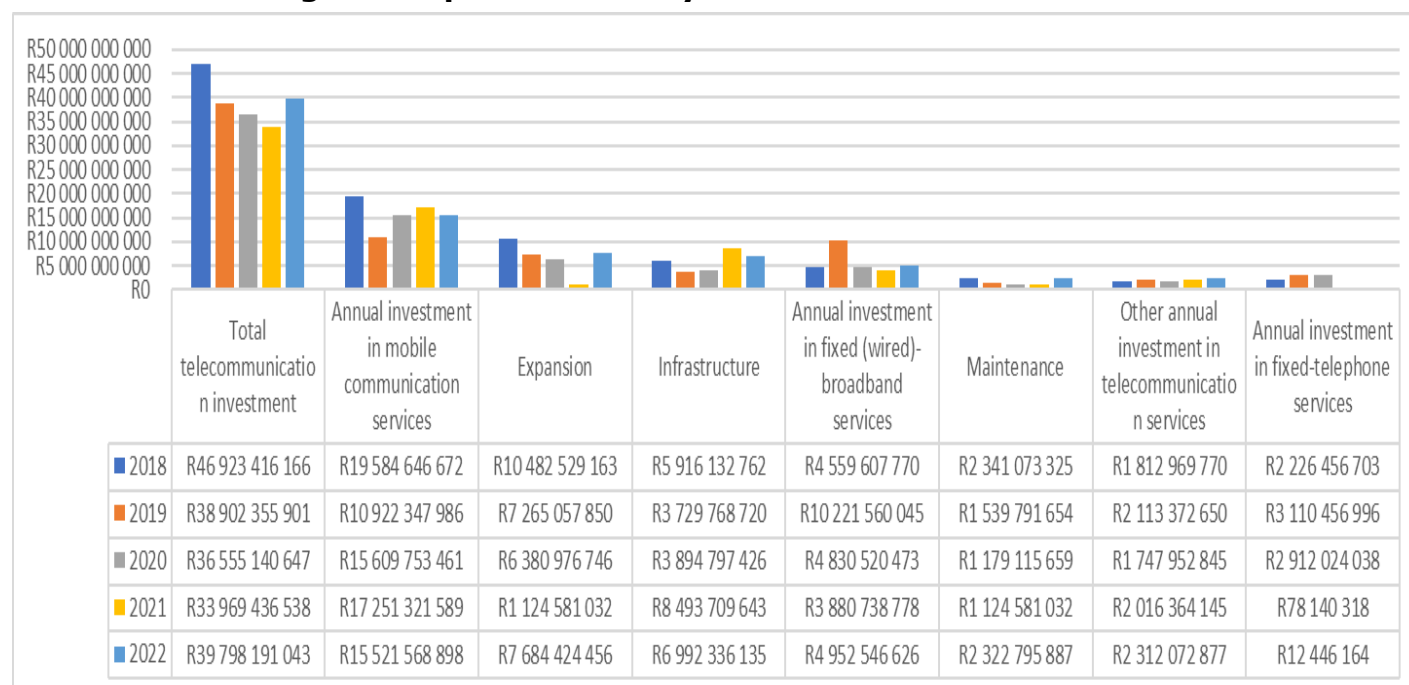
Source: ICASA Electronic Communications, Broadcasting and Postal Questionnaires 2018 - 2022

4.2.1 Telecommunications Investment Breakdown⁴

The breakdown of telecommunications investments in 2022 is displayed in graph 13.

Over a 5-year period, annual investment in fixed (wired)-broadband services and Infrastructure increased by 2.09% and 4.27%, respectively.

Graph 13: Telecommunication investment breakdown, for the 12 months ending 30th September each year.



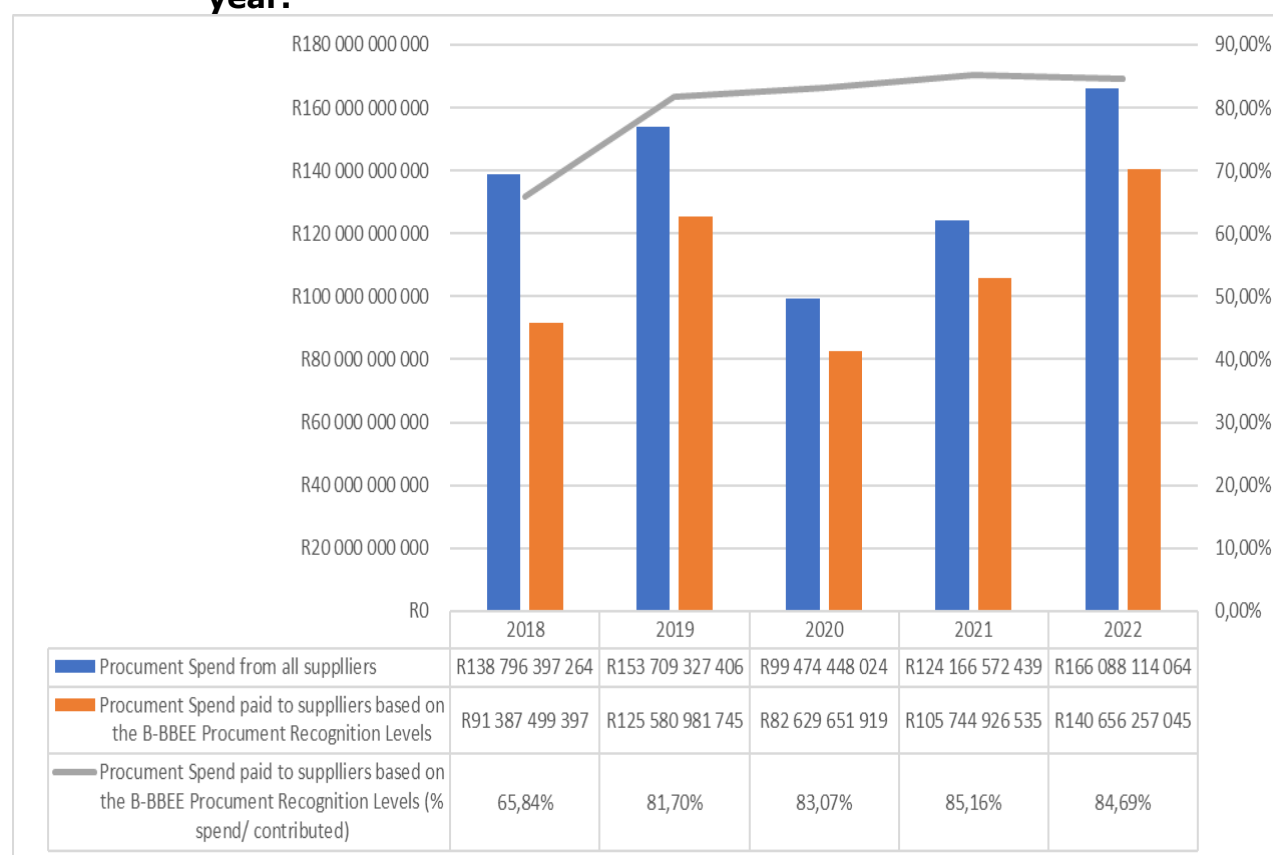
Source: ICASA Electronic Communications Questionnaire 2015 - 2028

⁴ Total annual investment in telecommunication services, also referred to as annual capital expenditure, refers to the investment during the financial year in telecommunication services (including fixed, mobile and Internet services) for acquiring or upgrading property and networks. Property includes tangible assets such as plant, intellectual and non-tangible assets such as computer software. The indicator is a measure of investment in telecommunication infrastructure in the country and includes expenditure on initial installations and additions to existing installations where the usage is expected to be over an extended period of time. It excludes expenditure on research and development (R&D), annual fees for operating licences and the use of radio spectrum, and investment in telecommunication software or equipment for internal use.

4.3 Telecommunications Procurement Spend Paid to All Suppliers Based on B-BBEE Ranking

The proportion of telecommunications procurement spend paid, based on the B-BBEE ranking levels, was 84.69% (R140.6 billion) in 2022.

Graph 14: Telecommunication procurement paid to suppliers based on the B-BBEE, for the 12-month period ending 30th September each year.



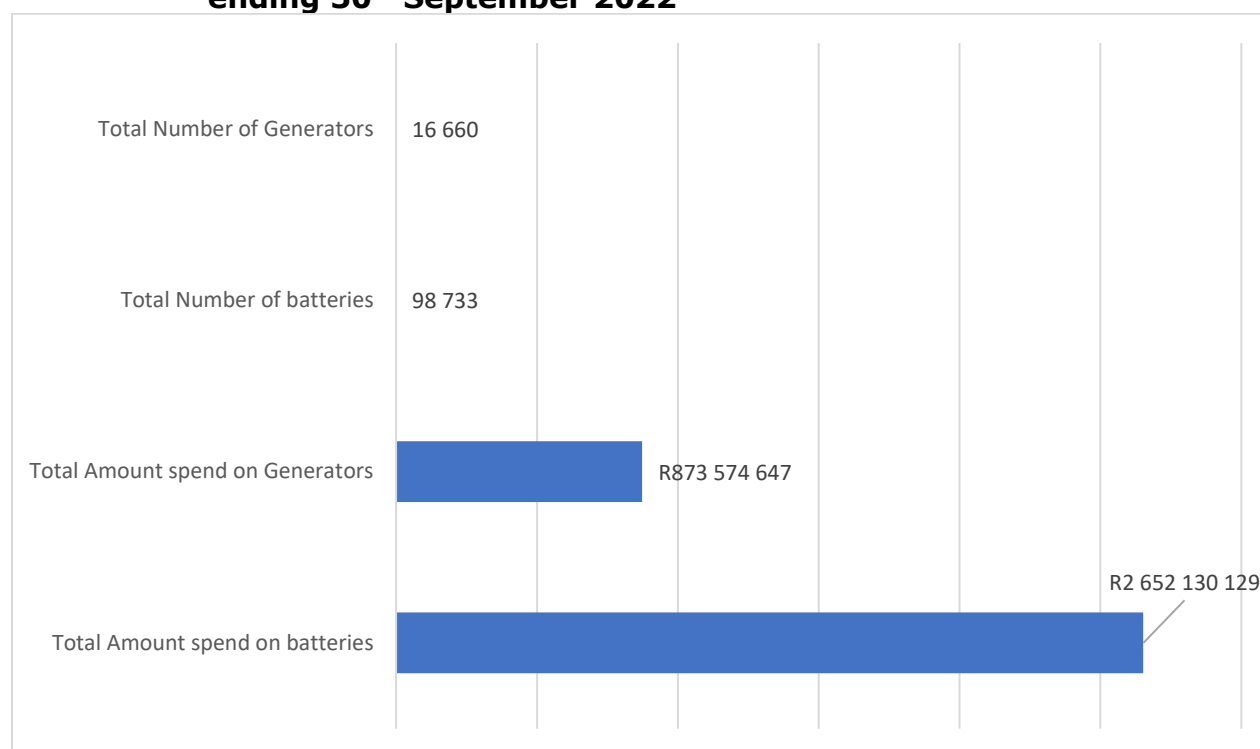
Source: ICASA Electronic Communications Questionnaire 2018 - 2022

4.4 Batteries and Generators used during Electricity Loadshedding period and Revenue spend by licensees.

The total amount spent on batteries by licensees during loadshedding was R2.6 billion in 2022. R873 million was spent on generators during this period.

About 16,660 generators and 98,733 batteries were purchased in 2022 by licensees.

Graph 15: Batteries and Generators used during Loadshedding, and Revenue spend during this period, for the 12-month period ending 30th September 2022

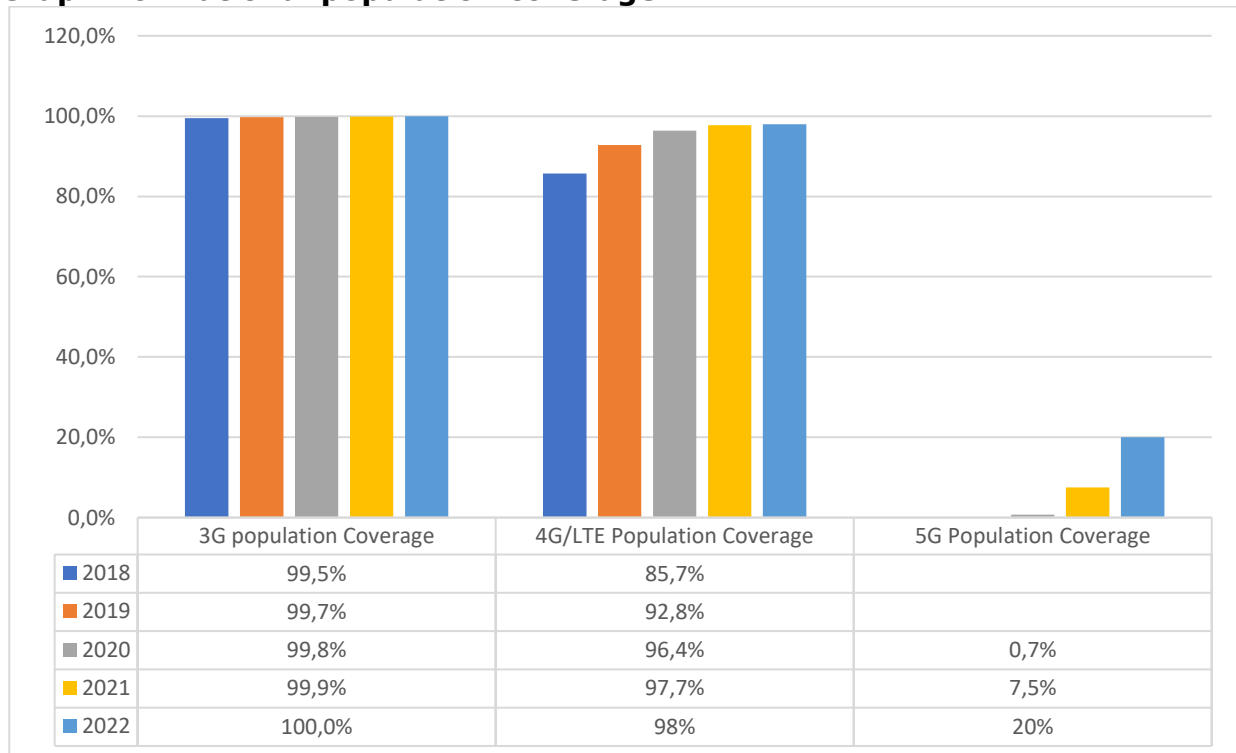


Source: ICASA Electronic Communications Questionnaire 2018 - 2022

4.5 National Population Coverage

National population coverage for 3G stood at 100% in 2022. National population coverage for 4G/LTE stood at 98%. National 5G population coverage stood at 20% for the same period.

Graph 16: National population coverage



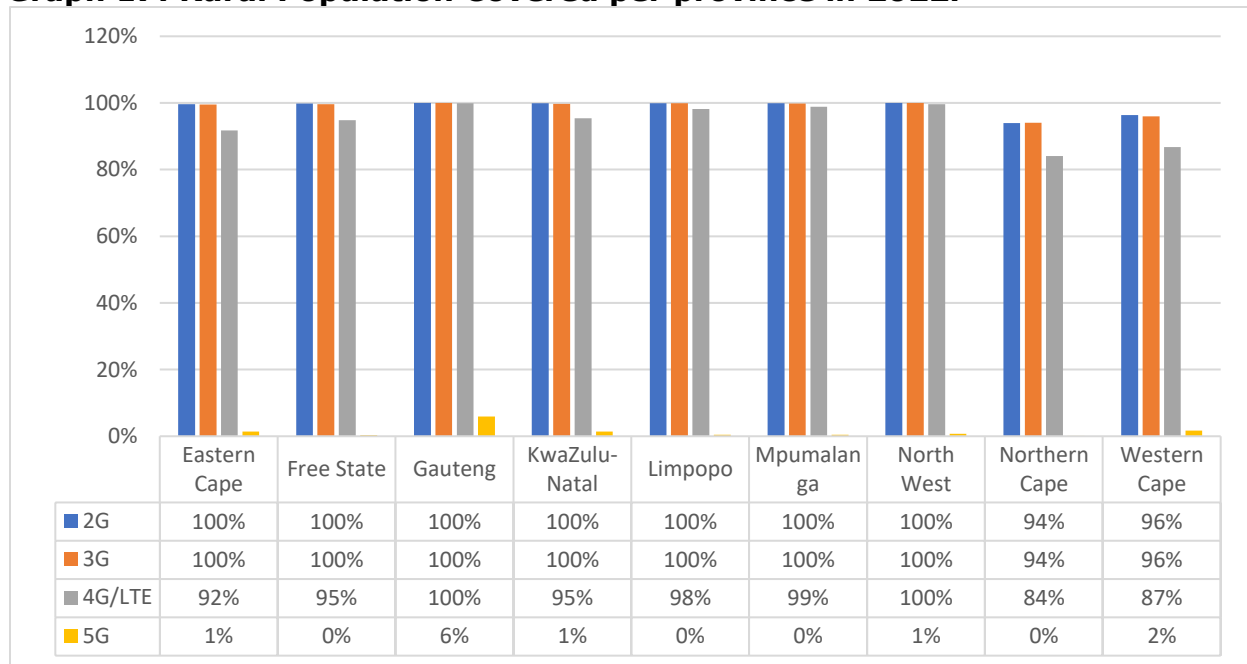
Source: ICASA Electronic Communications Questionnaire 2018 - 2022

4.5.1 Rural Population Coverage

Regarding 2G, 3G and 4G/LTE, all provinces stood above 84% coverage in 2022.

5G coverage in Free State, Limpopo, Mpumalanga, and Northern Cape provinces stood at 0%.

Graph 17: Rural Population Covered per province in 2022.



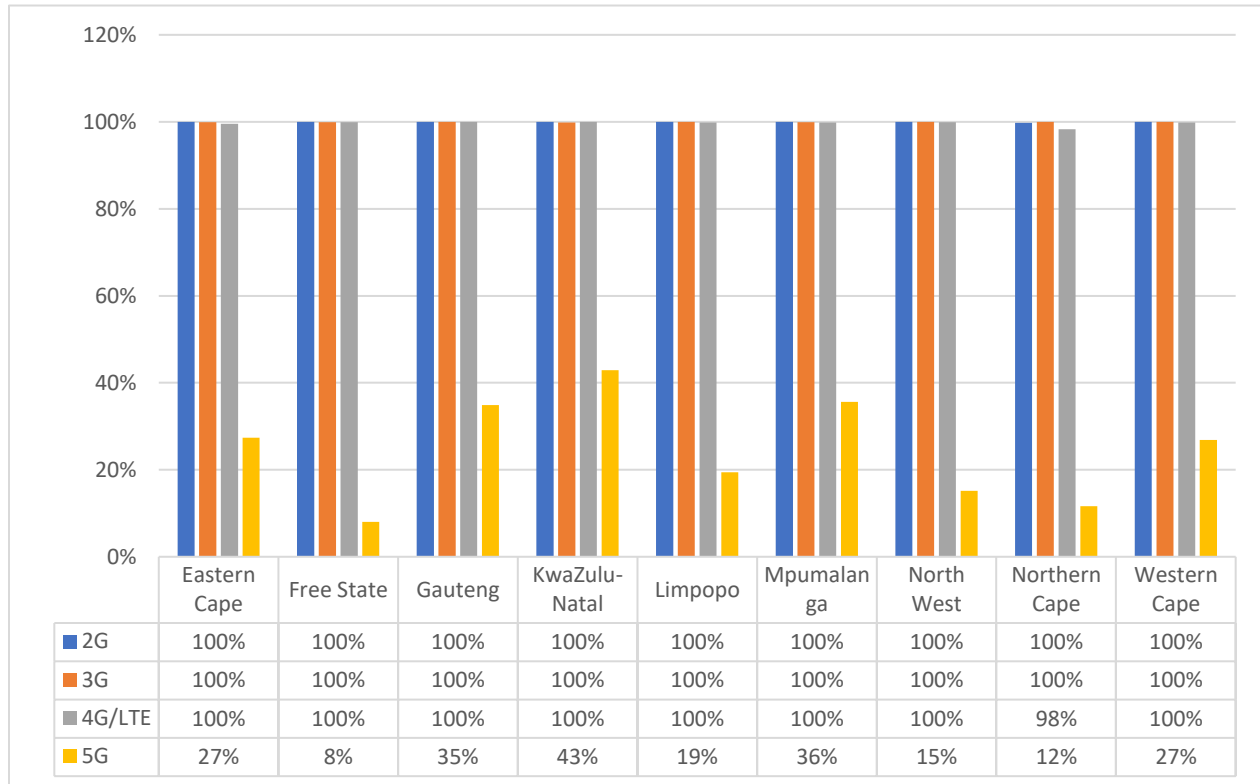
Source: ICASA Electronic Communications Questionnaire 2022

4.5.2 Urban Population Coverage

All provinces stood at 98%-100% with respect to 2G, 3G, and LTE coverage in 2022.

Kwazulu-Natal was the highest province with 5G coverage at 43%.

Graph 18: Urban Population Covered per province in 2022.



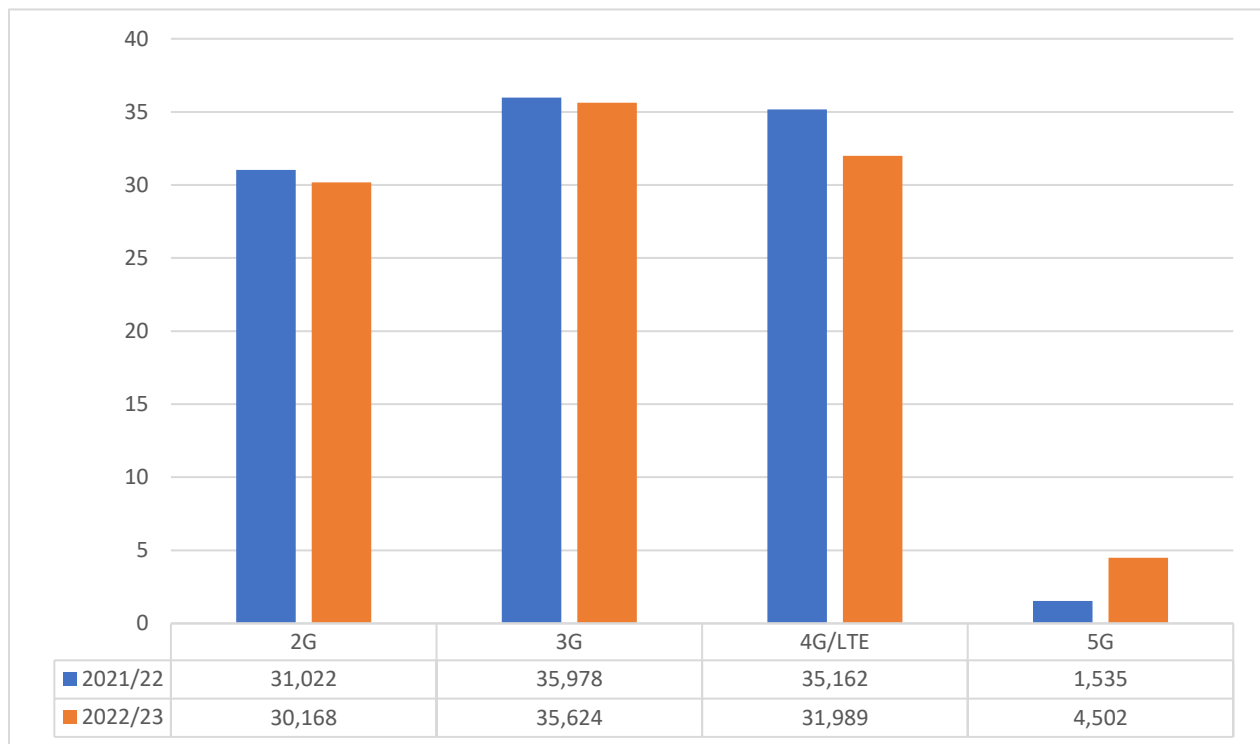
Source: ICASA Electronic Communications Questionnaire 2022

4.5.3 Base Stations

The graph below shows the number of base stations during the financial years 2021/22 and 2022/23.

There is a slight decrease in the total number of 2G, 3G, and 4G/LTE base stations while there is a significant increase in the number of 5G base stations.

Graph 19: Base stations 2021/22 and 2022/23



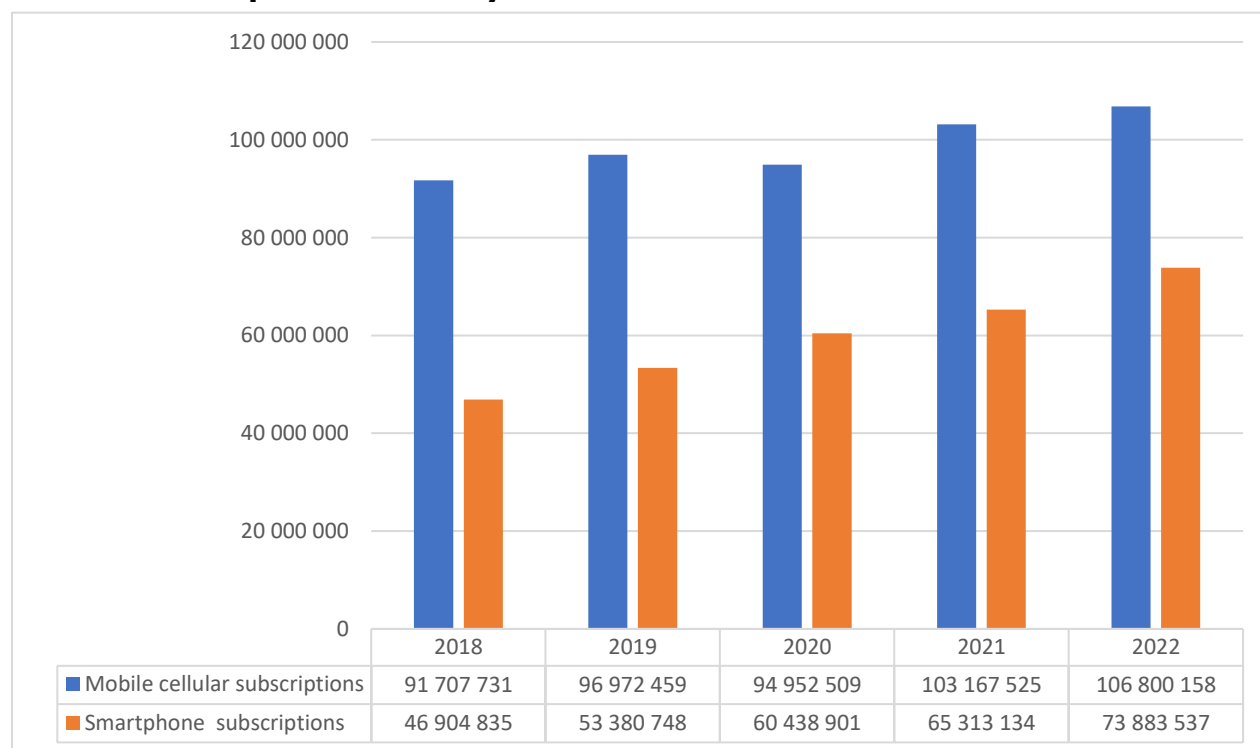
Source: ICASA database 2023

4.6 Mobile Cellular and Smartphone Subscriptions

Mobile cellular subscriptions increased by 3.52% from 103 million in 2021 to 106 million in 2022. Smartphone⁵ subscriptions increased by 13.12% from 65 million in 2021 to 73 million in 2022. Figures indicated in the graph below are not for unique subscribers.

In 2022, about 70% of mobile cellular were smartphones subscriptions.

Graph 20: Mobile Cellular and Smartphone Subscriptions, as of 30th September each year



Source: ICASA Electronic Communications Questionnaire. 2018 – 2022

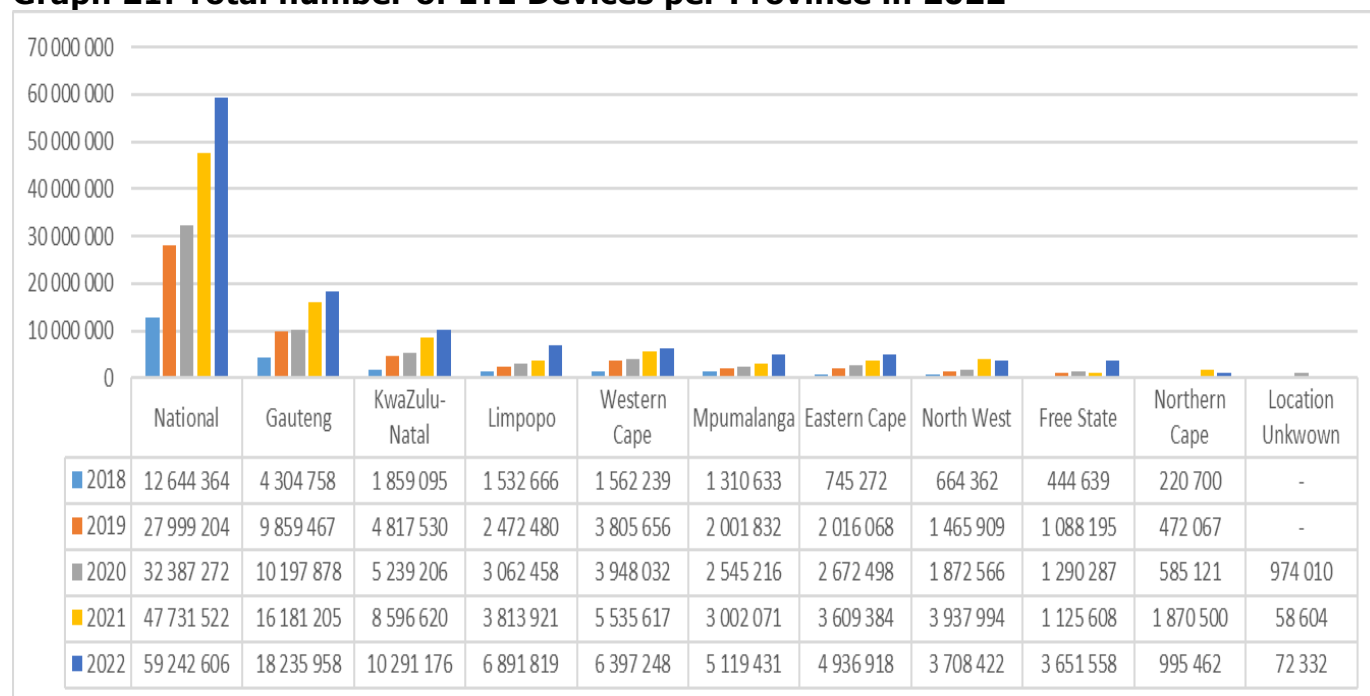
¹ A smartphone is a mobile phone with advanced features: it has Wi-Fi connectivity, web browsing capabilities, a high-resolution touchscreen display and the ability to use apps. The majority use one of the following mobile operating systems: Android, Symbian, iOS, and Windows Mobile

4.6.1 Total Number of LTE Devices

The total number of LTE devices increased from 47 million in 2021 to 59 million in 2022⁶.

The total number of 72,332 devices were recorded with unknown location as shown in graph 21.

Graph 21: Total number of LTE Devices per Province in 2022



Source: ICASA Electronic Communications Questionnaire 2018 - 2022

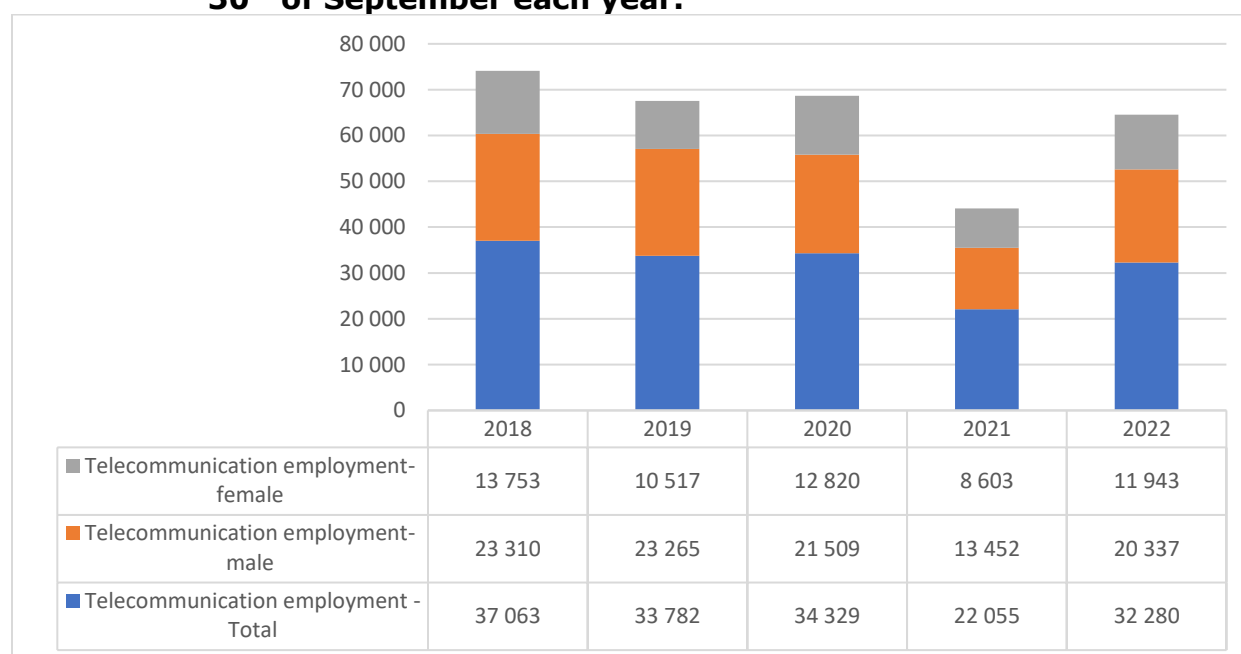
⁶ List of devices with LTE support 'called 4G'. LTE, an acronym for Long Term Evolution, marketed as 4G LTE, is a standard for wireless communication of high-speed data for mobile phones and data terminals.

4.7 Persons Employed in the Telecommunications Sector

Total employment in the telecommunications sector significantly increased by 46.36%, from 22,055 in 2021 to 32,280 in 2022 (Some of the operators who submitted employment in 2022 did not submit in 2021). The number of female employees as a percentage of all employment also increased by 38.82% in 2022 and male employment increased from 13,452 in 2021 to 20,337 in 2022.

Over a 5-year period, telecommunications sector employment decreased by 3.40% while female employment decreased by 3.47%.

Graph 22: Persons employed in the telecommunications sector, as of the 30th of September each year.

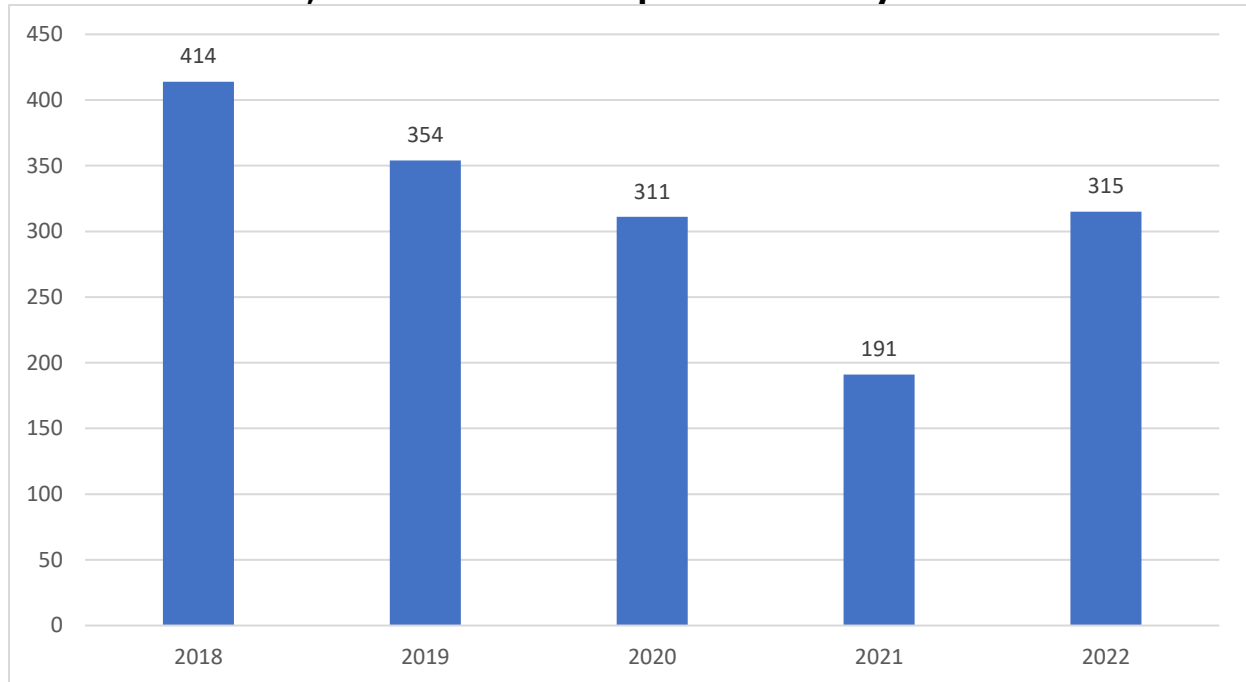


Source: ICASA Electronic Communications Questionnaire 2018 – 2022

4.7.1 Persons with disabilities employed in the telecommunications Sector.

The number of persons with disabilities employed in the telecommunication sector increased from 191 in 2021 to 315 in 2022.

Graph 23: Persons with disabilities employed in the telecommunications sector, as of the 30th of September each year.

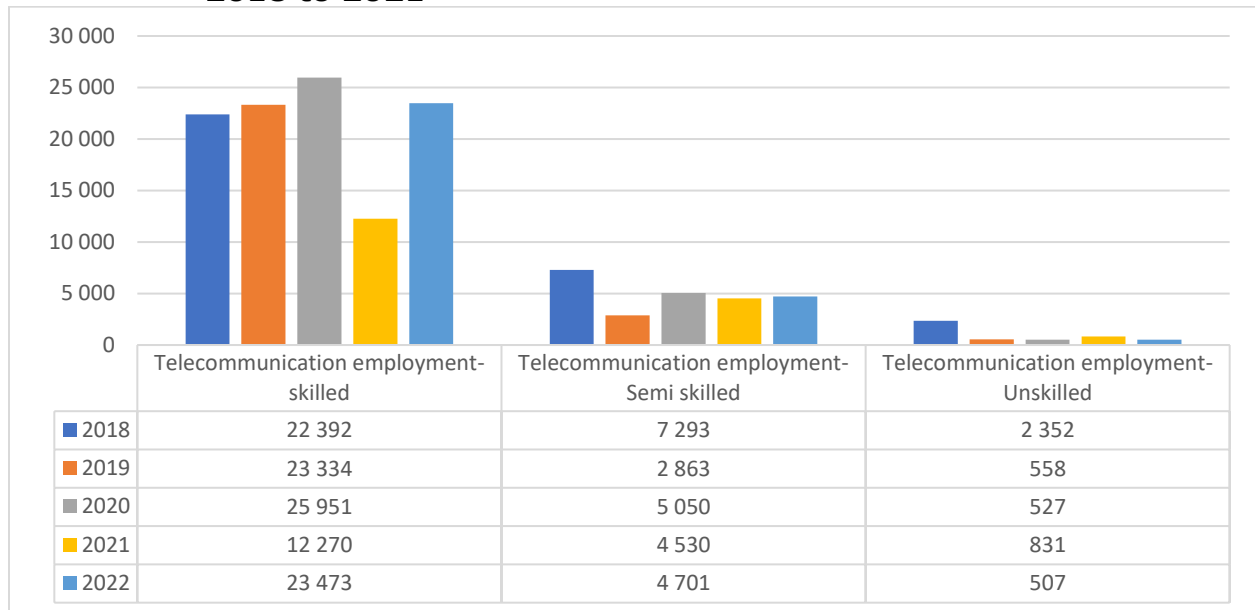


Source: ICASA Electronic Communications Questionnaire 2018 – 2022

4.7.2 Breakdown of employees in the telecommunications sector

In 2022, there were about 23,473 skilled persons, 4,701 semi-skilled persons, and 507 unskilled persons.

Graph 24: Breakdown of employees in the telecommunications sector from 2018 to 2021



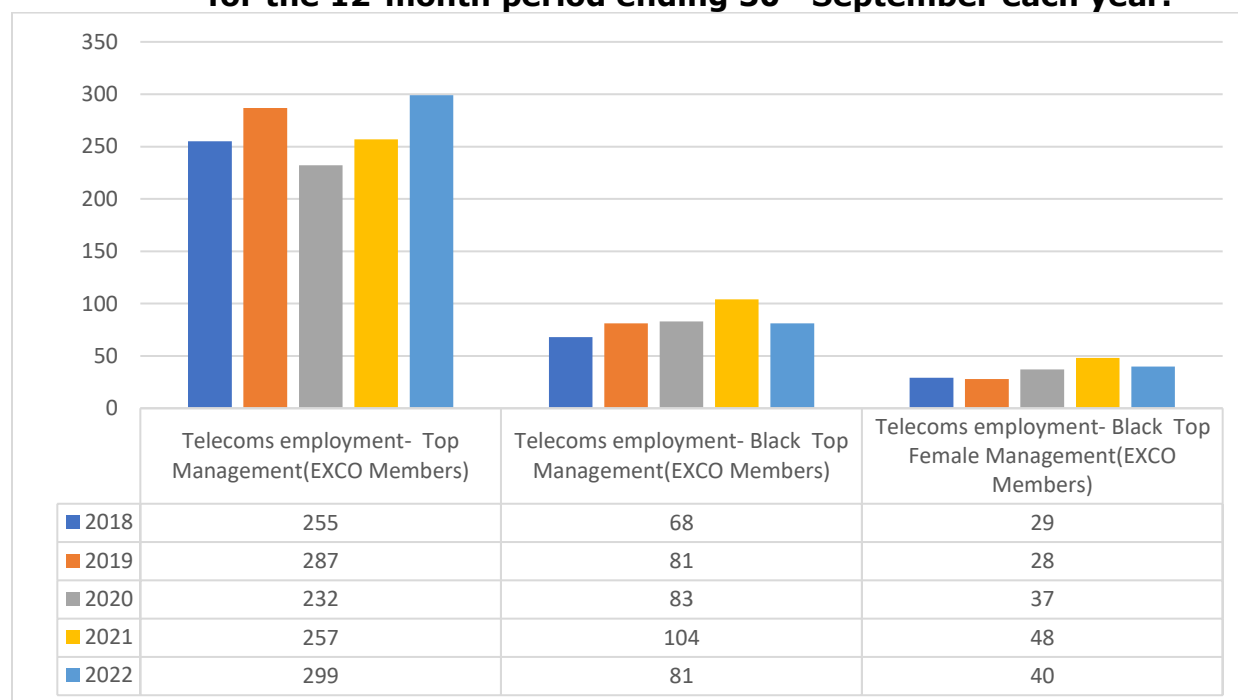
Source: ICASA Electronic Communications Questionnaire 2018 - 2022

4.7.3 Black Economic Empowerment Employment Measures

In 2022, Top Management (EXCO members) employment increased by 16.34% from 257 in 2021 to 299 in 2022. Top Black Management employment decreased by 22.12% from 104 in 2021 to 81 in 2022. Top Female Management employment also decreased by 16.67% from 48 in 2021 to 40 in 2022.

Over a period of 5 years, Top Management increased by 4.06%.

Graph 25: Telecommunication Black Economic Empowerment Measures, for the 12-month period ending 30th September each year.



Source: ICASA Electronic Communications Questionnaire 2018 - 2022

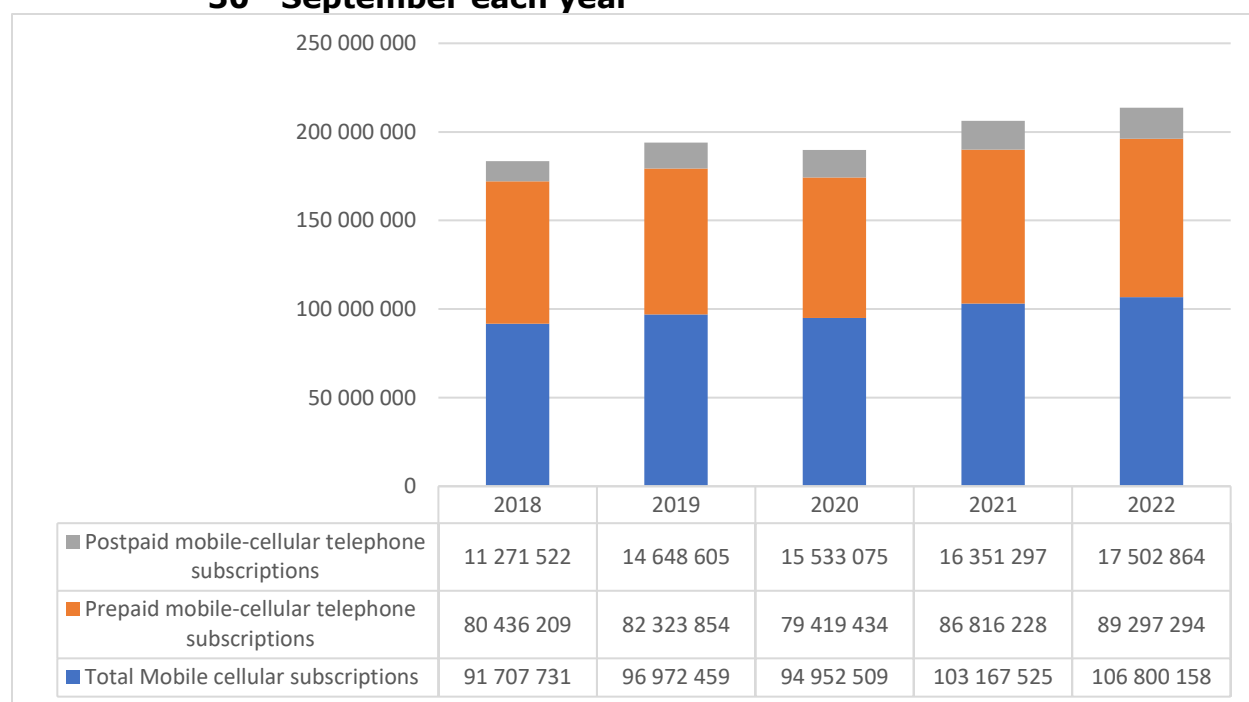
4.8 Telecommunications Subscriptions

4.8.1 Mobile Cellular (Prepaid and Post-paid mobile Cellular Phone Voice) Subscriptions

The total Mobile cellular subscriptions increased by 3,52% from 103 million in 2021 to 106 million in 2022. Prepaid mobile-cellular telephone subscriptions increased by 2.86% in 2022. Figures indicated in the graph below are not for unique subscribers.

Over a period of 5 years, the total mobile cellular subscriptions (prepaid and post-paid combined) increased by 3,88%.

Graph 26: Prepaid and post-paid mobile cellular voice subscriptions, as of 30th September each year



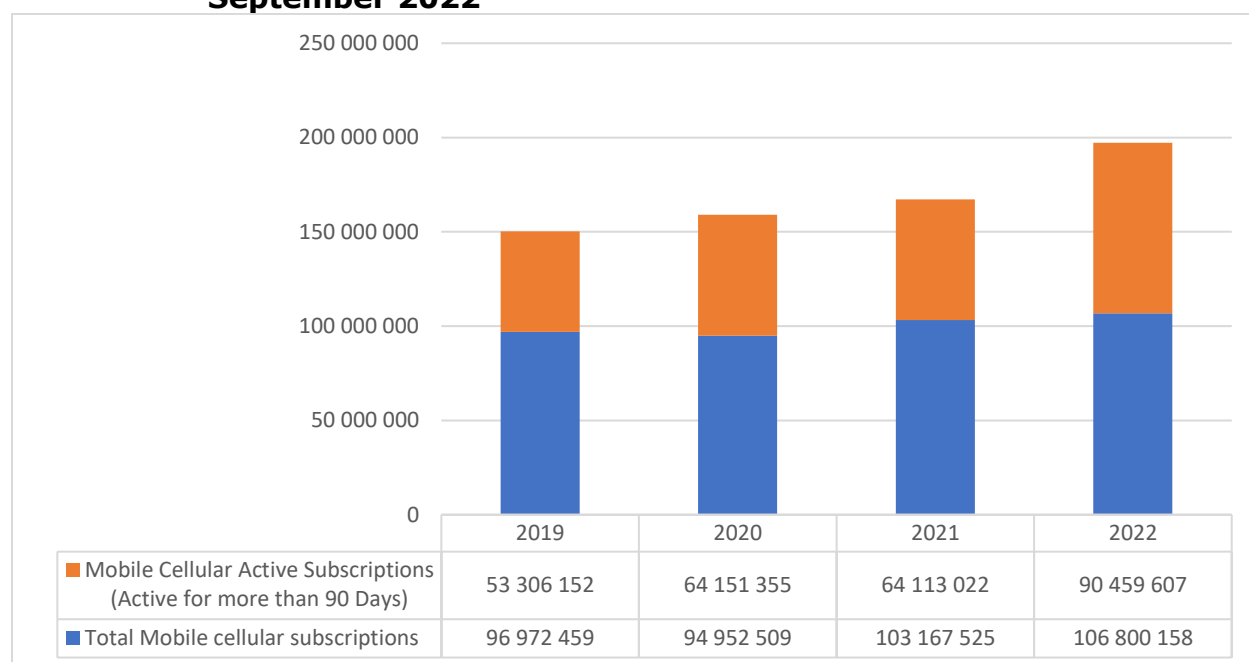
Source: ICASA Electronic Communications Questionnaire 2018 - 2022

Note: The definition of prepaid subscribers is adopted from the ITU definition of 3-month active subscribers. Some South African operators do not have this metric available but rather count SIMs that have not been disconnected within a 90-day window implying that the number may be overstated according to the strict definition. Top up bundles and machine-to-machine subscriptions were included in post-paid mobile cellular subscriptions.

4.8.2 Mobile Cellular Active Subscriptions (Active for more than 90 Days) and Total mobile cellular subscriptions

The total mobile cellular subscriptions increased over the years, from 96 million in 2019 to 106 million in 2022. Mobile Cellular active subscriptions increased by 41.09% from 64 million in 2021 to 90 million in 2022 (one of the big operator did not submit in 2021). About 16 million SIMs are inactive.

Graph 27: Mobile Cellular Active Subscriptions (Active for more than 90 Days) and Total mobile cellular subscriptions, as of 30th September 2022



Source: ICASA Electronic Communications Questionnaire 2018 – 2022

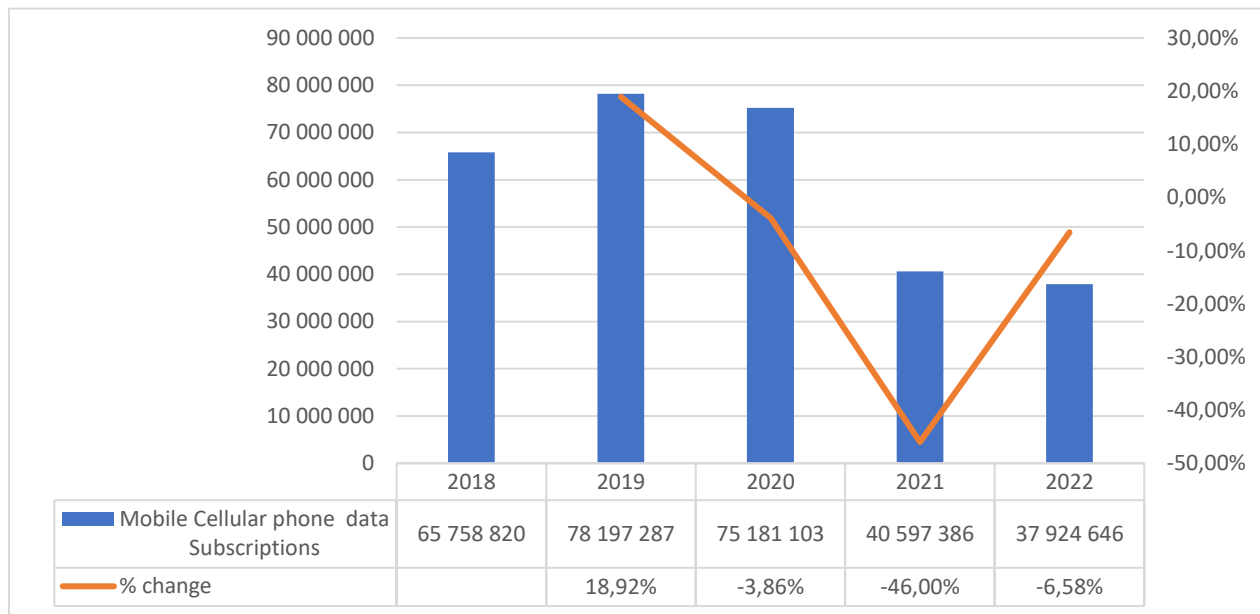
Note: The definition of prepaid subscribers is adopted from the ITU definition of 3-month active subscribers. Some South African operators do not have this metric available but rather count SIMs that have not been disconnected within a 90-day window implying that the number may be overstated according to the strict definition. Top up bundles and machine-to-machine subscriptions were included in post-paid mobile cellular subscriptions.

4.8.3 Mobile Cellular Phone Data users

The number of mobile cellular data users significantly decreased by 6.58% from 40 million in 2021 to 37 million in 2022.

Over a period of 5 years, the number of mobile data users decreased by 12.86%.

Graph 28: Mobile cellular phone data subscriptions, as of 30th September each year



Source: ICASA Electronic Communications Questionnaire 2018 – 2022

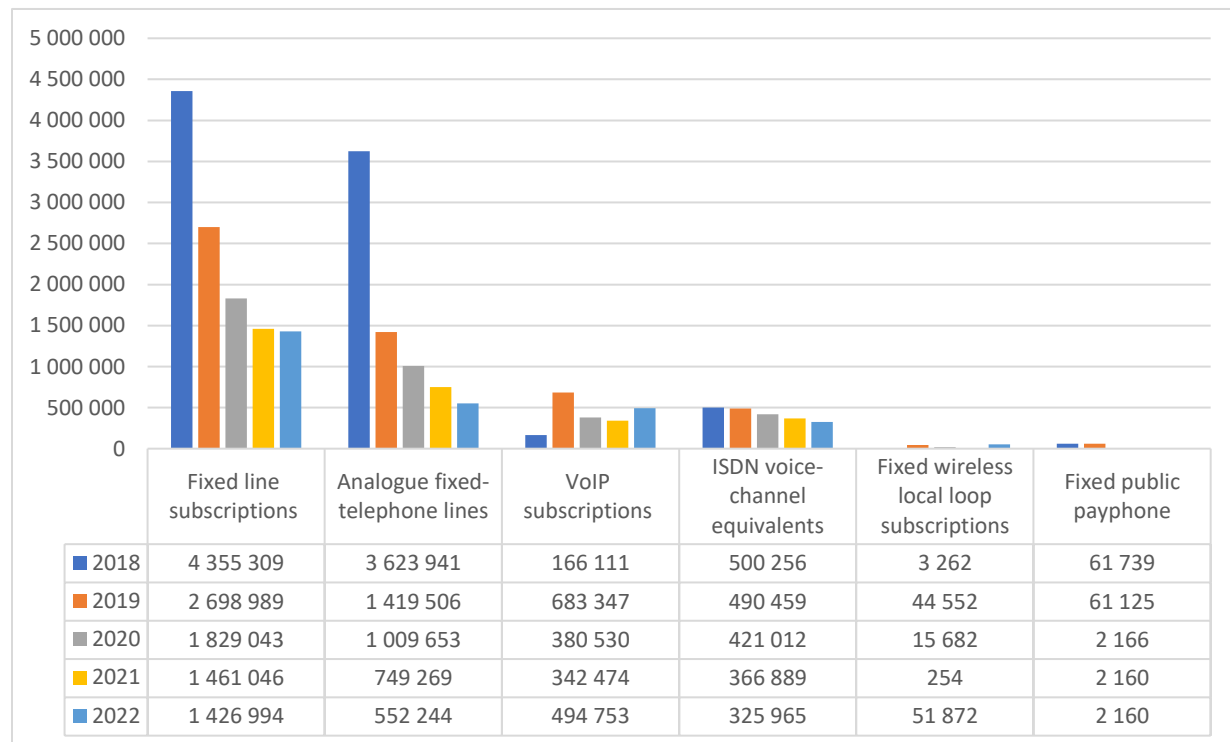
Note: All LTE connections are included in 'mobile'. There is room for the definition of 'mobile broadband subscriptions' to be improved in subsequent reports, noting that it was not possible to accurately distinguish between handset data usage and mobile data usage on other devices, or alternatively to distinguish SIMs used for both voice and data from SIMs dedicated to data usage. It was also necessary to count total internet subscriptions rather than 'broadband' subscriptions, as it was not possible to accurately break out 'narrowband' internet, albeit this is now a small minority of total internet subscriptions. 'Wireless broadband' number may be incomplete in respect of some players, especially those operating in unlicensed spectrum bands.

4.8.4 Fixed Line Voice Subscriptions

The number of fixed line voice subscriptions has been declining since 2019, in 2022, the number of fixed line voice subscriptions decreased by 2.33%.

Over a 5-year period, the number of fixed line subscriptions decreased by 24.34%.

Graph 29: Fixed line subscriptions, as of 30th September each year



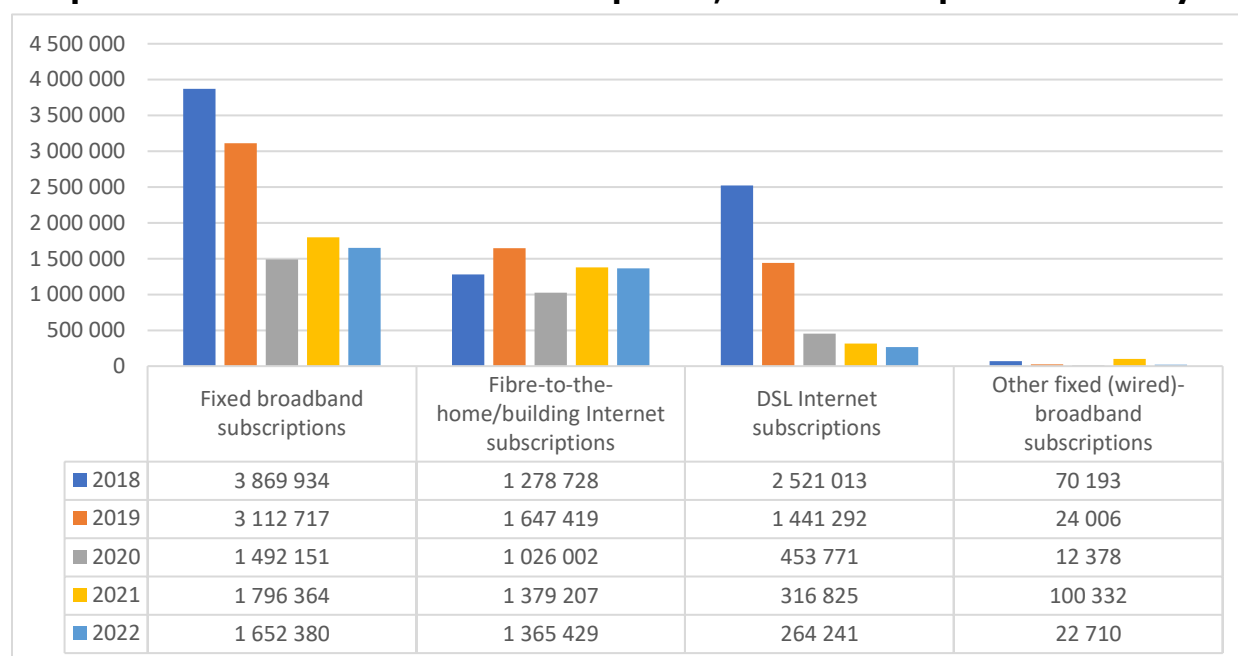
Source: ICASA Electronic Communications Questionnaire, December 2018 – 2022
One of the operators did not submit in 2021.

4.8.5 Fixed Line Broadband Subscriptions

In 2022, the total number of fixed broadband subscriptions decreased by 8.02%. Fibre-to-the- home/building internet subscriptions slightly decreased by 1%. DSL internet subscription also decreased by 16.60%.

For a period of 5-years, fixed broadband subscriptions decreased by 19,16%.

Graph 30: Fixed broadband subscriptions, as of 30th September each year



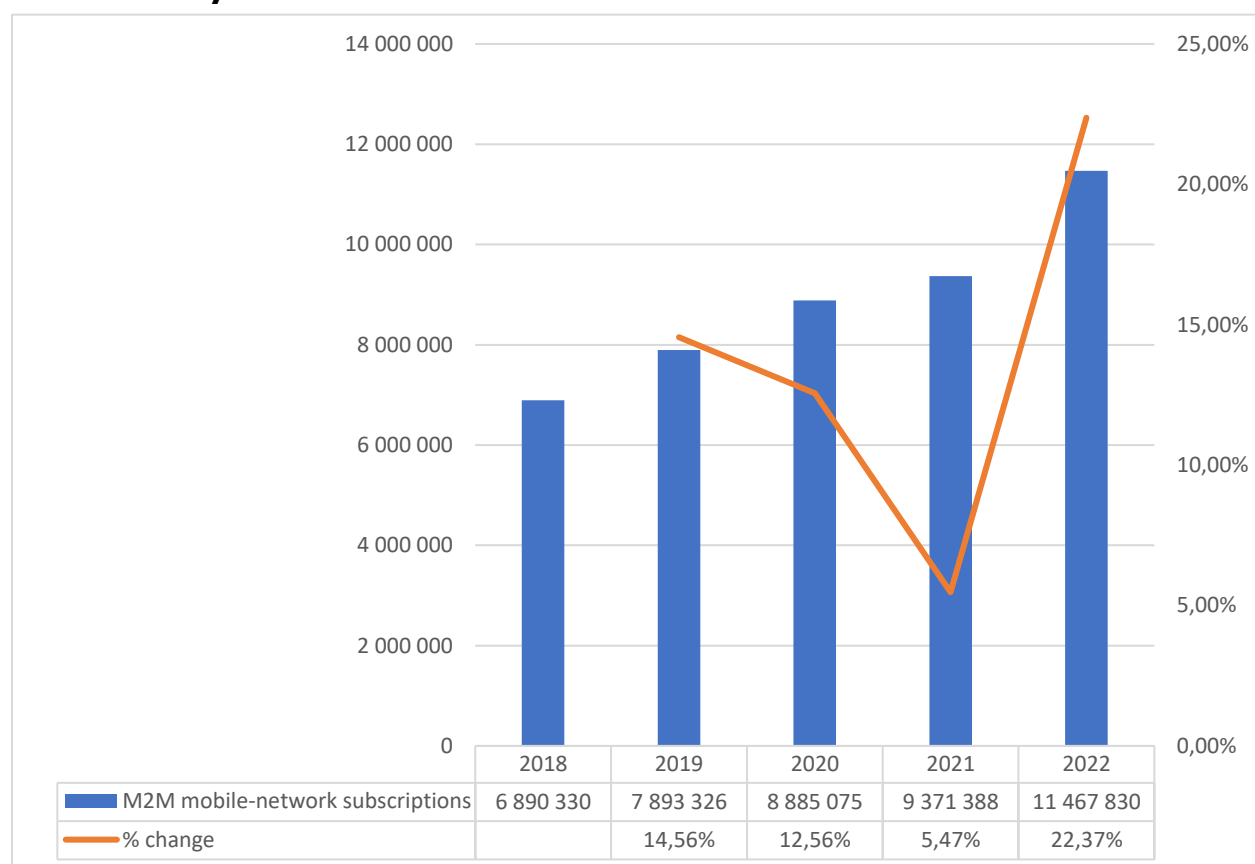
Source: ICASA Electronic Communications Questionnaire 2018 - 2022

4.8.6 Machine-to-Machine (M2M) Mobile Subscriptions

M2M mobile-network subscriptions increased by 22.37% from 9.3 million in 2021 to 11.4 million in 2022.

Over a 5-year period, M2M mobile-network subscriptions increased by 13.58%.

Graph 31: M2M mobile-network subscriptions, as of 30th September each year



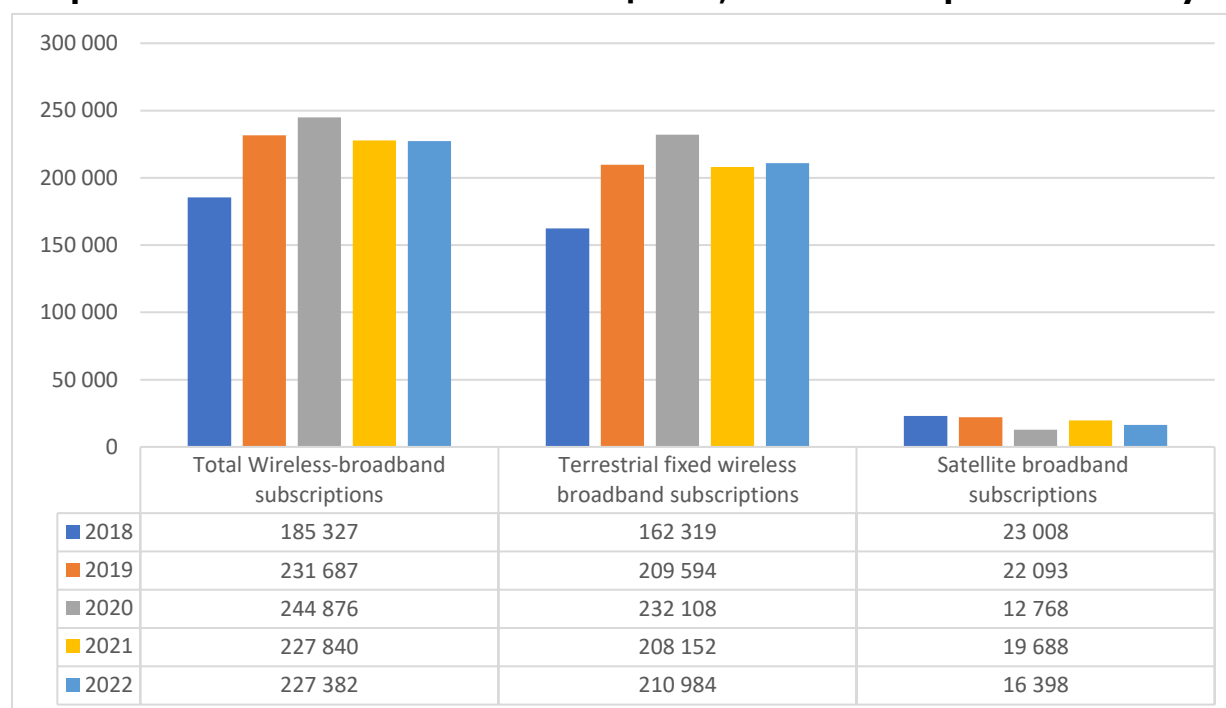
Source: ICASA Electronic Communications Questionnaire 2018 - 2022

4.8.7 Wireless-broadband subscriptions

In 2022, the total wireless-broadband subscriptions slightly decreased by 0.20%. Satellite subscriptions significantly decreased by 16.71%. Terrestrial fixed broadband subscriptions increased by 1.36%.

Over a period of 5 years, the total wireless-broadband subscriptions increased by 5.25%.

Graph 32: Wireless-broadband subscriptions, as of 30th September each year



Source: ICASA Electronic Communications Questionnaire 2018 - 2022

4.9 Network Traffic

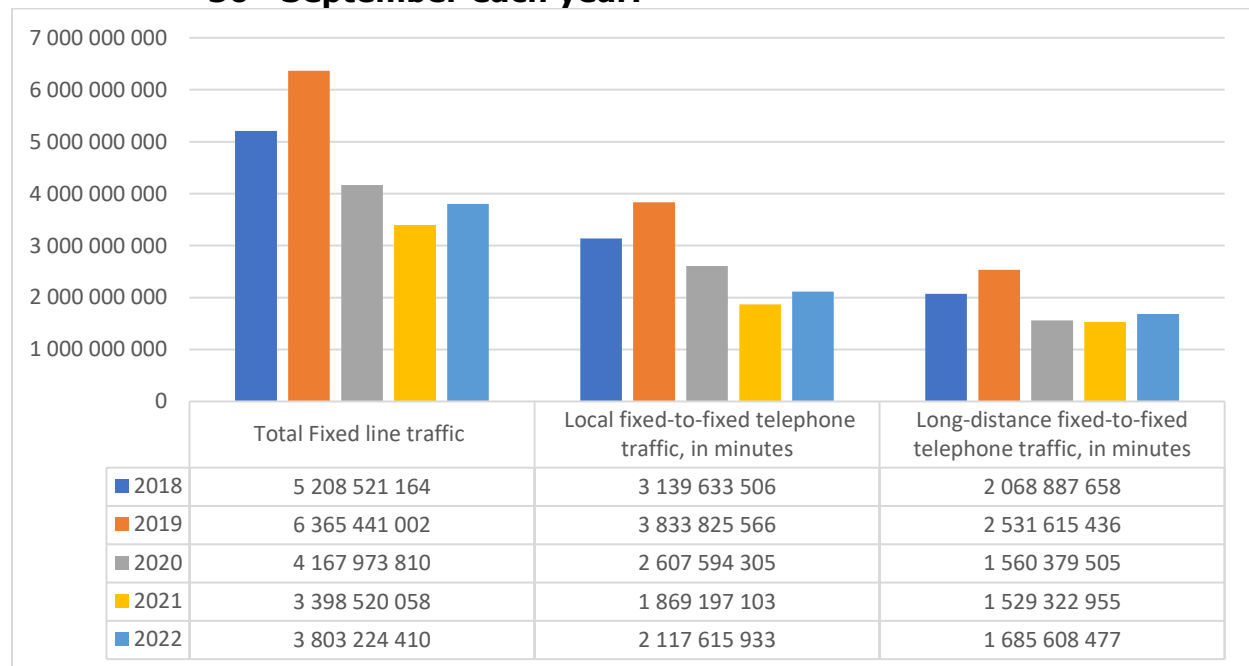
This section highlights the usage of operator networks in terms of traffic volumes measured in minutes.

4.9.1 Fixed Line Traffic

In 2022, the total fixed line traffic increased by 11.91%. Local fixed-to-fixed telephone traffic increased by 13.29% while Long-distance fixed-to-fixed telephone traffic increased by 10.22%.

Over a period of 5 years, total fixed line traffic decreased by 7.56%.

Graph 33: Fixed line traffic, in minutes, for the 12-month period ending 30th September each year.



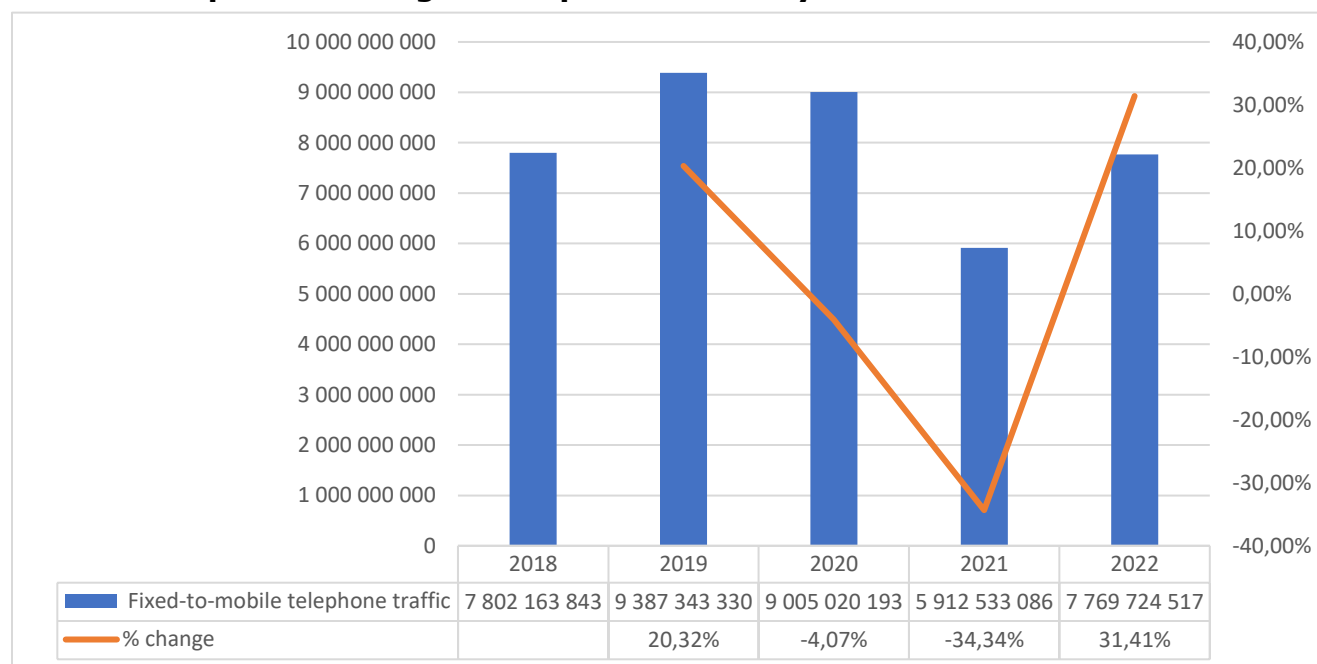
Source: ICASA Electronic Communications Questionnaire 2018 - 2022

4.9.2 Fixed-to-Mobile Telephone Traffic

Fixed-to-mobile telephone call traffic increased by 31.41 % from 5.9 billion in 2021 to 7.7 billion in 2022.

Over a period of 5 years, fixed-to-mobile telephone call traffic decreased by 0.10%.

Graph 34: Fixed-to-mobile telephone traffic minutes, for the 12-month period ending 30th September each year.



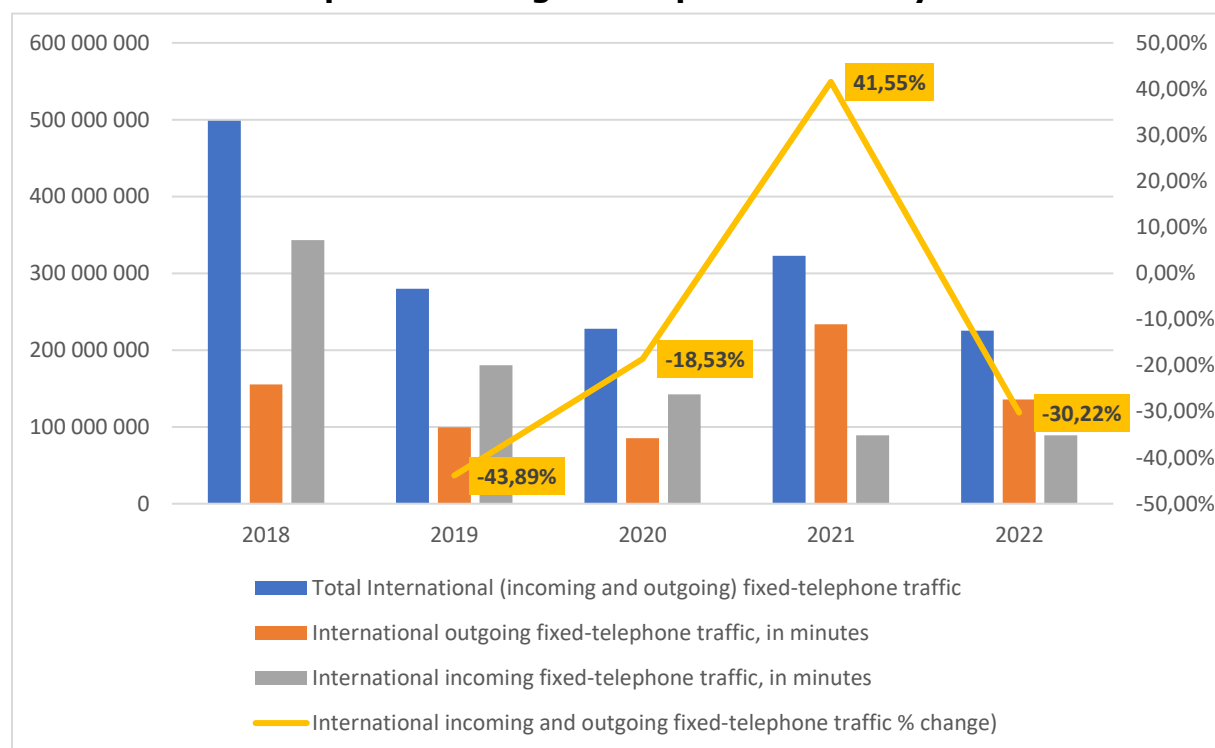
Source: ICASA Electronic Communications Questionnaire 2018 - 2022

4.9.3 International (Incoming and Outgoing) Fixed Telephone Traffic

In 2022, the total international (incoming and outgoing) fixed-telephone traffic decreased by 30.22%. International outgoing fixed-telephone traffic decreased by 41.79% while international incoming fixed telephone slightly increased by 0.07%.

For a period of 5 years, the international (incoming and outgoing) fixed-telephone traffic has decreased by 1.37%.

Graph 35: International fixed line traffic in minutes (million) for the 12-month period ending 30th September each year.



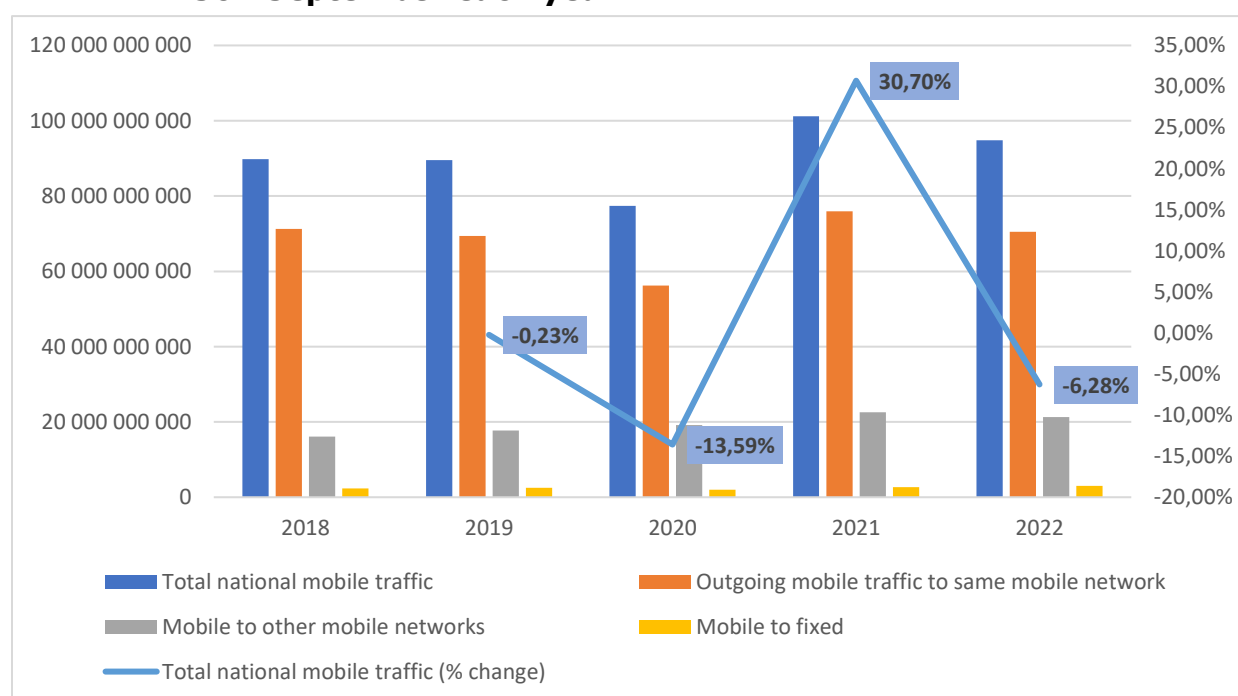
Source: ICASA Electronic Communications Questionnaire 2018 - 2022

4.9.4 Total national mobile traffic (Minutes)

The total national mobile traffic decreased by 6.28% in 2022. Mobile-to-other-mobile networks traffic and outgoing mobile traffic to the same mobile network decreased by 5.67% and 7.13%, respectively. Mobile-to-fixed traffic increased by 12.79%.

Over a period of 5 years, the total national mobile traffic increased by 1.37%.

Graph 36: Mobile voice traffic in minutes for the 12-month period ending 30th September each year.



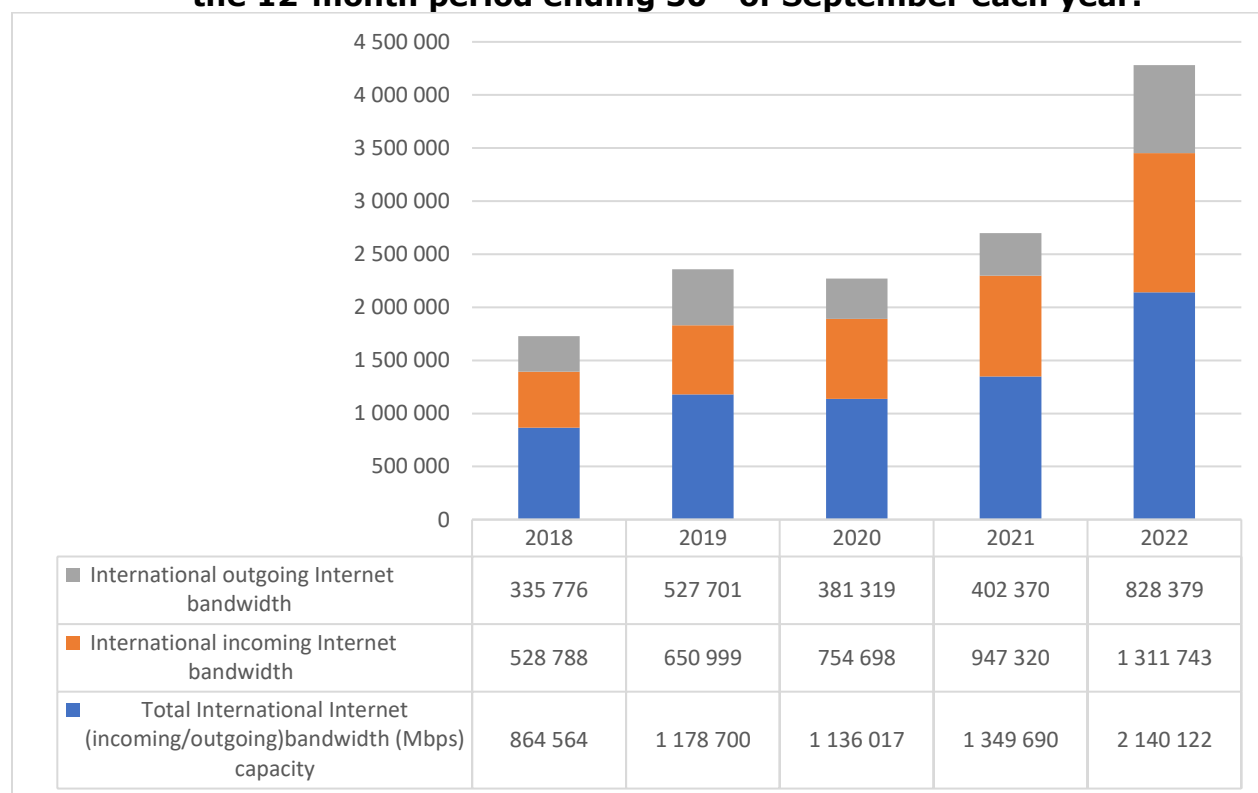
Source: ICASA Electronic Communications Questionnaire 2018 - 2022

4.10 International Internet Bandwidth Capacity in Megabits per second (Mbps)

The total international internet bandwidth (Mbps) capacity increased from 1.3 million in 2021 to 2.1 million in 2022.

Over a period of 5-year, the total international internet bandwidth capacity increased by 25.43%%.

Graph 37: International internet bandwidth Megabits per second (Mbps) for the 12-month period ending 30th of September each year.



Source: ICASA Electronic Communications Questionnaire 2018 - 2022

4.11 International Comparison of South Africa's Internet Speeds

The internet speed for fixed broadband and mobile (download and upload speed) for South Africa was compared to other countries to have a better understanding of its growth and how it is performing internationally.

4.11.1 International Speedtest® benchmarks

According to the Speedtest® Index, the fixed broadband speed ranking for South Africa went up from 100th place in 2021 to 95th in 2022 (out of 180 countries). Fixed download speed was at 43.23 Mbps and upload speed was at 33.06 Mbps. Mobile download speed was at 34.71 Mbps and upload speed was at 6.70 Mbps.

Table 5: Speedtest® benchmark in 2022

Fixed Broadband						
	Singapore	Chile	China	United Arab Emirates	Hong Kong (SAR)	South Africa
Fixed Broadband speed (ranking)	1	2	3	4	5	95
Fixed Broadband download speed (Mbps)	234,55	224,84	211,34	207,41	206,71	43,23
Fixed Broadband upload speed (Mbps)	199,84	133,81	38,22	97,28	149,72	33,06
Mobile Broadband						
	United Arab Emirates	China	Singapore	Hong Kong (SAR)	South Africa	Chile
Mobile Broadband speed (ranking)	1	8	19	34	58	79
Mobile download speed (Mbps)	161,15	99,48	78,92	56,64	34,71	25,81
Mobile upload speed (Mbps)	23,49	23,45	15,87	12,06	6,79	11,88

Source: OOKLA, Speedtest Intelligence® 2022

4.11.2 Speedtest® benchmark with BRICS countries

When benchmarking against BRICS countries during 2022, South Africa's Speedtest® ranking of 95th place for fixed broadband was the lowest ranking in the grouping. South Africa's Speedtest® ranking of 58th place (out of 137 countries) for mobile broadband was the second best in the BRICS grouping, which is led by China with a Speedtest® ranking of 8th place.

Table 6: Speedtest® benchmark BRICS countries in 2022

Fixed Broadband					
	China	Brazil	Russia	India	South Africa
Fixed Broadband speed (ranking)	3	30	52	79	95
Fixed Broadband download speed (Mbps)	211,34	100,58	75,1	50,02	43,23
Fixed Broadband upload speed (Mbps)	38,22	73,7	81,43	48,77	33,06
Mobile Broadband					
	China	Brazil	Russia	India	South Africa
Mobile Broadband speed (ranking)	8	57	85	69	58
Mobile download speed (Mbps)	99,48	35,85	23,46	29,85	34,71
Mobile upload speed (Mbps)	23,45	10,87	8,41	6,16	6,79

Source: OOKLA, Speedtest Intelligence® 2022

4.11.3 Speedtest® benchmark with neighbouring countries

In 2022, Ookla Speedtest Intelligence® ranked South Africa at 95th place (out of 180 countries) for fixed broadband, which is the highest ranking when compared to other neighbouring countries. Lesotho came second highest in Southern Africa with a ranking of 134th. Likewise, South Africa's ranking of 58th place (out of 137 countries) for mobile broadband was the highest amongst its neighbouring countries, followed by Zimbabwe with a ranking of 164th place.

Table 7: Speedtest® benchmark neighbouring countries in 2022

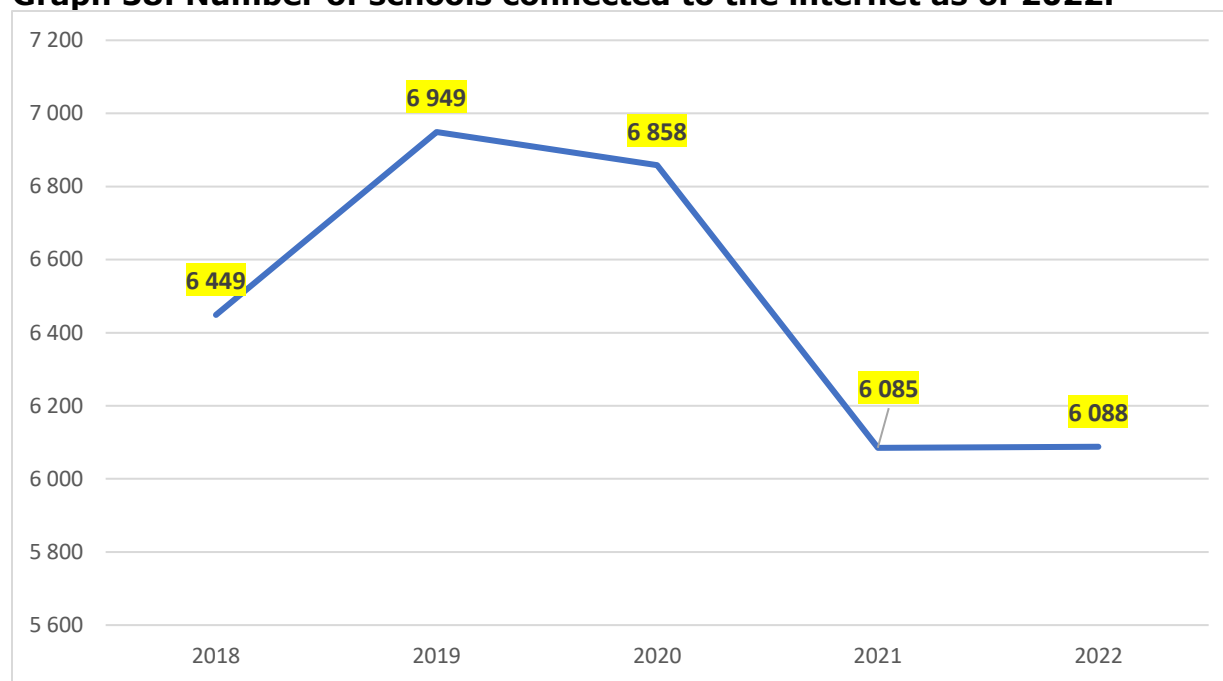
Fixed Broadband							
	South Africa	Lesotho	Zimbabwe	Namibia	Mozambique	Botswana	Eswatini
Fixed Broadband speed (ranking)	95	134	164	165	168	169	170
Fixed Broadband download speed (Mbps)	43,23	18	7,58	7,51	6,48	6,43	5,59
Fixed Broadband upload speed (Mbps)	33,06	14,27	8,5	3,21	4,45	4,8	4,58
Mobile Broadband							
	South Africa	Namibia	Mozambique	Zimbabwe	Lesotho	Botswana	Eswatini
Mobile Broadband speed (ranking)	58	98	107	132	-	-	-
Mobile download speed (Mbps)	34,71	20,03	17,55	8,58	-	-	-
Mobile upload speed (Mbps)	6,79	7,92	12,2	4,21	-	-	-

Source: OOKLA, Speedtest Intelligence® 2022

4.12 Number of Schools Connected to the Internet Based on Obligations Imposed by ICASA

In 2022, the total number of schools connected to the internet based on universal service obligations imposed by ICASA was 6,088. The number of connected schools dropped since covid-19.

Graph 38: Number of schools connected to the internet as of 2022.



Source: ICASA Electronic Communications Questionnaire 2018 - 2022

5 BROADCASTING SECTOR

The Authority notes that Minister of Communications and Digital Technologies has published a consultation document inviting written comments regarding the deadline of 31 March 2023 being the final switch-off date of the Analogue Signal and the End of Dual Illumination⁷. The completion of the digital migration process is a critical step to free up vital spectrum bands for the IMT deployment.

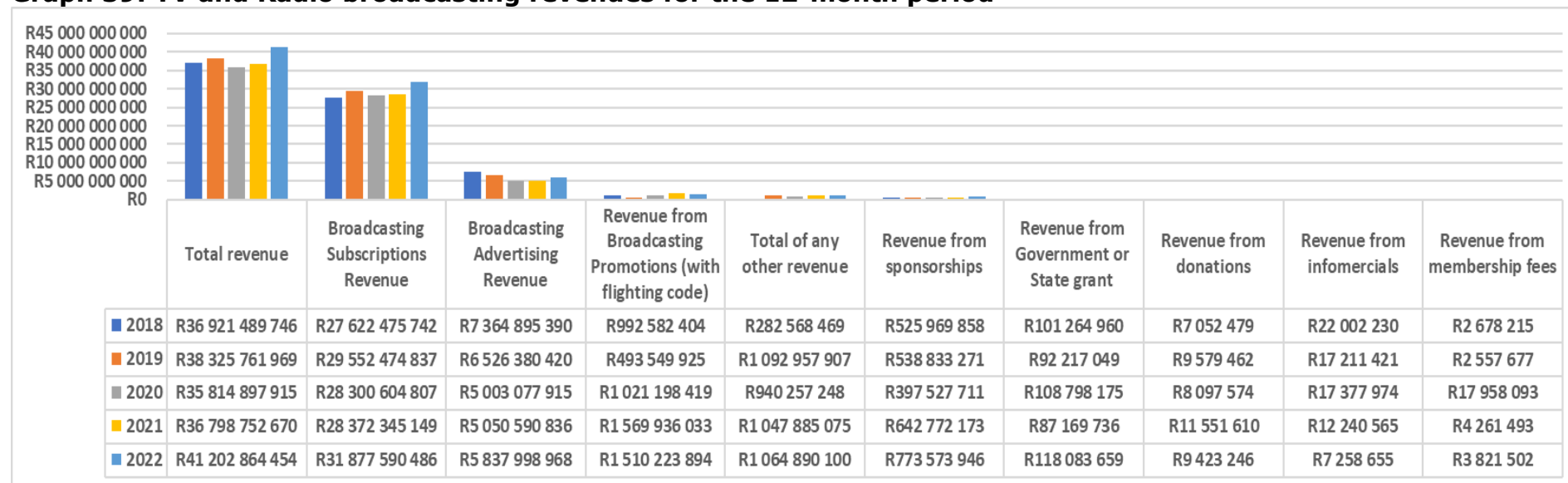
⁷ Government Gazette Number 47697 (Notice 1513 of 2022) dated 09 December 2022

5.1 Broadcasting Revenue

The total broadcasting services revenue increased by 12% from 36.7 billion in 2021 to 41.2 billion in 2022. Revenue from advertising and subscriptions increased by 15.6% and 12.4%, respectively. The infomercial revenue decreased by 40.7%.

Over a period of 5 years, the total revenue from broadcasting services increased by 2.8%.

Graph 39: TV and Radio broadcasting revenues for the 12-month period

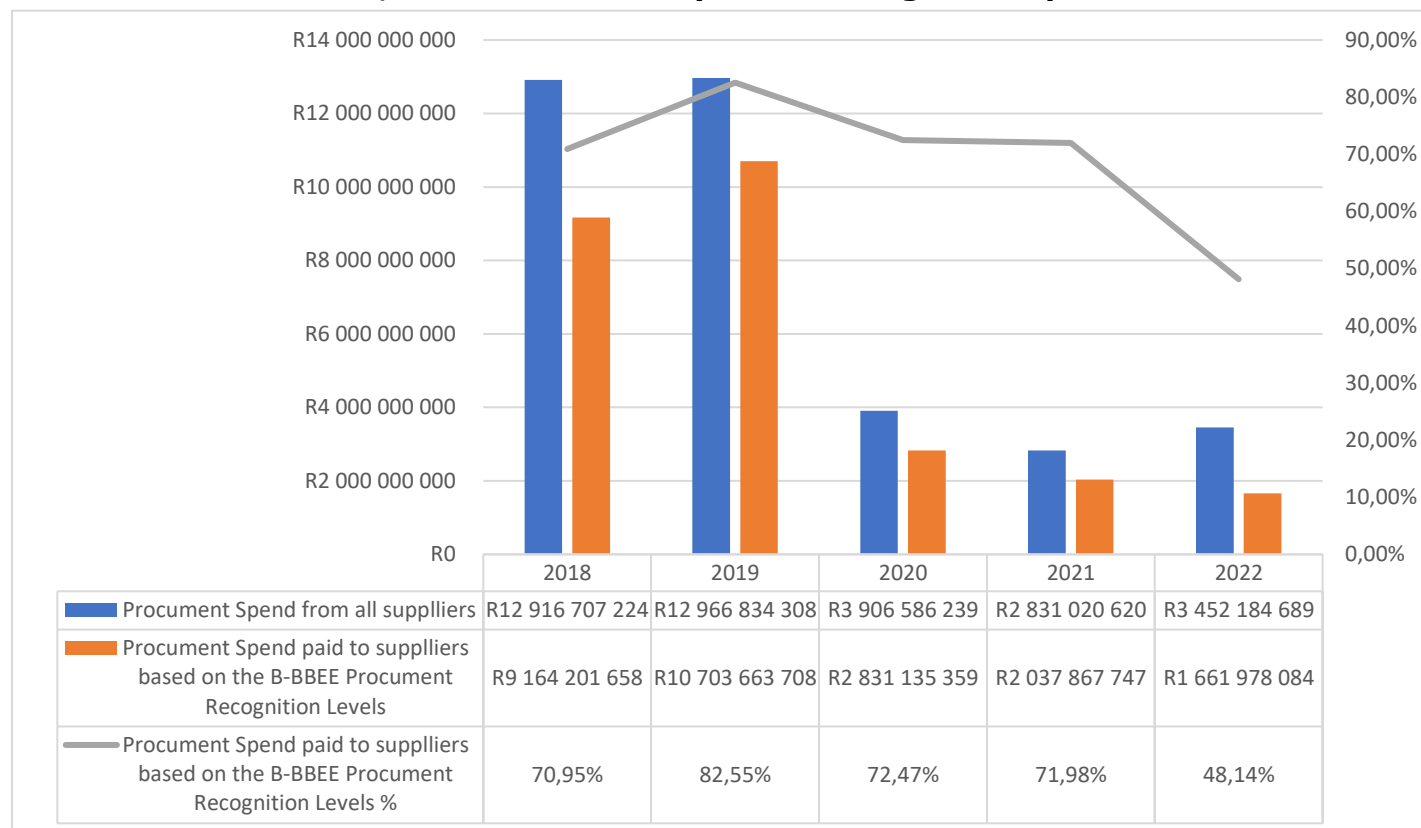


Source: ICASA Broadcasters Questionnaire, December 2018 - 2022 (*data includes TV & radio broadcasting*)

5.2 Broadcasting Black Economic Empowerment Measures

The total broadcasting procurement spend was R3.4 billion in 2022. 48.14% (1.6 billion) of this amount was spent on suppliers based on their B-BBEE rating level.

Graph 40: Broadcasting sector procurement spend paid to suppliers based on B-BBEE, for the 12-month period ending 30th September.



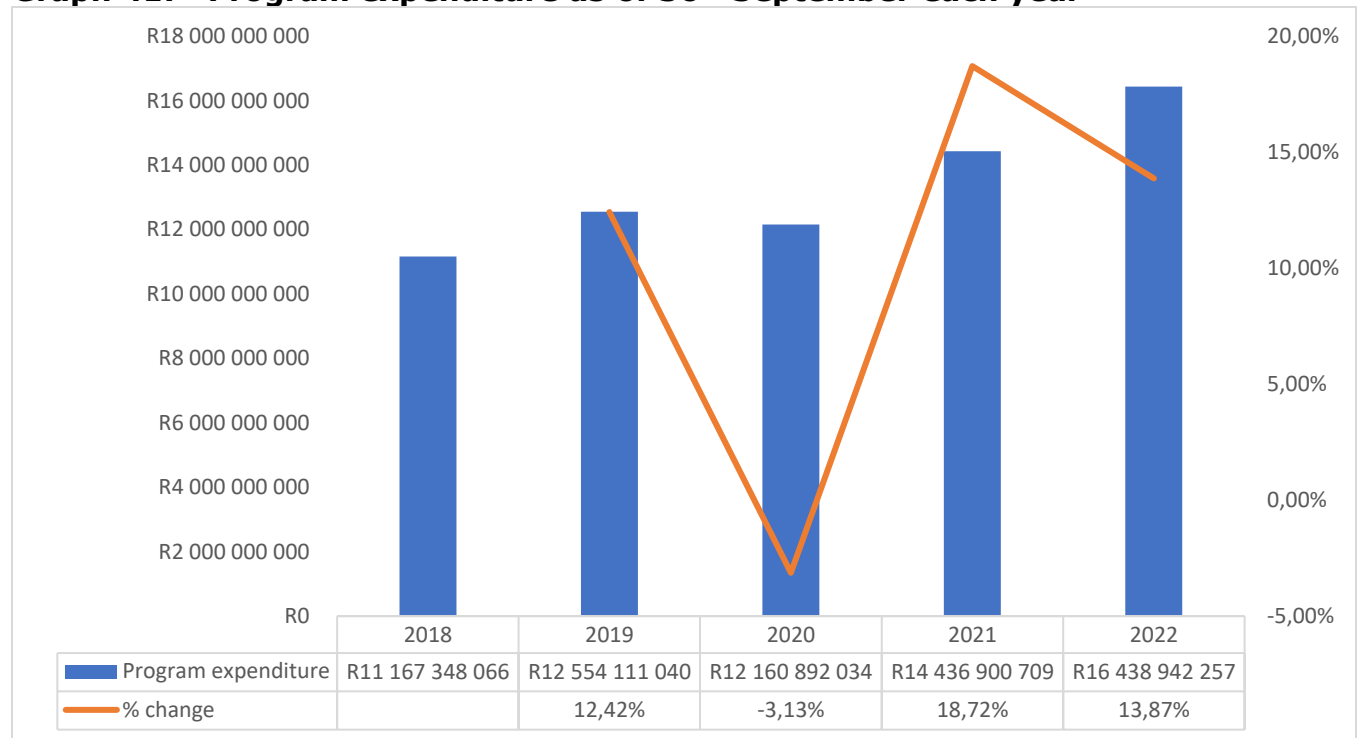
Source: ICASA Broadcasters Questionnaire, December 2018 - 2022

5.3 Programme expenditure

Programme (TV and Radio) expenditure increased by 13.87% from R14.4 billion in 2021 to R16.4 billion in 2022.

Over a period of 5 years, programme expenditure increased by 10.15%.

Graph 41: Program expenditure as of 30th September each year



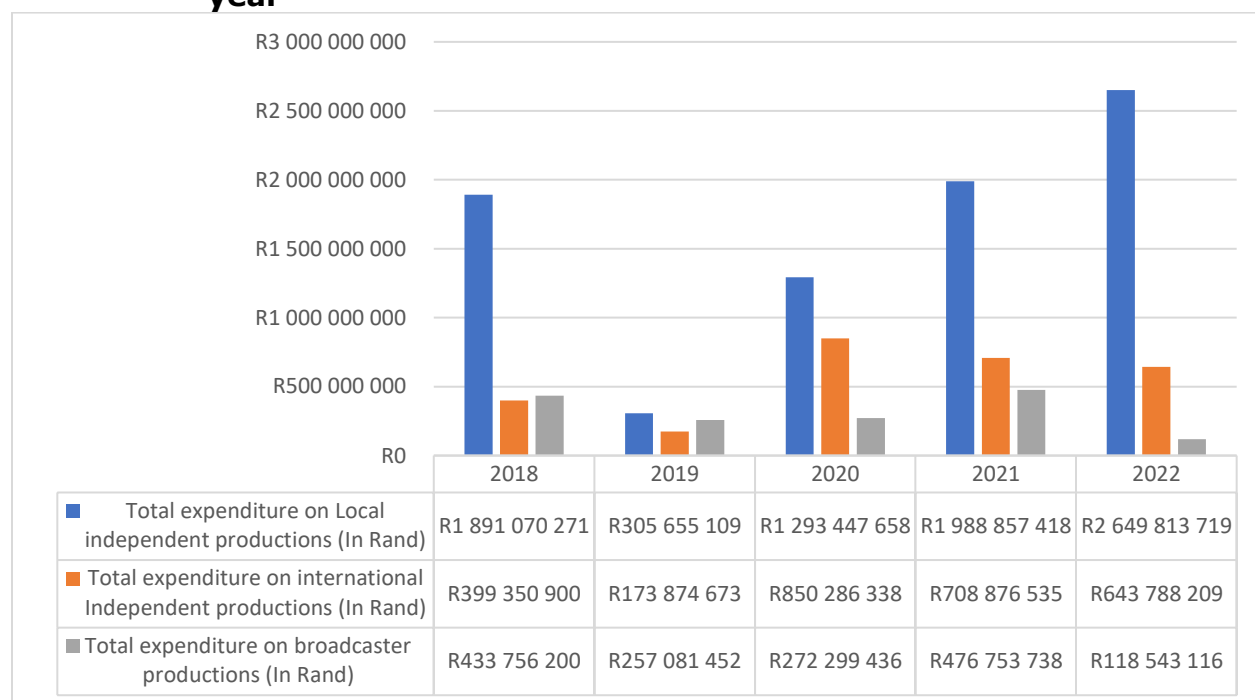
Source: ICASA Broadcasters Questionnaire, December 2018- 2022

5.4 Broadcasting productions expenditure

The total expenditure on local independent productions increased by 33.2% from R1.9 billion in 2021 to R2.6 billion in 2022 while the total expenditure on broadcaster productions decreased by 75.14% from R476 million in 2021 to R118 million in 2022.

Over a period of 5 years, the total expenditure on local independent productions increased by 8.8%.

Graph 42: Broadcasting productions expenditure as of 30th September each year



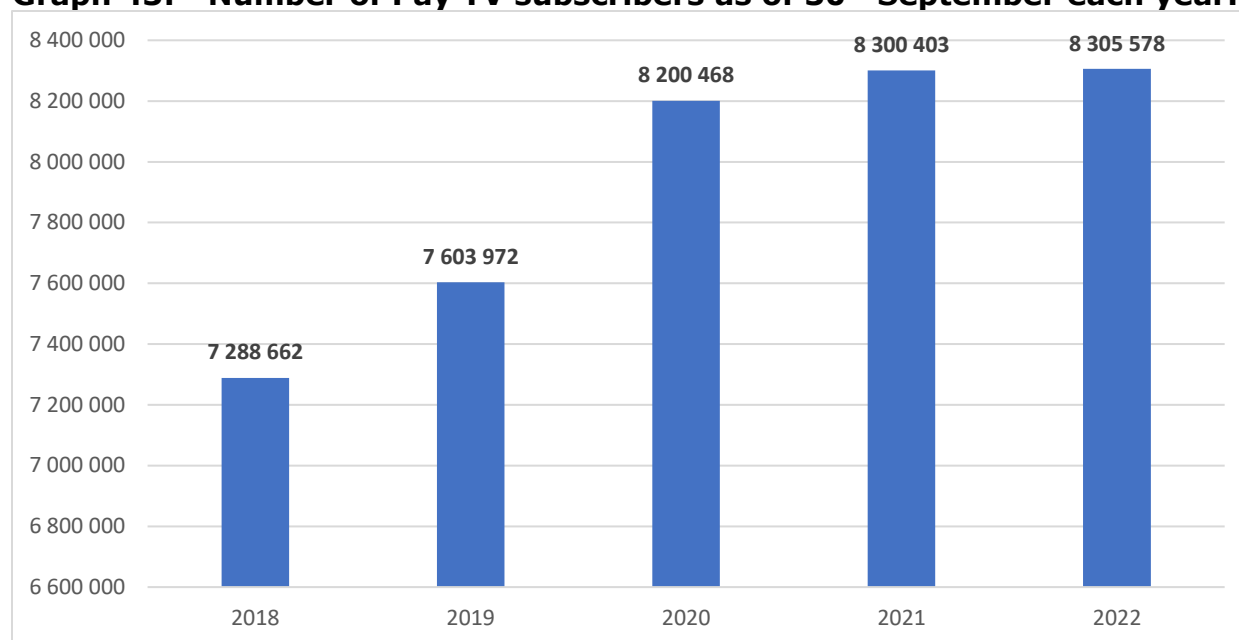
Source: ICASA Broadcasters Questionnaire, December 2018 - 2022

5.5 Number of Pay TV Subscribers

The total number of Pay TV subscriptions slightly increased by 0.1% from 8 300 403 in 2021 to 8 305 578 in 2022.

Over a period of 5 years, Pay TV subscriptions increased by 3.3%.

Graph 43: Number of Pay TV subscribers as of 30th September each year.

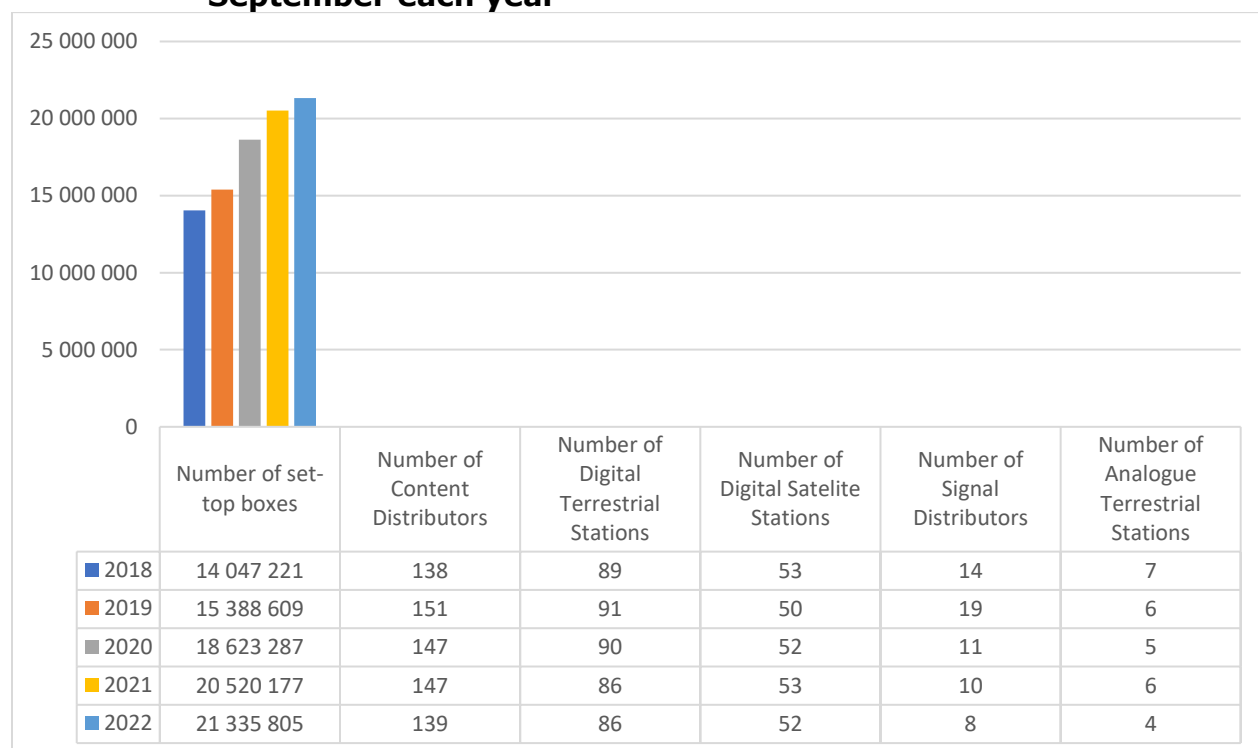


Source: ICASA Broadcasters Questionnaire, December 2018 - 2022

5.6 Total Number of Television Stations and Distributors

The number of set-top boxes increased by 4% from 20.5 million in 2021 to 21.3 million in 2022. The number of Digital Terrestrial stations remains unchanged at 86 while the number of Digital Satellite stations decreased by 2%.

Graph 44: Total Number of Television Stations and Distributors as of 30th September each year



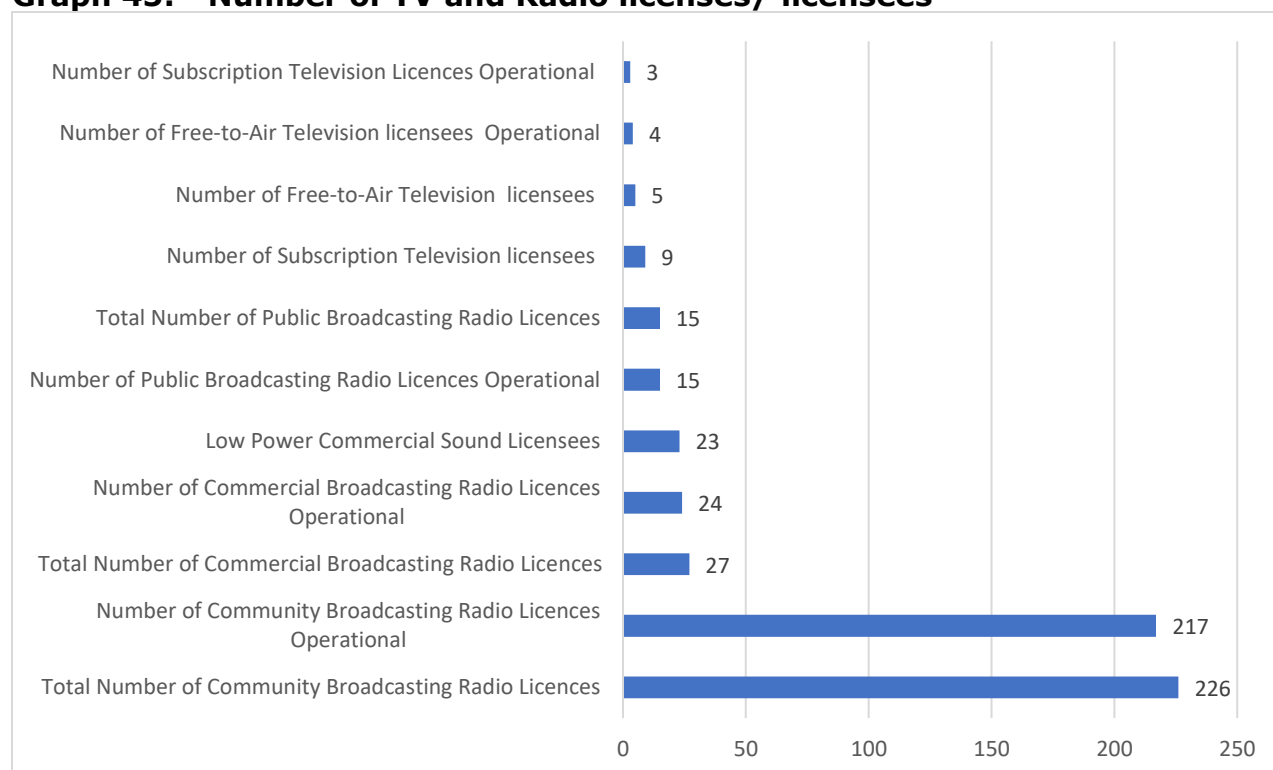
Source: ICASA Broadcasters Questionnaire, December 2018 - 2022

**Government subsidies set-top boxes are not included **

5.7 Number of TV and Radio services licences/ licensees

The number of TV and radio services licences/ licensees is depicted in the graph 46.

Graph 45: Number of TV and Radio licenses/ licensees



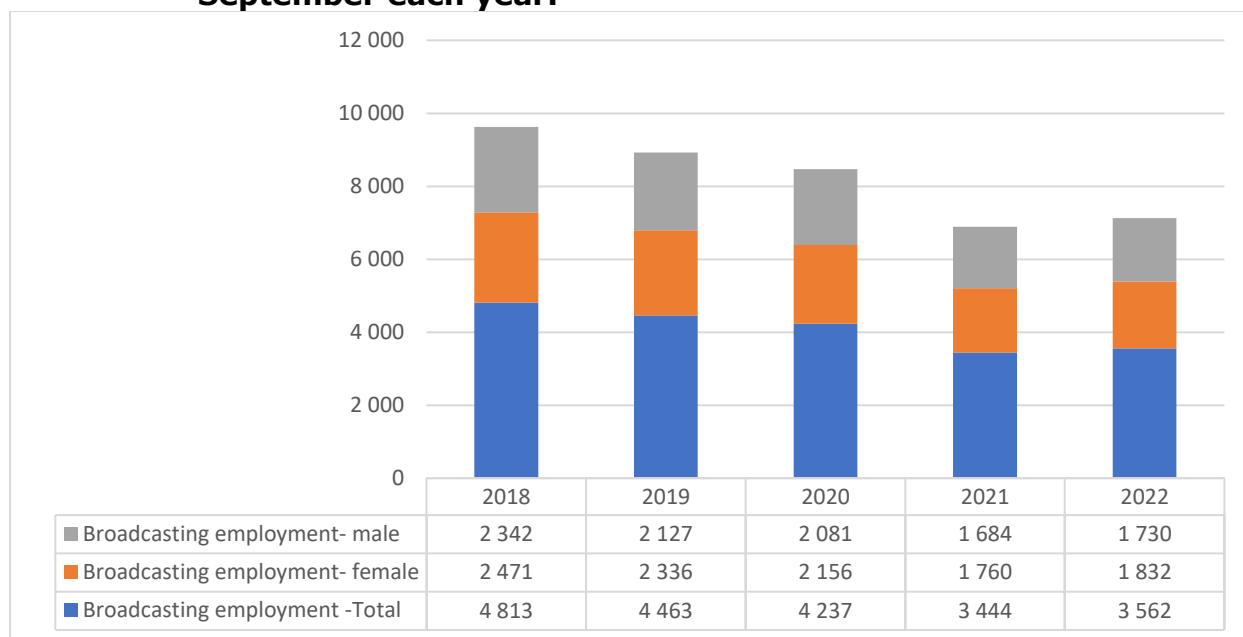
Source: ICASA Broadcasters Questionnaire, December 2023

5.8 Broadcasting Sector Employment

Total employment in the broadcasting sector slightly increased by 3.43% from 3 444 in 2021 to 3 562 in 2022. Female employees as a proportion of the total employment also increased by 4.09% from 1 760 to 1 832 in 2022. Broadcasting employment for male increased from 1,684 in 2021 to 1,730 in 2022.

Over a 5-year period, employment in the broadcasting sector decreased by 7.25% while female employment decreased by 7.21%.

Graph 46: Persons employed in the broadcasting sector, as of the 30th of September each year.

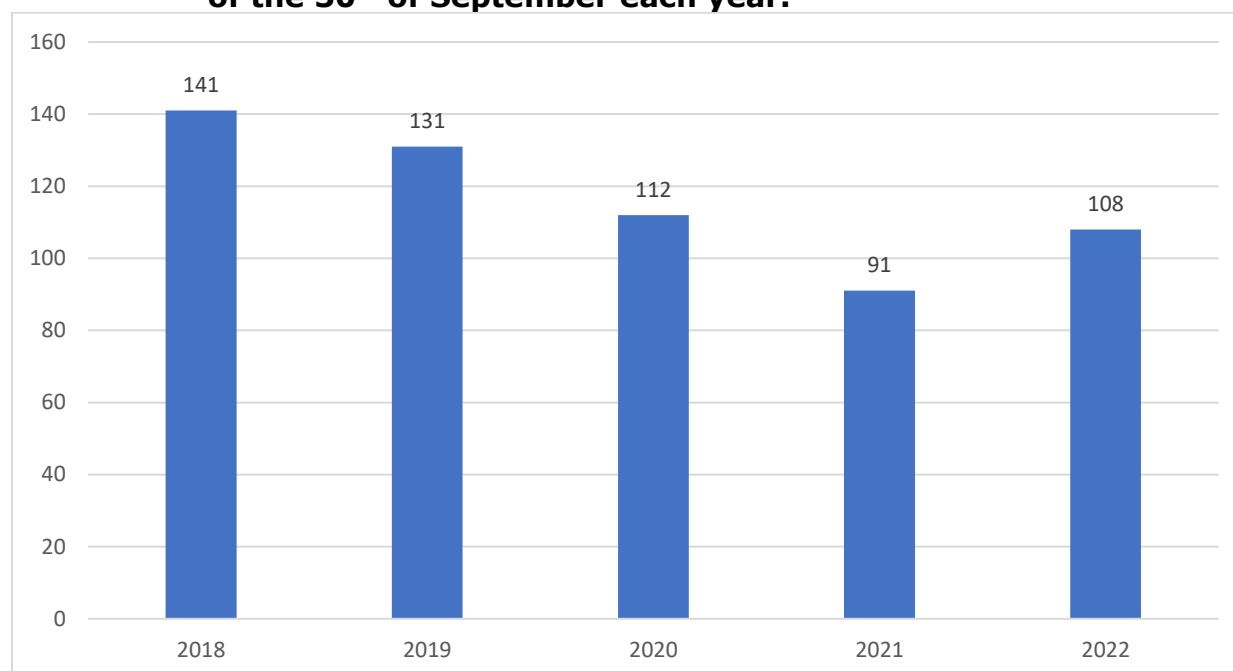


Source: ICASA Broadcasters Questionnaire, December 2018 - 2022

5.8.1 Persons with disabilities employed in the broadcasting Sector.

The number of persons with disabilities employed in the broadcasting sector increased from 91 in 2021 to 108 in 2022.

Graph 47: Persons with disabilities employed in the broadcasting sector, as of the 30th of September each year.

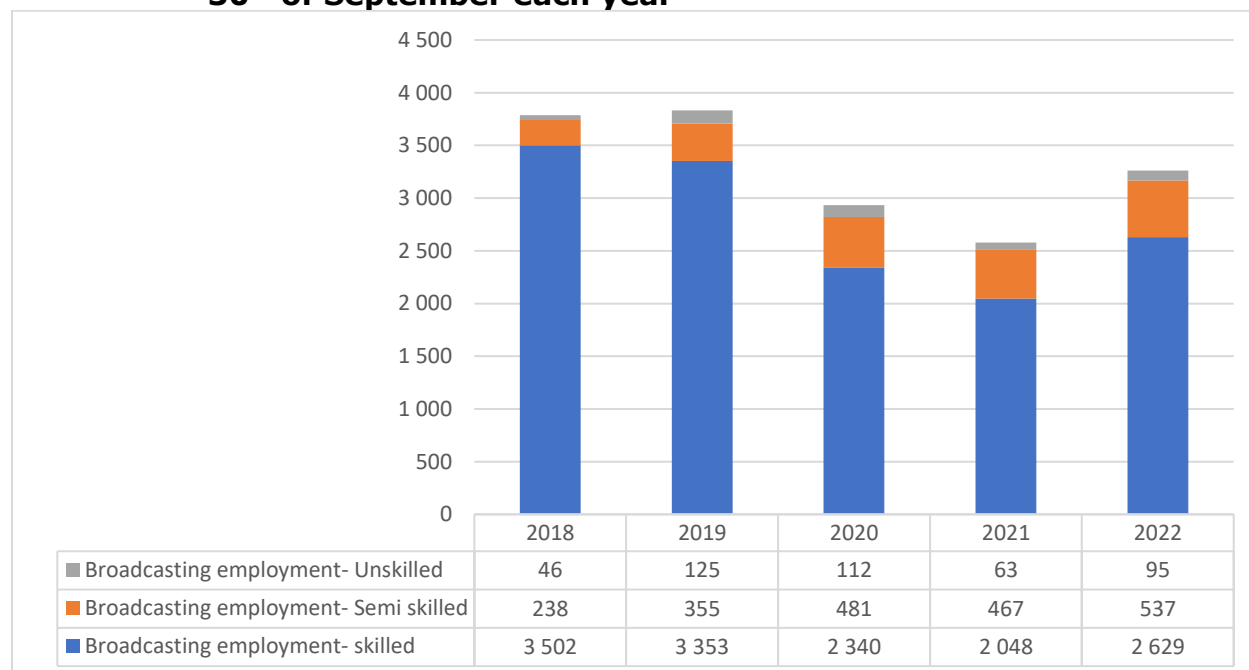


Source: ICASA Electronic Communications Questionnaire 2018 – 2022

5.8.2 Breakdown of employees in the Broadcasting Sector

In 2022, there were about 2,629 skilled persons, 537 semi-skilled persons, and 95 unskilled persons in the broadcasting sector.

Graph 48: Breakdown of employees in the broadcasting sector, as of the 30th of September each year

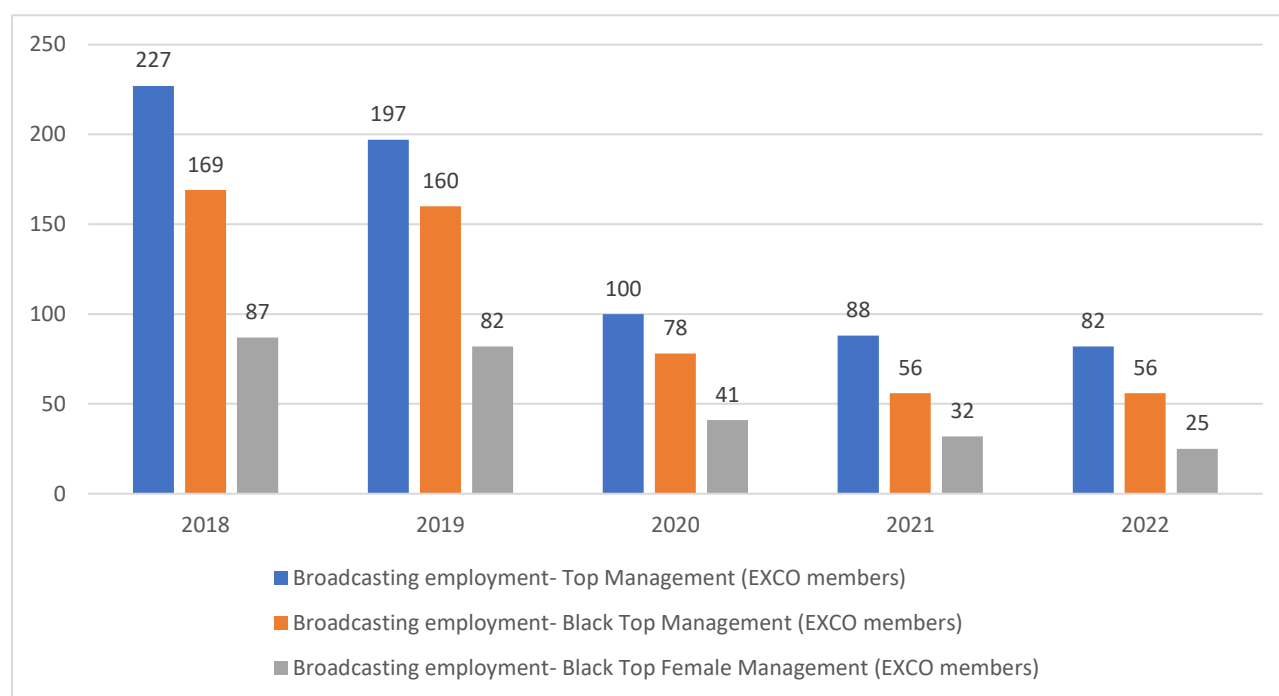


Source: ICASA Broadcasters Questionnaire, December 2018 - 2022

5.8.3 Black Economic Empowerment Employment Measures in the Broadcasting Sector

In 2021, Top management (EXCO members) employment decreased by 6.82% from 88 in 2021 to 82 in 2022. Top black female management also decreased by 21.88% from 32 in 2021 to 25 in 2022.

Graph 49: Broadcasting black economic empowerment Measures, for the 12-month period ending 30th September each year.



Source: ICASA Broadcasters Questionnaire, December 2018 - 2022

6 POSTAL SERVICES SECTOR

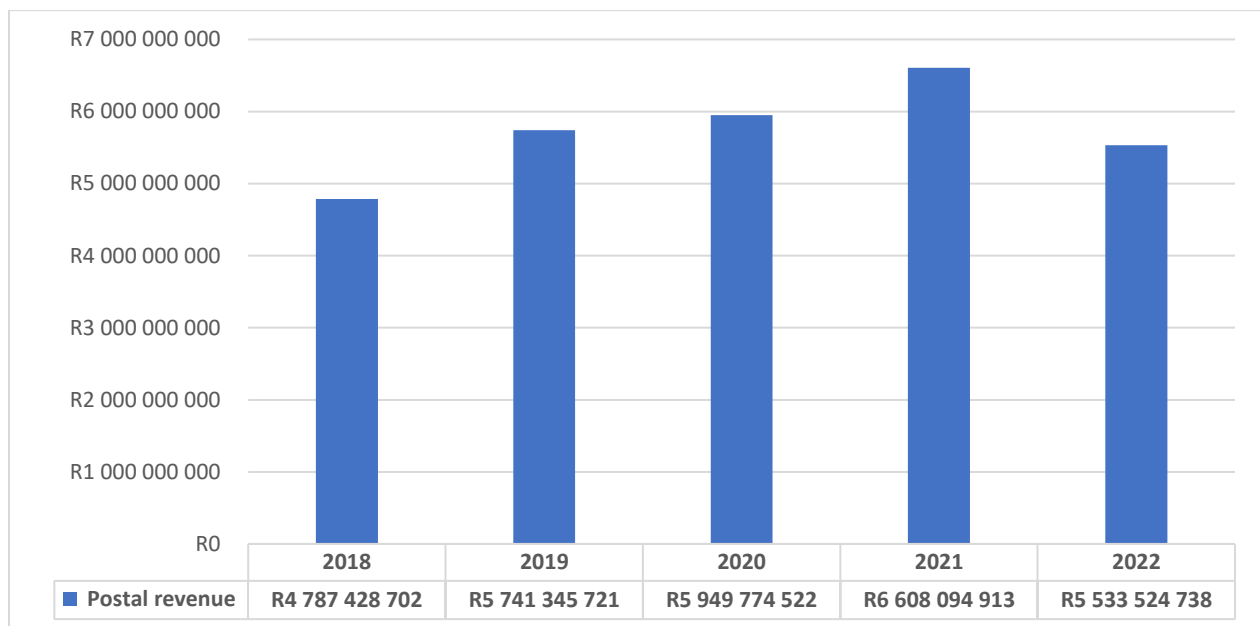
ICASA continues to review the postal services regulations and align them with new developments to ensure that postal services regulation addresses and amended to serve the public's interest. To this end, in the 2022/23 financial year, the Authority has initiated a project on the review of the regulations regarding the Conveyance of Mail, 2009 to assess the effectiveness of the Regulations in dealing with current consumer issues.

6.1 Postal Sector Revenue

The postal services revenue decreased by 16.26% from R6.6 billion in 2021 to R5.5 billion in 2022.

Irrespective of all challenges faced by the sector over the years, the last five years postal services revenue increased by 3.69%.

Graph 50: Postal sector revenue, 12-month period ending 30th September each year.



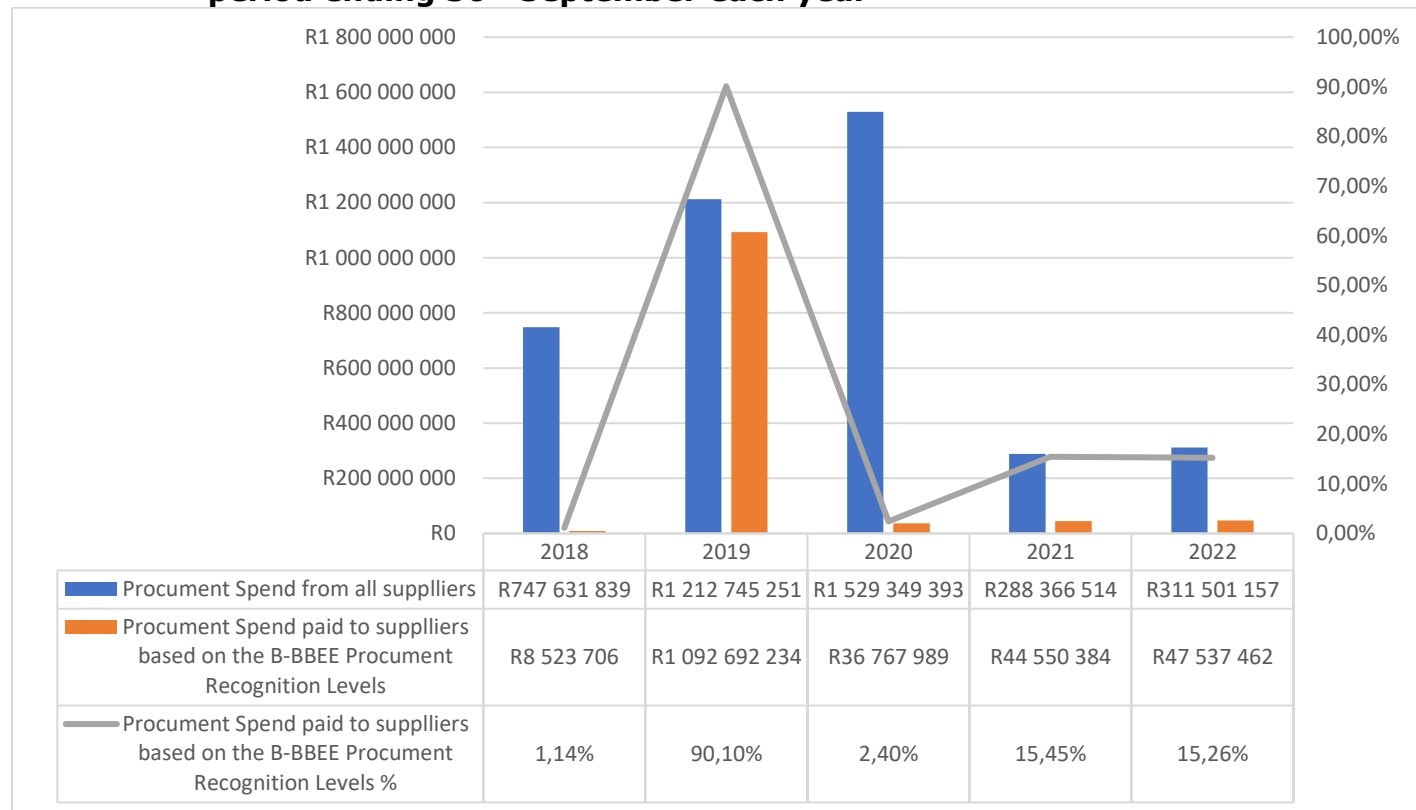
Source: ICASA Postal Questionnaire, December 2018 - 2022

We had low response rate from unreserved postal sector

6.2 Postal Sector Black Economic Empowerment Measures

The total postal sector procurement spend paid to all suppliers was R311 million in 2022, 15.26% (R47.5 million) of this amount was spent on supplier based on their B-BBEE rating level.

Graph 51: Postal sector procurement spend paid to suppliers based on the B-BBEE Procurement Recognition Levels, for the 12-month period ending 30th September each year



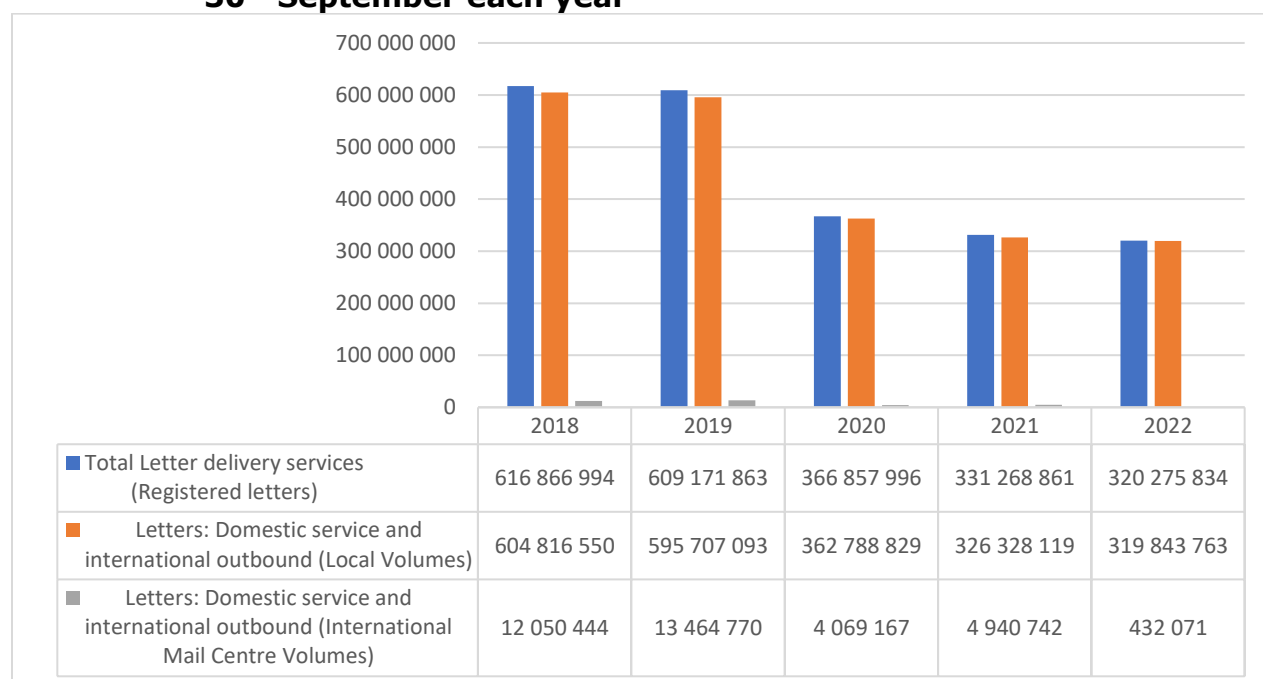
Source: ICASA Postal Questionnaire, December 2018 - 2022

Note: *There was low response rate from unreserved postal sector*

6.3 Letter delivery services (Registered letters)

The total number of letter delivery services (registered letters) decreased by 3.32% from 331 million in 2021 to 320 million in 2022. Domestic service and international outbound (Local Volumes) also decreased by 2% from 326 million in 2021 to 319 million in 2022.

Graph 52: Total number of letter delivery services (registered letters), as of 30th September each year



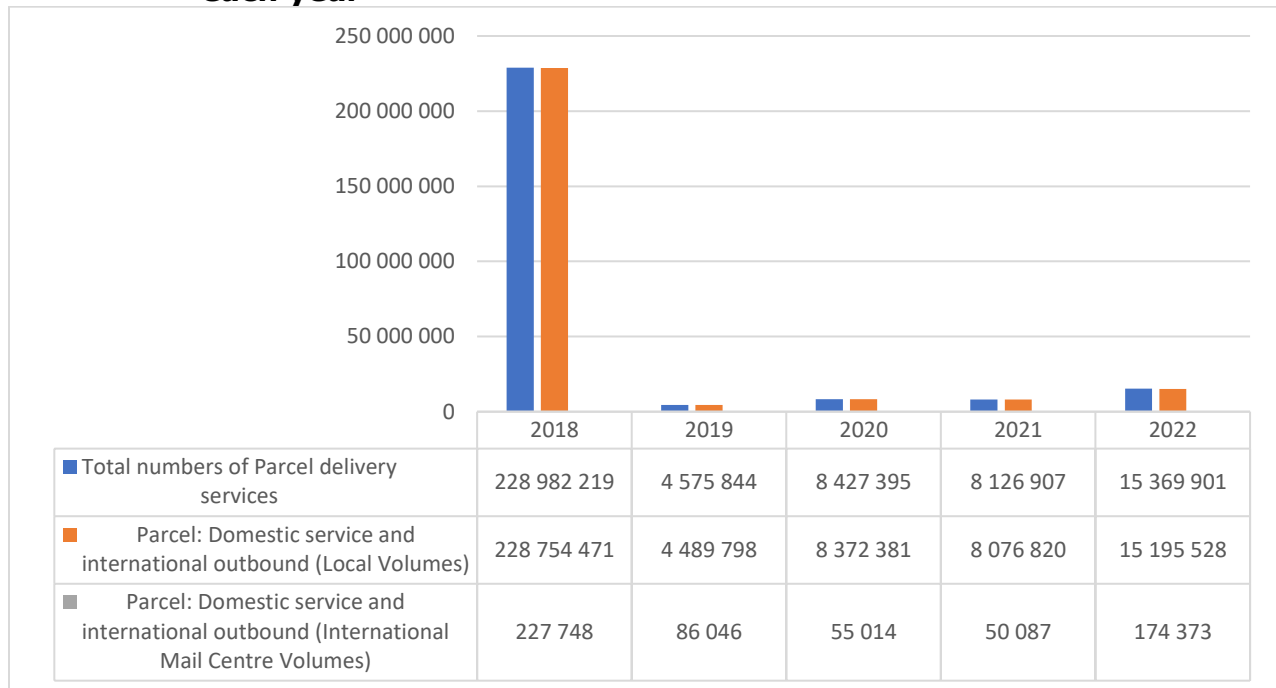
Source: ICASA Postal Questionnaire, December 2018 - 2022

Note: *There was low response rate from unreserved postal sector*

6.4 Parcel delivery services

The total number of parcel delivery services for both local and international mail centre volumes increased by 89.12 % from 8.1 million in 2021 to 15.3 million in 2022.

Graph 53: Total number of parcel delivery services, as of 30th September each year



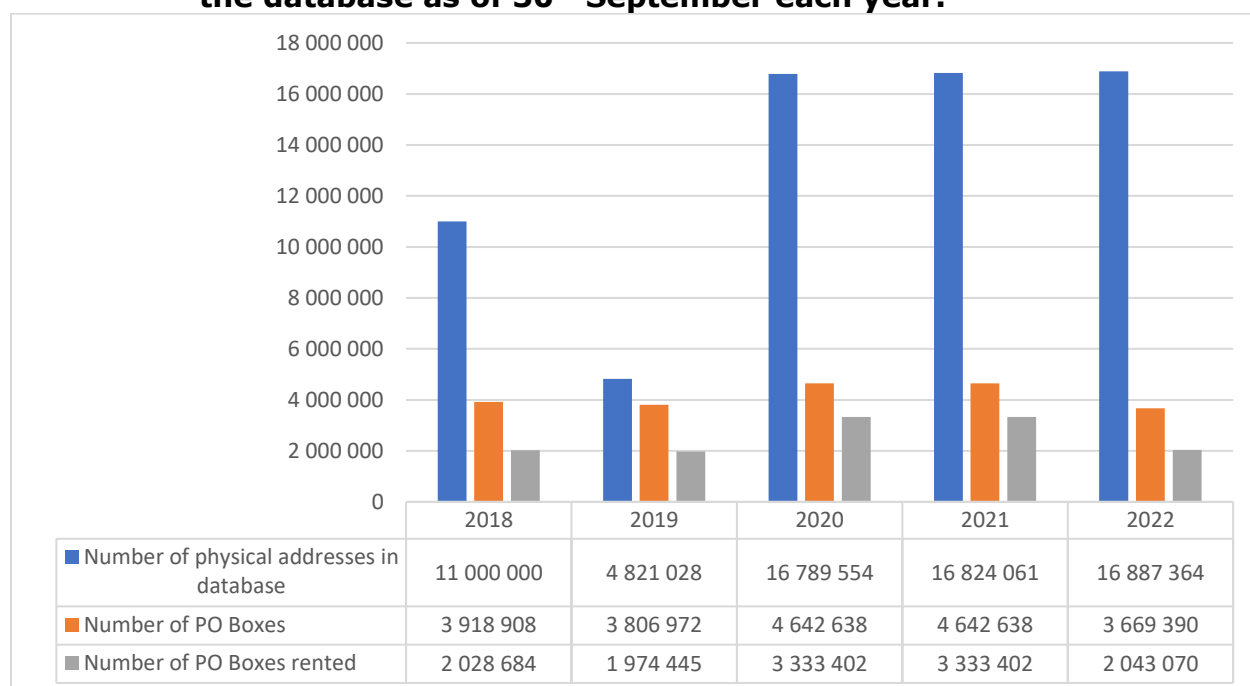
Source: ICASA Postal Questionnaire, December 2018 - 2022

Note: *There was low response rate from unreserved postal sector*

6.5 Number of PO Boxes, PO Boxes rented, and Physical addresses in the database.

The number of physical addresses increased by 0.38%, while the number of PO Boxes as well as the number of rented PO Boxes decreased by 20.96% and 38.71% in 2022, respectively.

Graph 54: Number of PO Boxes, PO Boxes rented, and physical addresses in the database as of 30th September each year.



Source: ICASA Postal Questionnaire, December 2018 - 2022

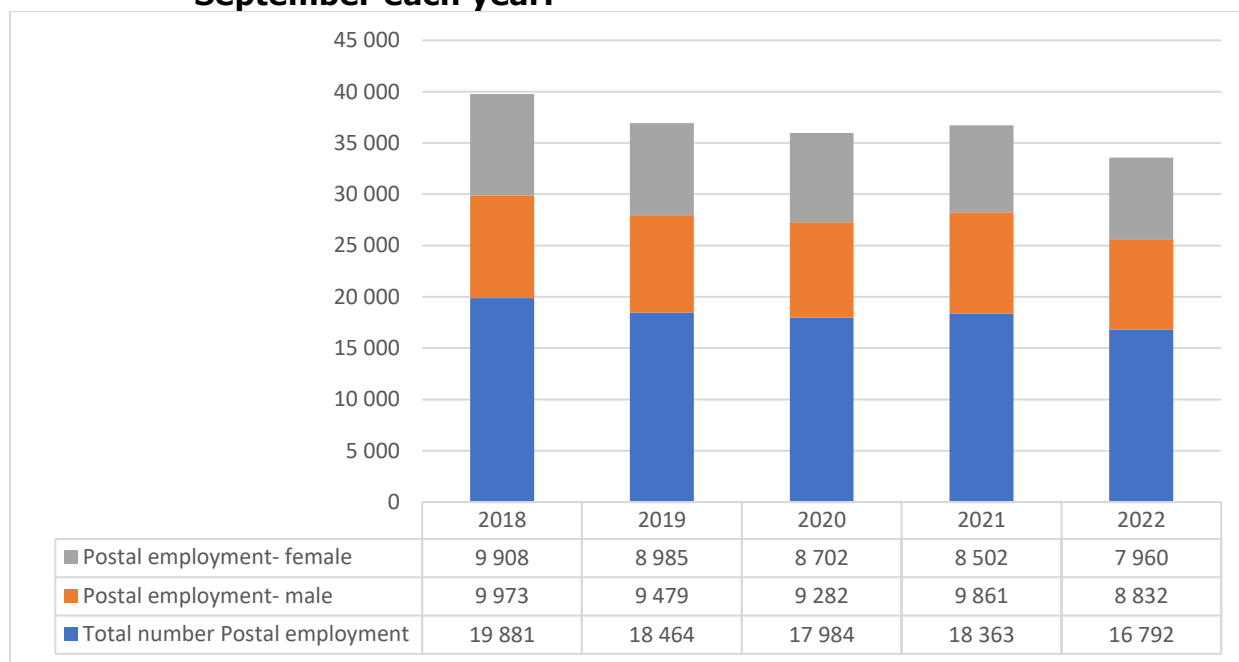
Note: *There was low response rate from unreserved postal sector*

6.6 Postal Services Sector Employment

The total postal services sector employment decreased by 8.56% from 18 363 in 2021 to 16 792 in 2022. Female postal employment also decreased by 6.37% from 8 502 in 2021 to 7 960 in 2022. Male postal employment decreased from 9 861 in 2021 to 8 832 in 2022.

Over a period of 5 years, the total number of persons employed in the postal sector decreased by 4.13%.

Graph 55: Persons employed in Post Service Sector, by gender, as of 30th September each year.



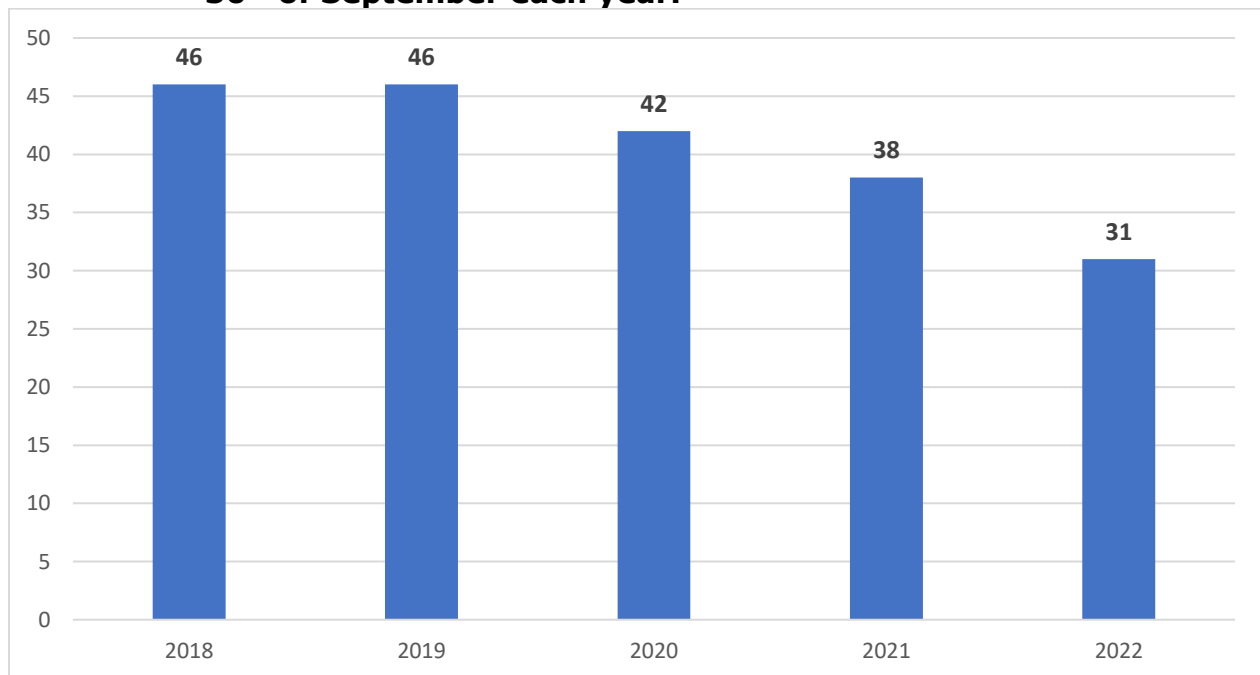
Source: ICASA Postal Questionnaire, December 2018 - 2022

Note: *There was low response rate from unreserved postal sector*

6.6.1 Persons with disabilities employed in the postal Sector.

The number of persons with disabilities employed in the postal sector decreased from 38 in 2021 to 31 in 2022.

Graph 56: Persons with disabilities employed in the postal sector, as of the 30th of September each year.



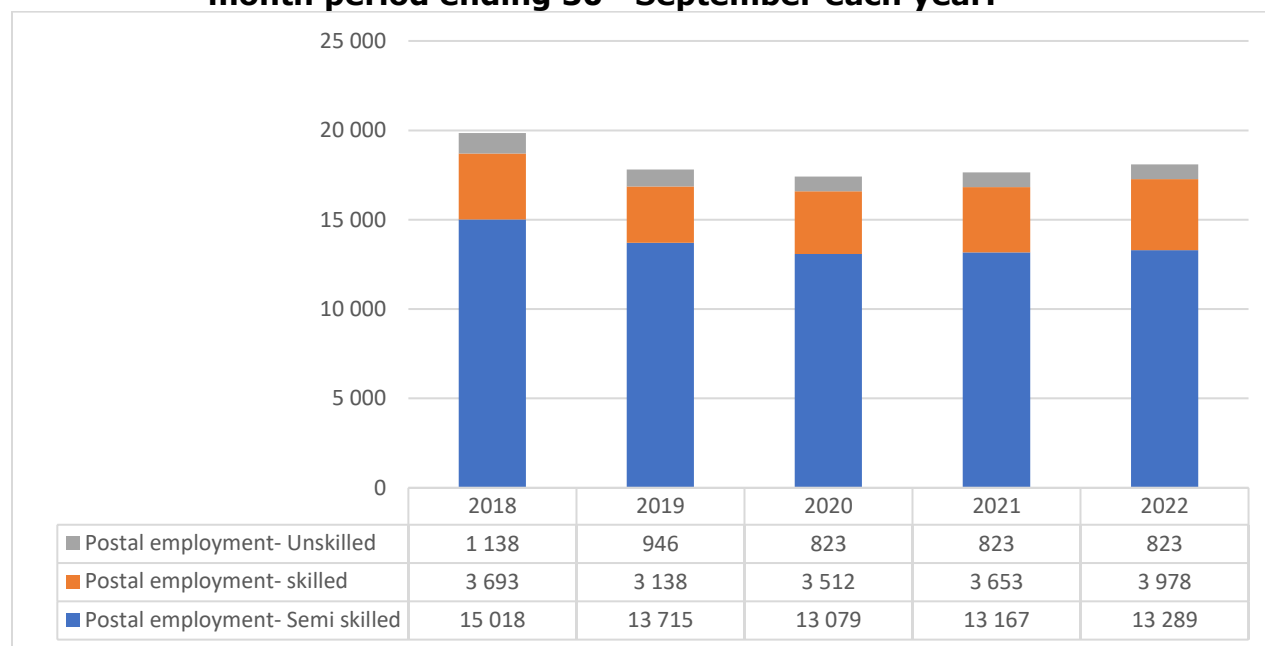
Source: ICASA Electronic Communications Questionnaire 2018 – 2022

6.6.2 Breakdown of Persons Employed in the Postal Sector

Most people employed by the sector are semi-skilled constituting about 74% of the employees in 2022.

Over the past five years the number of semi-skilled employees decreased by 3.01%.

Graph 57: Breakdown of persons employed in the postal sector, for the 12-month period ending 30th September each year.



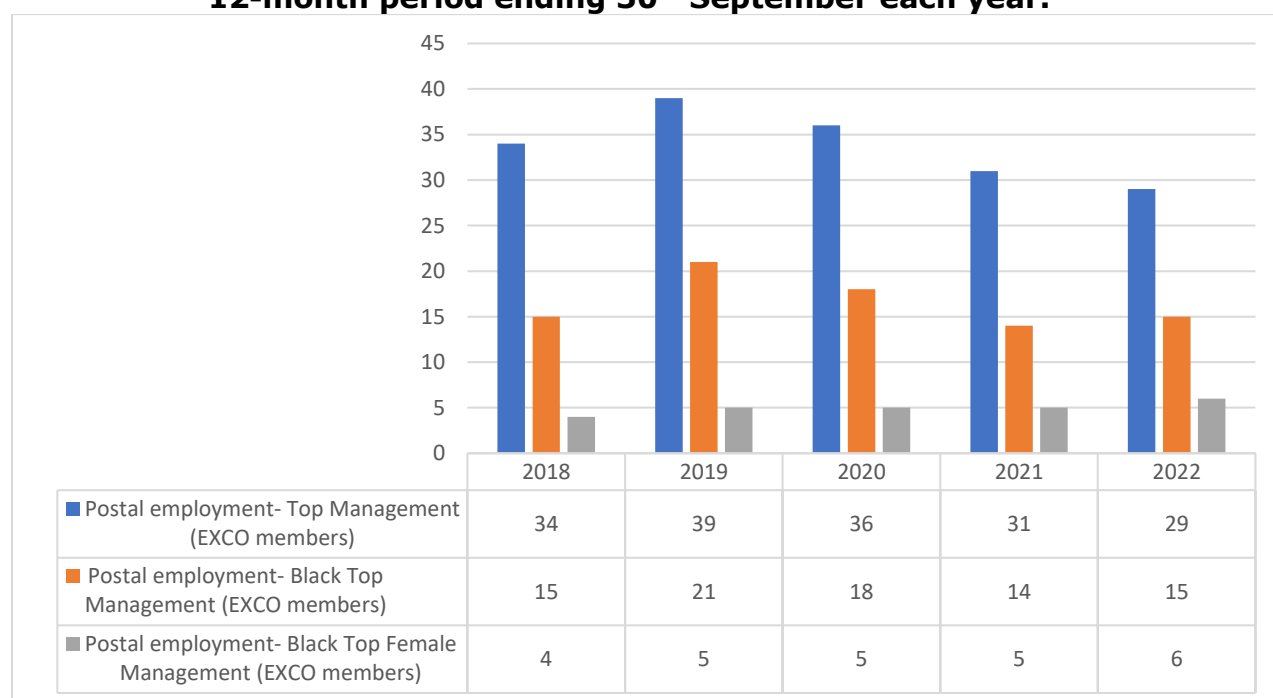
Source: ICASA Postal Questionnaire, December 2018 - 2022

Note: *There was low response rate from unreserved postal sector*

6.6.3 Postal service sector Black Economic Empowerment Measures

The number of employees in top management (EXCO members) decreased by 6.45% in 2022 while top Black management as well as and top Black female management increased by 7.14% and 20%, respectively.

Graph 58: Postal sector Black Economic Empowerment Measures, for the 12-month period ending 30th September each year.



Source: ICASA Postal Questionnaire, December 2018 - 2022

Note: *There was low response rate from unreserved postal sector*

7 CONCLUSION

The following highlights are worth noting for the three sectors (telecommunications, broadcasting, and postal services)

- The Authority has been reporting on the performance of three sectors that it regulates (telecom, broadcasting, and postal), data indicate that the sector's revenue has been increasing over the years. In 2018, the sector's revenue was at R229.2 billion, and it increased to R254.8 billion in 2022, showing an increase of about R25.5 billion over a five-year period.
- Employment figures in the ICT sector have been decreasing, just like other sectors in the country. In 2018, there were about 61 thousand people employed; however, the number dropped significantly to 52 thousands in 2022. But, if you look attentively, on year-on-year comparison you can see that there was 20% increase in employment from 2021 to 2022.

The following highlights are worth noting with respect to the telecommunications sector.

- Over the past five years, 4G/LTE population coverage has increased from 85.7% in 2018 to 98% in 2022, we have also noted a significant increase in 5G population coverage from 7.5% in 2021 to 20% in 2022, However, household with access to internet at home is still very low seating at 10.4% of South African households.
- The total fixed broadband subscriptions decreased by 8.02%. (From 1.7 million in 2021 to 1.6 million in 2022), which was manly driven by the decrease of 16.60% from DSL subscriptions.

- The total international Internet bandwidth (Mbps) capacity increased by 25.43% over a period of five years.

The following highlights are worth noting with respect to the broadcasting sector.

- We have seen a significant decrease in the total expenditure on broadcasting productions, it was seating at about 433 million in 2018 to 118 million in 2022, however, Pay TV subscriptions over the past five years has seen a growth of 7.2 million in 2018 to 8.3 million in 2022.
- The total number of Set-top boxes increased by 4%. (From 20.5 million in 2021 to 21.3 million in 2022).

The following highlights are worth noting for the postal services sector.

- Over the years, the postal service has struggled. In 2018, revenue was R4.7 billion, and in 2022, it grew slightly to R5.5 billion. However, when compared year on year, revenue for the postal service decreased by 16.26% from R6.6 billion in 2021 to R5.5 billion in 2022.
- Physical addresses increased by 0.38%. The number of PO Boxes and the number of rental PO Boxes declined by 20.96% and 38.71% in 2022, respectively.
- The number of semi-skilled and skilled employees increased by 0.93% and 8.90% in 2022, respectively.

APPENDICES

Appendix 1: ICASA questionnaire respondents, January 2023

ICASA questionnaire respondents, January, 2023	
Telecommunication's Licensees	
1	Afrihost SP (Pty) Ltd
2	Amobia Communications (Pty) Ltd
3	ASK Internet Technologies CC
4	AT&T South Africa (Proprietary) Limited
5	Axxess DSL (Pty) LTD
6	Backspace Technologies
7	Bethnet cc
8	BITCO TELECOMS
9	Blue Shadow Investments (Pty) Ltd
10	Borwood Communications (Pty) Ltd
11	BSS Digital
12	Bundu NetworX (Pty) Ltd
13	Cell C Ltd
14	CENTURY CITY CONNECT (PTY) LTD
15	China Telecom South Africa (Pty) Ltd
16	Compatel Africa
17	Comput8 IT (Pty) Ltd t/a COMPUTATE
18	Comsol Networks
19	CRAZYWEB TECH PTY LTD
20	CUBE ICT SOLUTIONS (PTY) LTD
21	Cutman Bush Net
22	CWNET
23	Cybersmart (Pty) Ltd
24	Dark Fibre Africa
25	Datonet (Pty) Ltd
26	Dimension Data
27	Dube TradePort Corporation
28	E WISP
29	Edelnet
30	Equation Business Solutions Pty Ltd
31	Evolution Tel (Pty) Ltd
32	First Technology Pty Ltd
33	Francois Okennedy W.O.R.X (Pty) ltd.
34	Fusion Voice and Data

35	Future Perfect Corporation CC T/A Vanilla
36	Heinrich Heunis
37	HERO TELECOMS (PTY) LTD
38	Ianet (Pty) Ltd
39	ICTGlobe Management
40	IMPLY IT (PTY) LTD
41	InterActive Systems Designs (Pty) Ltd
42	Interexcel World Connection (Pty) Ltd
43	Internet Uncapped CC
44	iONLINE Internet Service Provider (Pty) Ltd
45	IZAK SCHALK WILLEM VAN ZYL
46	Kibo Connect (Pty) Ltd
47	Kliq Holdings
48	LaserNet (Pty) Ltd
49	LBJ GROENEWALD
50	Letaba Wireless (Letaba Networks)
51	Lidino Trading 534 T/A Nuwcom Wireless
52	Link Africa (Pty) Ltd
53	Linux Based Systems Design SA (Pty) Ltd
54	Liquid Telecommunications South Africa (Pty) Ltd
55	Metro Fibre Networx Pty Ltd
56	MTN
57	Mweb, a division of Internet Solutions Digital (Pty) Ltd
58	NCW (Pty) Ltd t/a NetCom Wireless
59	Netwide Internet Services
60	NEXUS NET WIRED & WIRELESS
61	Orange Business Services South Africa Pty Ltd
62	Platoon Trade and Invest 149 (PTY) LTD TA Wanatel (PTY) LTD
63	Pronto Computer Solutions
64	Radiospoor Welkom Pty Ltd
65	Rain (Pty) Ltd
66	Reunert Limited
67	Saicom Voice Services (Pty) Ltd
68	SCAN RF Projects (Pty) Ltd
69	Seagle Telecom
70	Simigenix (Pty) Ltd
71	SKYBER WIFI ENTERPRISES
72	Skynology (PTY)LTD
73	SMS CELLULAR SERVICES PTY LTD

74	SMSPORTAL (PTY) LTD
75	Sonic Computers & Wifi CC
76	STUART VINCENT BODILL
77	Telkom SA SOC Ltd
78	Telviva (Pty) Ltd
79	TT CONNECT (RF)(PTY) LTD
80	Viva Telecoms CC
81	Vodacom (Pty) Ltd
82	Vox Telecommunications (Pty) Ltd
83	Voys Telecoms SA (Pty) Ltd
84	Wispernet Pty Ltd
85	Xlink
Broadcasting Licensees	
1	BOKONE-BOPHIRIMA FM
2	Bush Radio
3	COMRAD TSHEPHO
4	Deukom (Pty) Ltd
5	e.tv (Pty) Ltd
6	Faith Broadcasting Terrestrial
7	Fine Music Radio NPC
8	Groot FM
9	Impact Radio
10	Lekoa Multi-Media and Communication D C
11	Life Broadcasting
12	LINK FM
13	Modiri FM
14	MultiChoice (Pty) Ltd
15	Ngqushwa FM
16	On Digital Media (Pty) Ltd
17	Pretoria FM
18	Primedia Broadcasting
19	Radio Islam
20	RADIO TYGERBERG
21	Rocasat NPC t/a 100.5FM Radio Laeveld
22	SOUTH AFRICAN BROADCASTING CORPORATION Radio
23	SOUTH AFRICAN BROADCASTING CORPORATION TV
24	UMOYA COMMUNICATIONS (PTY) LTD T/A ALGOA FM
25	UNIVEN FM
26	Wild Coast Radio

27	Witzenberg Radio
Postal Services Licensees	
1	Fastway Couriers (South Africa)
2	PATHTEQ QPL LOGISTICS
3	Post Office
4	POSTNET
5	RC Couriers
6	Royale International
7	The courier guy

Appendix 2: Definitions of Telecommunications categories

Definitions of Telecommunications categories	
ICT	Information Communication Technology
Stats SA	Statistics South Africa
ECS	Electronic Communications Services
ECNS	Electronic Communications Network Services
GHS	General household survey
ISP's	Internet Service Providers
Telecommunications sector	
The telecommunications sector comprises fixed and mobile telecommunications services as well as the provision of Internet access.	
<i>Total telecommunication investment</i>	
Total annual investment in telecommunication services, also referred to as annual capital expenditure, refers to the investment during the financial year in telecommunication services (including fixed, mobile and Internet services) for acquiring or upgrading property and networks. Property includes tangible assets such as plant, intellectual and non-tangible assets such as computer software. The indicator is a measure of investment in telecommunication infrastructure in the country and includes expenditure on initial installations and additions to existing installations where the usage is expected to be over an extended period of time. It excludes expenditure on research and development (R&D), annual fees for operating licences and the use of radio spectrum, and investment in telecommunication software or equipment for internal use.	
<i>Annual investment in fixed-telephone services</i>	
Refers to investment in fixed-telephone services for acquiring and upgrading property and networks within the country. This refers to annual investment in assets related to fixed-telephone networks and the provision of services.	
<i>Annual investment in fixed (wired) broadband services</i>	
Refers to investment in fixed (wired)-broadband services for acquiring and upgrading property and networks within the country. This refers to annual investment in assets related to fixed (wired)-broadband networks and the provision of services.	
<i>Annual investment in mobile communication services</i>	

Refers to investment in mobile services for acquiring and upgrading property and networks within the country. It should include investments made for mobile-broadband services. This refers to annual investment in assets related to mobile communication networks and the provision of services. It should include investment in mobile-broadband networks.
<i>Other annual investment in telecommunication services</i>
Refers to investment in other telecommunication services, such as fixed wireless-broadband, satellite and leased lines.
Total telecommunications revenue
The aggregated revenue includes the total telecommunications services revenue and any other revenue.
Total telecommunication services revenue
The sum of revenue from all telecommunication services (in local currency at current prices). Revenue from all telecommunication services refers to revenue earned from retail fixed-telephone, mobile-cellular, Internet and data services offered by telecommunication operators (both network and virtual, including resellers) offering services within the country during the financial year under review. It includes retail revenues earned from the transmission of TV signals but excludes revenues from TV content creation. Exclude: (i) wholesale revenues (e.g. termination rates), (ii) revenues from device sales and rents, (iii) VAT and excise taxes. Any deviation from the definition should be specified in a note, including clarifications on what TV revenues are included/excluded (e.g. IPTV, cable TV, pay satellite and free-to-air TV).
<i>Total fixed line services revenue</i>
This aggregate value is defined as the sum of Fixed line voice revenue, fixed (wired) internet revenue, Other fixed (wireless) broadband revenue and Other fixed telecommunications services revenue as defined below.
<i>Total fixed line voice revenue</i>
Sum of revenue from retail fixed-telephone services refers to revenue received for the connection (installation) of fixed-telephone services, revenue from recurring charges for subscription to the PSTN and revenue from fixed-telephone calls.
<i>Revenue from fixed-telephone connection charges</i>

Revenue from fixed-telephone connection charges refers to retail revenue received for connection (installation) of fixed- telephone services. This may include charges for transfer or cessation of services.
<i>Revenue from fixed-telephone subscription charges</i>
Revenue from fixed-telephone subscription charges refers to revenue from recurring charges for subscriptions to the PSTN, including Internet access if it cannot be separated from fixed-telephone.
<i>Revenue from fixed-telephone calls</i>
Revenue from fixed-telephone calls refers to retail fixed-telephone revenue received from charges for local, national long-distance and international calls.
<i>Fixed (wired) internet revenue</i>
Revenue from fixed (wired) Internet services refers to retail revenue received from the provision of fixed (wired) Internet services such as subscriptions, traffic and data communication. It excludes the provision of access lines used to connect to fixed (wired) Internet (such as fixed-telephone lines used to access DSL connections). This includes revenue from fixed (wired)-broadband services (previously a separate indicator under ITU code i7311_fb, but for reporting purposes here counted together with any small residual narrowband internet revenue in a single indicator, viz. fixed wired internet).
<i>Other (wireless) broadband services revenue</i>
Revenue from other wireless-broadband services refers to the retail revenue received from the provision of high-speed (at least 256 Kbit/s) data connectivity and related services over a wireless infrastructure other than mobile cellular, such as satellite or terrestrial fixed wireless broadband infrastructures.
<i>Other fixed telecommunication services revenue, including leased lines revenue and fixed value-added telecommunication services</i>
Revenue from leased lines refers to retail revenue received from the provision of leased lines.
Revenue from fixed value-added telecommunication services refers to the retail revenue generated by the telecommunication service sector for fixed value-added

telecommunication services, such as call forwarding, itemized billing, conference calls and voice-message services.
Value-added means additional services beyond the basic telephone service line rental and calls
Other telecommunication revenue refers to any other retail telecommunication services revenue received but not accounted for elsewhere.
<i>Total mobile services revenue (retail)</i>
Revenue from mobile networks refers to retail revenue earned from the provision of mobile-cellular communication services, including all voice, SMS and data (narrowband and broadband) services offered by mobile operators offering services within the country during the financial year under review. Revenues from value added services (e.g. premium SMS) should be included. Data reported should exclude: (i) wholesale revenues (e.g. termination rates), (ii) revenues from device sales and rents, (iii) VAT and excise taxes.
<i>Revenue from mobile voice services</i>
Refers to all mobile-cellular retail revenue from the provision of voice services. It includes voice revenues from national and international calls but excludes revenues from roaming services.
<i>Revenue from outbound mobile cellular roaming</i>
Refers to all mobile-cellular retail roaming revenue from own subscribers roaming abroad. It does not cover foreign mobile subscribers roaming into the country and international calls originating or terminating on the country's mobile networks.
<i>Revenue from mobile data services</i>
Refers to revenue from the provision of non-voice services including messaging (other than SME and MMs), data and Internet services, including M2M/telemetry. It excludes other mobile-cellular services and wireless Internet access services not relating to mobile networks (e.g. satellite or terrestrial fixed wireless technologies).
<i>Revenue from text and multimedia messaging services</i>
Refers to revenue from text messaging and multimedia messaging (SMS and MMS). Some countries may account for this in different ways. For example, some mobile plans include free SMS or MMS that are liable to be classified as voice revenue rather

than mobile-messaging revenue. The treatment of premium messages – where users pay an additional amount over the regular messaging rate – can vary among operators, since they typically share the revenue with a premium-service provider. Operators may also include revenue from international messaging in other categories. The preference is to include all revenue earned by the operator from the provision of messaging services to retail customers.
<i>Other mobile services revenue</i>
Any other mobile revenue, like banking
Total of any other revenue
Sum of interconnection revenue, equipment sale revenue and any other revenue
<i>Interconnection revenues</i>
Revenues from terminating voice and messaging traffic coming from outside the operator's own network
<i>Equipment revenue</i>
Revenues from equipment sales
<i>Any other revenue</i>
Any other revenue which could include wholesale revenues, excluding voice termination (interconnection); IT type services; revenue of a capital nature. E.g. sale of assets or a business.
Telecommunications employment
<i>Persons employed in full-time equivalents</i>
Persons employed in full-time equivalents refers to the total number of persons, in full-time equivalent (FTE) units, employed by telecommunication operators in the country for the provision of telecommunication services, including fixed-telephone, mobile-cellular, Internet and data services. This indicator excludes staff working in broadcasting businesses that offer only traditional broadcasting services. Part-time staff should be expressed in terms of full-time staff equivalents (FTE).
<i>Telecoms employment- female</i>
Persons employed by all telecommunication operators, female should be expressed in terms of full-time staff equivalents.
Telecommunication Subscriptions

<i>Fixed-telephone subscriptions</i>
Fixed-telephone subscriptions refers to the sum of active analogue fixed- telephone lines, voice-over-IP (VoIP) subscriptions, fixed wireless local loop (WLL) subscriptions, ISDN voice-channel equivalents and fixed public payphones. This indicator was previously called Main telephone lines in operation.
<i>Analogue fixed-telephone lines</i>
Analogue fixed-telephone lines refer to the number of active lines connecting subscribers' terminal equipment to the PSTN and which have a dedicated port in the telephone-exchange equipment. It includes all post-paid lines and those prepaid lines that have registered an activity in the past three months. This term is synonymous with the terms 'main station' and 'direct exchange line' (DEL) that are commonly used in telecommunication documents.
<i>VoIP subscriptions</i>
VoIP subscriptions refers to the number of voice-over-Internet protocol (VoIP) fixed-line subscriptions. It is also known as voice over broadband (VoB), and includes VoIP subscriptions through fixed wireless, DSL, cable, fibre optic and other fixed-broadband Internet platforms that provide fixed telephony using IP. It excludes software-based VoIP applications (e.g. VoIP with Skype using computer-to-computer or computer-to-telephone). Those VoIP subscriptions that do not imply a recurrent monthly fee should only be counted if they have generated inbound or outbound traffic within the past three months.
<i>Fixed wireless local loop subscriptions</i>
Fixed wireless local loop (WLL) subscriptions refers to subscriptions provided by licensed fixed-line telephone operators that provide 'last-mile' access to the subscriber using radio technology and where the subscriber's terminal equipment is either stationary or limited in its range of use.
<i>ISDN voice-channel equivalents</i>
ISDN voice-channel equivalents refers to the sum of basic-rate and primary-rate voice-channel equivalents (B-channel equivalents). Basic-rate voice-channel equivalents is the number of basic-rate ISDN subscriptions multiplied by 2, and

primary-rate voice-channel equivalents is the number of primary-rate ISDN subscriptions multiplied by 23 or 30, depending on the standard implemented.
<i>Fixed public payphones</i>
Fixed public payphones refers to payphones that are available to the public using the fixed network.
<i>Mobile cellular subscriptions</i>
Mobile-cellular telephone subscriptions, by post-paid and prepaid Mobile-cellular telephone subscriptions refers to the number of subscriptions to a public mobile-telephone service that provide access to the PSTN using cellular technology.
<i>Prepaid mobile-cellular telephone subscriptions</i>
Refers to the total number of mobile-cellular telephone subscriptions that use prepaid refills. These are subscriptions where, instead of paying an ongoing monthly fee, users purchase blocks of usage time. Although the definition of prepaid subscribers from the ITU definition is 3 month active subscribers (those used at least once in the last three months for making or receiving a call or carrying out a non-voice activity such as sending or reading an SMS or accessing the Internet), some South African operators do not have this metric available but rather count SIMs that have not been disconnected within a 90 day window, reporting, implying that the number may be overstated according to the strict definition. The indicator applies to all mobile-cellular subscriptions that offer voice communications. It excludes subscriptions via data cards or USB modems, subscriptions to public mobile data services, private trunked mobile radio, telepoint, radio paging and telemetry services.
<i>Post-paid mobile-cellular telephone subscriptions</i>
Refers to the total number of mobile-cellular subscriptions, including top up bundles, where subscribers are billed after their use of mobile services, at the end of each month. The post-paid service is provided on the basis of a prior arrangement with a mobile-cellular operator. Typically, the subscriber's contract specifies a limit or allowance of minutes, text messages, etc. The subscriber will be billed at a flat rate for any usage equal to or less than that allowance. Any usage above that limit incurs extra charges. Theoretically, a subscriber in this situation has no limit on use of mobile

services and, as a consequence, unlimited credit. M2M mobile-network subscriptions are included in post-paid subscriptions
<i>M2M mobile-network subscriptions</i>
M2M subscriptions is a subset of post-paid mobile cellular subscriptions and refers to the number of mobile-cellular machine- to-machine subscriptions that are assigned for use in machines and devices (cars, smart meters, consumer electronics) for the exchange of data between networked devices and are not part of a consumer subscription. For instance, SIM-cards in personal navigation devices, smart meters, trains and automobiles should be included. Mobile dongles and tablet subscriptions should be excluded.
<i>Internet and data subscriptions</i>
<i>Fixed broadband subscriptions</i>
Fixed-broadband subscriptions refers to fixed subscriptions to high-speed access to the public Internet (a TCP/IP connection), at downstream speeds equal to, or greater than, 256 Kbit/s. This includes cable modem, DSL, fibre-to-the- home/building, other fixed (wired)-broadband subscriptions, satellite broadband and terrestrial fixed wireless broadband. This total is measured irrespective of the method of payment. It excludes subscriptions that have access to data communications (including the Internet) via mobile-cellular networks. It should include fixed WiMAX and any other fixed wireless technologies. It includes both residential subscriptions and subscriptions for organizations.
<i>DSL Internet subscriptions</i>
Refers to the number of Internet subscriptions using digital subscriber line (DSL) services to access the Internet, at downstream speeds greater than or equal to 256 Kbit/s. DSL is a technology for bringing high-bandwidth information to homes and small businesses over ordinary copper telephone lines. It should exclude very high-speed digital subscriber line (VDSL) subscriptions if these are provided using fibre directly to the premises.
<i>Fibre-to-the-home/building Internet subscriptions</i>
Refers to the number of Internet subscriptions using fibre-to-the-home or fibre-to-the-building, at downstream speeds equal to, or greater than, 256 Kbit/s. This should

include subscriptions where fibre goes directly to the subscriber's premises or fibre-to-the-building subscriptions that terminate no more than 2 metres from an external wall of the building. Fibre-to-the-cabinet and fibre-to-the-node are excluded.
<i>Other fixed (wired) broadband subscriptions</i>
Refers to Internet subscriptions using other fixed (wired) broadband technologies to access the Internet (other than DSL, cable modem, and fibre), at downstream speeds equal to, or greater than, 256 Kbit/s. This includes technologies such as ethernet LAN, and broadband-over-powerline (BPL) communications. Ethernet LAN subscriptions refer to subscriptions using IEEE 802.3 technology. BPL subscriptions refer to subscriptions using broadband-over-powerline services. Users of temporary broadband access (e.g. roaming between PWLAN hotspots), users of WiMAX and those with Internet access via mobile-cellular networks are excluded.
<i>Wireless broadband subscriptions</i>
Wireless-broadband subscriptions refers to the sum of satellite broadband, terrestrial fixed wireless broadband and active mobile-broadband subscriptions to the public Internet. The indicator does not cover fixed (wired) broadband or Wi-Fi subscriptions.
<i>Satellite broadband subscriptions</i>
Satellite broadband subscriptions refers to the number of satellite Internet subscriptions with an advertised download speed of at least 256 Kbit/s. It refers to the retail subscription technology and not the backbone technology.
<i>Terrestrial fixed wireless broadband subscriptions</i>
Terrestrial fixed wireless broadband subscriptions refer to the number of terrestrial fixed wireless Internet subscriptions with an advertised download speed of at least 256 Kbit/s. This includes fixed WiMAX and fixed wireless subscriptions but excludes occasional users at hotspots and Wi-Fi hotspot subscribers. It also excludes mobile-broadband subscriptions where users can access a service throughout the country wherever coverage is available."
<i>Mobile data subscriptions</i>
Number of prepaid and post-paid mobile subscriptions that were used to access the Internet the last 3 months, regardless of speed.

Traffic
<i>Fixed line voice traffic</i>
<i>This aggregated value is the sum of Fixed line traffic (i.e. fixed-to-fixed) and all other fixed line originated traffic (Fixed to mobile and International outgoing).</i>
<i>Fixed line traffic</i>
Refers to domestic fixed-to-fixed telephone traffic, in minutes. Domestic fixed-to-fixed telephone traffic refers to completed local and domestic long-distance fixed-telephone voice traffic. The indicator should be reported as the number of minutes of traffic during the reference quarter. This exclude minutes used for dial-up Internet access.
<i>Local fixed-to-fixed telephone traffic, in minutes</i>
Refers to effective (completed) fixed-telephone line voice traffic exchanged within the local charging area in which the calling station is situated. This is the area within which one subscriber can call another on payment of the local charge (if applicable). This is reported in the number of minutes, which should exclude minutes used for dial-up Internet access.
<i>Long-distance fixed-to-fixed telephone traffic, in minutes</i>
Refers to effective (completed) fixed national long-distance telephone voice traffic exchanged with a station outside the local charging area in which the calling station is situated. This is reported as the number of minutes of traffic. It excludes local calls, calls to mobile networks, calls abroad, and calls to special service numbers such as ISPs for Internet dial-up.
<i>Fixed-to-mobile telephone traffic</i>
Refers to total traffic from all fixed-telephone networks to all mobile-cellular networks within the country.
<i>International incoming and outgoing fixed-telephone traffic</i>
Refers to the sum of international incoming and outgoing fixed-telephone voice traffic.
<i>International outgoing fixed-telephone traffic, in minutes</i>
Refers to effective (completed) fixed-telephone voice traffic originating in a given country to destinations outside that country. This should include traffic to mobile

phones outside the country. This is reported in number of minutes of traffic. It excludes calls originating in other countries. It should include VoIP traffic.
<i>International incoming fixed-telephone traffic, in minutes</i>
Refers to effective (completed) fixed-telephone voice traffic originating outside the country with a destination inside the country, irrespective of whether the call was from a fixed or mobile subscriber. It excludes minutes of calls terminating in other countries, but includes VoIP traffic
<i>Mobile voice traffic</i>
<i>This aggregated value is the sum of Total national mobile traffic, as defined below, and International outgoing from mobile.</i>
<i>Total national mobile traffic</i>
Domestic mobile-telephone traffic refers to the total number of minutes of calls made by mobile subscribers within a country (including minutes to fixed-telephone and minutes to mobile-phone subscribers).
<i>Outgoing mobile traffic to same mobile network</i>
Refers to the number of minutes of calls made by mobile subscribers to the same mobile network (within the country). This refers to the number of minutes originating on mobile networks and terminating on the same mobile network (on-net). It does not cover minutes of calls from mobile to fixed or mobile to other mobile networks.
<i>Mobile to other mobile networks</i>
Outgoing mobile traffic to other mobile networks, in minutes refers to the number of minutes of calls made by mobile subscribers to other mobile networks (within the country). The indicator refers to the number of minutes originating on mobile networks and terminating on different domestic mobile networks (off-net). It does not cover minutes of calls from mobile to fixed or mobile to the same mobile networks.
<i>Outgoing mobile traffic to fixed networks</i>
Refers to the number of minutes of calls made from mobile-cellular networks to fixed-line telephone networks within the country. The indicator refers to the number of minutes originating on mobile networks and terminating on fixed-line telephone networks within the country.
<i>International outgoing from mobile</i>

Outgoing mobile traffic to international refers to the number of mobile minutes originating in a country to any destinations outside that country.
<i>Incoming international traffic to mobile network</i>
Refers to the number of incoming minutes (fixed and mobile) received by mobile networks originating in another country.
<i>Mobile data traffic</i>
Mobile data traffic (within the country) refers to data traffic originated within the country from mobile networks. Download and upload traffic should be added up and reported together. Traffic should be measured at the end-user access point. Wholesale and walled-garden traffic should be excluded. The traffic should be reported in terabytes.
<i>SMS traffic</i>
SMS sent refers to the total number of mobile short-message service (SMS) messages sent, both to national and international destinations. This should exclude messages sent from computers to mobile handsets or to other computers.
<i>SMS international traffic</i>
SMS international refers to the total number of mobile short-message service (SMS) messages sent to international destinations. This should exclude messages sent from computers to mobile handsets or to other computers.
Population coverage
<i>3G population coverage</i>
Percentage of the population covered by at a 3G mobile network refers to the percentage of inhabitants that are within range of a 3G mobile-cellular signal, irrespective of whether or not they are subscribers. This is calculated by dividing the number of inhabitants that are covered by a 3G mobile-cellular signal by the total population and multiplying by 100.
<i>4G/LTE etc. population coverage</i>
Percentage of the population covered by a 4G/LTE mobile network refers to the percentage of inhabitants that are within range of a 4G/LTE mobile-cellular signal, irrespective of whether or not they are subscribers. This is calculated by dividing the

number of inhabitants that are covered by a 4G/LTE mobile-cellular signal by the total population and multiplying by 100. Note that all LTE variants are included.
Internet bandwidth
International Internet bandwidth
<i>International outgoing Internet bandwidth</i>
Refers to the total outgoing used capacity of international Internet bandwidth, in Mbit/s. This is measured as the sum of outgoing (uplink) capacity of all Internet exchanges offering international bandwidth.
<i>International incoming Internet bandwidth</i>
Refers to the total incoming used capacity of international Internet bandwidth, in Mbit/s. This is measured as the sum of incoming (downlink) capacity of all Internet exchanges offering international bandwidth.
<i>Smartphone subscriptions</i>
A smartphone is a mobile phone with advanced features: it has Wi-Fi connectivity, web browsing, capabilities, a high-resolution touchscreen display and the ability to use apps. The majority use one of the following mobile operating systems: Android, Symbian, iOS, Blackberry OS and Windows Mobile.
Fixed post-paid local telephone services prices
<i>Installation fee for residential telephone service</i>
Installation fee for residential telephone service refers to the one-off charge involved in applying for a basic residential post-paid fixed-telephone service. Taxes should be included. If not included, it should be specified in a note including the applicable tax rate.
<i>Monthly subscription for residential telephone service</i>
Monthly subscription for residential telephone service refers to the recurring fixed charge for subscribing to a residential post-paid fixed-telephone service. The charge should cover the rental of the line but not the rental of the terminal (e.g. telephone set). If the rental charge includes any allowance for free or reduced rate call units, this should be indicated in the note. Taxes should be included. If not included, it should be specified in a note including the applicable tax rate.
<i>Price of a three-minute local call to a fixed-telephone line, peak rate</i>

Price of a three-minute local call (peak-rate) to a fixed-telephone line refers to the price of a three-minute peak local call from a residential fixed-telephone line, including any call set-up charges, within the same exchange area using the subscriber's own terminal (i.e. not from a public telephone). Taxes should be included. If not included, it should be specified in a note including the applicable tax rate.
<i>Price of a three-minute local call to a fixed-telephone line, off-peak rate</i>
Price of a three-minute local call to a fixed-telephone line refers to the price of a three-minute off-peak local call from a residential fixed-telephone line, including any call set-up charges, within the same exchange area using the subscriber's own terminal (i.e. not from a public telephone). Taxes should be included. If not included, it should be specified in a note including the applicable tax rate.
Mobile-cellular prepaid prices
<i>Mobile-cellular prepaid-price of a one-minute local call (peak, on-net)</i>
Refers to the price per minute of a peak prepaid call from a mobile-cellular telephone with a prepaid subscription to another subscriber in the same network. Taxes should be included. If not included, it should be specified in a note including the applicable tax rate.
<i>Mobile-cellular prepaid-price of a one-minute local call (off-peak, on-net)</i>
Refers to the price per minute of a prepaid call from a mobile-cellular telephone with a prepaid subscription made to the same mobile-cellular network during off-peak time. Off-peak refers to the cheapest rate before mid-night. If the only off-peak period is after mid-night, the peak price should be used. Taxes should be included. If not included, it should be specified in a note including the applicable tax rate.
<i>Mobile-cellular prepaid-price of SMS (on-net)</i>
Mobile-cellular prepaid – price of SMS refers to the price of sending a short-message service (SMS) message from a mobile-cellular telephone with a prepaid subscription to a mobile-cellular number of the same network (on-net). Taxes should be included. If not included, it should be specified in a note including the applicable tax rate.
ICT Sector Black Economic Empowerment Measures
<i>Telecoms employment -Black Top Management</i>

Persons employed by all telecommunication operators, Black Top Management, should be expressed in terms of full-time staff equivalents. This should include Exco and other Executives.
<i>Procurement Spend from all suppliers</i>
Total spend on all goods and services procured by an Entity.
<i>Procurement Spend from all suppliers based on the B-BBEE Procurement Recognition Levels</i>
Total spend on all goods and services procured by an Entity based on the B-BBEE Procurement Recognition Levels.
<i>Number of Schools connected based on obligations imposed by ICASA</i>
Total number of Schools connected based on obligations imposed by ICASA to operators.

<i>Total fixed line voice revenue</i>
Sum of revenue from retail fixed-telephone services refers to revenue received for the connection (installation) of fixed-telephone services, revenue from recurring charges for subscription to the PSTN and revenue from fixed-telephone calls.
<i>Revenue from fixed-telephone connection charges</i>
Revenue from fixed-telephone connection charges refers to retail revenue received for connection (installation) of fixed- telephone services. This may include charges for transfer or cessation of services.
<i>Revenue from fixed-telephone subscription charges</i>
Revenue from fixed-telephone subscription charges refers to revenue from recurring charges for subscriptions to the PSTN, including Internet access if it cannot be separated from fixed-telephone.
<i>Revenue from fixed-telephone calls</i>
Revenue from fixed-telephone calls refers to retail fixed-telephone revenue received from charges for local, national long-distance and international calls.
<i>Fixed (wired) internet revenue</i>
Revenue from fixed (wired) Internet services refers to retail revenue received from the provision of fixed (wired) Internet services such as subscriptions, traffic and data

communication. It excludes the provision of access lines used to connect to fixed (wired) Internet (such as fixed-telephone lines used to access DSL connections). This includes revenue from fixed (wired)-broadband services (previously a separate indicator under ITU code i7311_fb, but for reporting purposes here counted together with any small residual narrowband internet revenue in a single indicator, viz. fixed wired internet).
<i>Other (wireless) broadband services revenue</i>
Revenue from other wireless-broadband services refers to the retail revenue received from the provision of high-speed (at least 256 Kbit/s) data connectivity and related services over a wireless infrastructure other than mobile cellular, such as satellite or terrestrial fixed wireless broadband infrastructures.
<i>Other fixed telecommunication services revenue, including leased lines revenue and fixed value-added telecommunication services</i>
Revenue from leased lines refers to retail revenue received from the provision of leased lines.
Revenue from fixed value-added telecommunication services refers to the retail revenue generated by the telecommunication service sector for fixed value-added telecommunication services, such as call forwarding, itemized billing, conference calls and voice-message services.
Value-added means additional services beyond the basic telephone service line rental and calls
Other telecommunication revenue refers to any other retail telecommunication services revenue received but not accounted for elsewhere.
<i>Total mobile services revenue (retail)</i>
Revenue from mobile networks refers to retail revenue earned from the provision of mobile-cellular communication services, including all voice, SMS and data (narrowband and broadband) services offered by mobile operators offering services within the country during the financial year under review. Revenues from value added services (e.g. premium SMS) should be included. Data reported should exclude: (i) wholesale revenues (e.g. termination rates), (ii) revenues from device sales and rents, (iii) VAT and excise taxes.

<i>Revenue from mobile voice services</i>
Refers to all mobile-cellular retail revenue from the provision of voice services. It includes voice revenues from national and international calls but excludes revenues from roaming services.
<i>Revenue from outbound mobile cellular roaming</i>
Refers to all mobile-cellular retail roaming revenue from own subscribers roaming abroad. It does not cover foreign mobile subscribers roaming into the country and international calls originating or terminating on the country's mobile networks.
<i>Revenue from mobile data services</i>
Refers to revenue from the provision of non-voice services including messaging (other than SME and MMs), data and Internet services, including M2M/telemetry. It excludes other mobile-cellular services and wireless Internet access services not relating to mobile networks (e.g. satellite or terrestrial fixed wireless technologies).
<i>Revenue from text and multimedia messaging services</i>
Refers to revenue from text messaging and multimedia messaging (SMS and MMS). Some countries may account for this in different ways. For example, some mobile plans include free SMS or MMS that are liable to be classified as voice revenue rather than mobile-messaging revenue. The treatment of premium messages – where users pay an additional amount over the regular messaging rate – can vary among operators, since they typically share the revenue with a premium-service provider. Operators may also include revenue from international messaging in other categories. The preference is to include all revenue earned by the operator from the provision of messaging services to retail customers.
<i>Other mobile services revenue</i>
Any other mobile revenue, like banking
Total of any other revenue
Sum of interconnection revenue, equipment sale revenue and any other revenue
<i>Interconnection revenues</i>
Revenues from terminating voice and messaging traffic coming from outside the operator's own network

<i>Equipment revenue</i>
Revenues from equipment sales
<i>Any other revenue</i>
Any other revenue which could include wholesale revenues, excluding voice termination (interconnection); IT type services; revenue of a capital nature. E.g. sale of assets or a business.
<i>Telecommunications employment</i>
<i>Persons employed in full-time equivalents</i>
Persons employed in full-time equivalents refers to the total number of persons, in full-time equivalent (FTE) units, employed by telecommunication operators in the country for the provision of telecommunication services, including fixed-telephone, mobile-cellular, Internet and data services. This indicator excludes staff working in broadcasting businesses that offer only traditional broadcasting services. Part-time staff should be expressed in terms of full-time staff equivalents (FTE).
<i>Telecoms employment- female</i>
Persons employed by all telecommunication operators, female should be expressed in terms of full-time staff equivalents.
<i>Telecommunication Subscriptions</i>
<i>Fixed-telephone subscriptions</i>
Fixed-telephone subscriptions refers to the sum of active analogue fixed- telephone lines, voice-over-IP (VoIP) subscriptions, fixed wireless local loop (WLL) subscriptions, ISDN voice-channel equivalents and fixed public payphones. This indicator was previously called Main telephone lines in operation.
<i>Analogue fixed-telephone lines</i>
Analogue fixed-telephone lines refer to the number of active lines connecting subscribers' terminal equipment to the PSTN and which have a dedicated port in the telephone-exchange equipment. It includes all post-paid lines and those prepaid lines that have registered an activity in the past three months. This term is synonymous with the terms 'main station' and 'direct exchange line' (DEL) that are commonly used in telecommunication documents.
<i>VoIP subscriptions</i>

VoIP subscriptions refers to the number of voice-over-Internet protocol (VoIP) fixed-line subscriptions. It is also known as voice over broadband (VoB), and includes VoIP subscriptions through fixed wireless, DSL, cable, fibre optic and other fixed-broadband Internet platforms that provide fixed telephony using IP. It excludes software-based VoIP applications (e.g. VoIP with Skype using computer-to-computer or computer-to-telephone). Those VoIP subscriptions that do not imply a recurrent monthly fee should only be counted if they have generated inbound or outbound traffic within the past three months.
<i>Fixed wireless local loop subscriptions</i>
Fixed wireless local loop (WLL) subscriptions refers to subscriptions provided by licensed fixed-line telephone operators that provide 'last-mile' access to the subscriber using radio technology and where the subscriber's terminal equipment is either stationary or limited in its range of use.
<i>ISDN voice-channel equivalents</i>
ISDN voice-channel equivalents refers to the sum of basic-rate and primary-rate voice-channel equivalents (B-channel equivalents). Basic-rate voice-channel equivalents is the number of basic-rate ISDN subscriptions multiplied by 2, and primary-rate voice-channel equivalents is the number of primary-rate ISDN subscriptions multiplied by 23 or 30, depending on the standard implemented.
<i>Fixed public payphones</i>
Fixed public payphones refers to payphones that are available to the public using the fixed network.
<i>Mobile cellular subscriptions</i>
Mobile-cellular telephone subscriptions, by post-paid and prepaid Mobile-cellular telephone subscriptions refers to the number of subscriptions to a public mobile-telephone service that provide access to the PSTN using cellular technology.
<i>Prepaid mobile-cellular telephone subscriptions</i>
Refers to the total number of mobile-cellular telephone subscriptions that use prepaid refills. These are subscriptions where, instead of paying an ongoing monthly fee, users purchase blocks of usage time. Although the definition of prepaid subscribers from the ITU definition is 3 month active subscribers (those used at

<p>least once in the last three months for making or receiving a call or carrying out a non-voice activity such as sending or reading an SMS or accessing the Internet), some South African operators do not have this metric available but rather count SIMs that have not been disconnected within a 90 day window, reporting, implying that the number may be overstated according to the strict definition. The indicator applies to all mobile-cellular subscriptions that offer voice communications. It excludes subscriptions via data cards or USB modems, subscriptions to public mobile data services, private trunked mobile radio, telepoint, radio paging and telemetry services.</p>
<p><i>Post-paid mobile-cellular telephone subscriptions</i></p>
<p>Refers to the total number of mobile-cellular subscriptions, including top up bundles, where subscribers are billed after their use of mobile services, at the end of each month. The post-paid service is provided on the basis of a prior arrangement with a mobile- cellular operator. Typically, the subscriber's contract specifies a limit or allowance of minutes, text messages, etc. The subscriber will be billed at a flat rate for any usage equal to or less than that allowance. Any usage above that limit incurs extra charges. Theoretically, a subscriber in this situation has no limit on use of mobile services and, as a consequence, unlimited credit. M2M mobile-network subscriptions are included in post-paid subscriptions</p>
<p><i>M2M mobile-network subscriptions</i></p>
<p>M2M subscriptions is a subset of post-paid mobile cellular subscriptions and refers to the number of mobile-cellular machine- to-machine subscriptions that are assigned for use in machines and devices (cars, smart meters, consumer electronics) for the exchange of data between networked devices and are not part of a consumer subscription. For instance, SIM-cards in personal navigation devices, smart meters, trains and automobiles should be included. Mobile dongles and tablet subscriptions should be excluded.</p>
<p><i>Internet and data subscriptions</i></p>
<p><i>Fixed broadband subscriptions</i></p>
<p>Fixed-broadband subscriptions refers to fixed subscriptions to high-speed access to the public Internet (a TCP/IP connection), at downstream speeds equal to, or</p>

greater than, 256 Kbit/s. This includes cable modem, DSL, fibre-to-the-home/building, other fixed (wired)-broadband subscriptions, satellite broadband and terrestrial fixed wireless broadband. This total is measured irrespective of the method of payment. It excludes subscriptions that have access to data communications (including the Internet) via mobile-cellular networks. It should include fixed WiMAX and any other fixed wireless technologies. It includes both residential subscriptions and subscriptions for organizations.
<i>DSL Internet subscriptions</i>
Refers to the number of Internet subscriptions using digital subscriber line (DSL) services to access the Internet, at downstream speeds greater than or equal to 256 Kbit/s. DSL is a technology for bringing high-bandwidth information to homes and small businesses over ordinary copper telephone lines. It should exclude very high-speed digital subscriber line (VDSL) subscriptions if these are provided using fibre directly to the premises.
<i>Fibre-to-the-home/building Internet subscriptions</i>
Refers to the number of Internet subscriptions using fibre-to-the-home or fibre-to-the-building, at downstream speeds equal to, or greater than, 256 Kbit/s. This should include subscriptions where fibre goes directly to the subscriber's premises or fibre-to-the-building subscriptions that terminate no more than 2 metres from an external wall of the building. Fibre-to-the-cabinet and fibre-to-the-node are excluded.
<i>Other fixed (wired) broadband subscriptions</i>
Refers to Internet subscriptions using other fixed (wired) broadband technologies to access the Internet (other than DSL, cable modem, and fibre), at downstream speeds equal to, or greater than, 256 Kbit/s. This includes technologies such as ethernet LAN, and broadband-over-powerline (BPL) communications. Ethernet LAN subscriptions refer to subscriptions using IEEE 802.3 technology. BPL subscriptions refer to subscriptions using broadband-over-powerline services. Users of temporary broadband access (e.g. roaming between PWLAN hotspots), users of WiMAX and those with Internet access via mobile-cellular networks are excluded.
<i>Wireless broadband subscriptions</i>

Wireless-broadband subscriptions refers to the sum of satellite broadband, terrestrial fixed wireless broadband and active mobile-broadband subscriptions to the public Internet. The indicator does not cover fixed (wired) broadband or Wi-Fi subscriptions.
<i>Satellite broadband subscriptions</i>
Satellite broadband subscriptions refers to the number of satellite Internet subscriptions with an advertised download speed of at least 256 Kbit/s. It refers to the retail subscription technology and not the backbone technology.
<i>Terrestrial fixed wireless broadband subscriptions</i>
Terrestrial fixed wireless broadband subscriptions refer to the number of terrestrial fixed wireless Internet subscriptions with an advertised download speed of at least 256 Kbit/s. This includes fixed WiMAX and fixed wireless subscriptions but excludes occasional users at hotspots and Wi-Fi hotspot subscribers. It also excludes mobile-broadband subscriptions where users can access a service throughout the country wherever coverage is available."
<i>Mobile data subscriptions</i>
Number of prepaid and post-paid mobile subscriptions that were used to access the Internet the last 3 months, regardless of speed.

Traffic
<i>Fixed line voice traffic</i>
<i>This aggregated value is the sum of Fixed line traffic (i.e. fixed-to-fixed) and all other fixed line originated traffic (Fixed to mobile and International outgoing).</i>
<i>Fixed line traffic</i>
Refers to domestic fixed-to-fixed telephone traffic, in minutes. Domestic fixed-to-fixed telephone traffic refers to completed local and domestic long-distance fixed-telephone voice traffic. The indicator should be reported as the number of minutes of traffic during the reference quarter. This exclude minutes used for dial-up Internet access.
<i>Local fixed-to-fixed telephone traffic, in minutes</i>

Refers to effective (completed) fixed-telephone line voice traffic exchanged within the local charging area in which the calling station is situated. This is the area within which one subscriber can call another on payment of the local charge (if applicable). This is reported in the number of minutes, which should exclude minutes used for dial-up Internet access.
<i>Long-distance fixed-to-fixed telephone traffic, in minutes</i>
Refers to effective (completed) fixed national long-distance telephone voice traffic exchanged with a station outside the local charging area in which the calling station is situated. This is reported as the number of minutes of traffic. It excludes local calls, calls to mobile networks, calls abroad, and calls to special service numbers such as ISPs for Internet dial-up.
<i>Fixed-to-mobile telephone traffic</i>
Refers to total traffic from all fixed-telephone networks to all mobile-cellular networks within the country.
<i>International incoming and outgoing fixed-telephone traffic</i>
Refers to the sum of international incoming and outgoing fixed-telephone voice traffic.
<i>International outgoing fixed-telephone traffic, in minutes</i>
Refers to effective (completed) fixed-telephone voice traffic originating in a given country to destinations outside that country. This should include traffic to mobile phones outside the country. This is reported in number of minutes of traffic. It excludes calls originating in other countries. It should include VoIP traffic.
<i>International incoming fixed-telephone traffic, in minutes</i>
Refers to effective (completed) fixed-telephone voice traffic originating outside the country with a destination inside the country, irrespective of whether the call was from a fixed or mobile subscriber. It excludes minutes of calls terminating in other countries, but includes VoIP traffic
<i>Mobile voice traffic</i>
<i>This aggregated value is the sum of Total national mobile traffic, as defined below, and International outgoing from mobile.</i>
<i>Total national mobile traffic</i>

Domestic mobile-telephone traffic refers to the total number of minutes of calls made by mobile subscribers within a country (including minutes to fixed-telephone and minutes to mobile-phone subscribers).
<i>Outgoing mobile traffic to same mobile network</i>
Refers to the number of minutes of calls made by mobile subscribers to the same mobile network (within the country). This refers to the number of minutes originating on mobile networks and terminating on the same mobile network (on-net). It does not cover minutes of calls from mobile to fixed or mobile to other mobile networks.
<i>Mobile to other mobile networks</i>
Outgoing mobile traffic to other mobile networks, in minutes refers to the number of minutes of calls made by mobile subscribers to other mobile networks (within the country). The indicator refers to the number of minutes originating on mobile networks and terminating on different domestic mobile networks (off-net). It does not cover minutes of calls from mobile to fixed or mobile to the same mobile networks.
<i>Outgoing mobile traffic to fixed networks</i>
Refers to the number of minutes of calls made from mobile-cellular networks to fixed-line telephone networks within the country. The indicator refers to the number of minutes originating on mobile networks and terminating on fixed-line telephone networks within the country.
<i>International outgoing from mobile</i>
Outgoing mobile traffic to international refers to the number of mobile minutes originating in a country to any destinations outside that country.
<i>Incoming international traffic to mobile network</i>
Refers to the number of incoming minutes (fixed and mobile) received by mobile networks originating in another country.
<i>Mobile data traffic</i>
Mobile data traffic (within the country) refers to data traffic originated within the country from mobile networks. Download and upload traffic should be added up and reported together. Traffic should be measured at the end-user access point.

Wholesale and walled-garden traffic should be excluded. The traffic should be reported in terabytes.
Population coverage
<i>3G population coverage</i>
Percentage of the population covered by at a 3G mobile network refers to the percentage of inhabitants that are within range of a 3G mobile-cellular signal, irrespective of whether or not they are subscribers. This is calculated by dividing the number of inhabitants that are covered by a 3G mobile-cellular signal by the total population and multiplying by 100.
<i>4G/LTE etc. population coverage</i>
Percentage of the population covered by a 4G/LTE mobile network refers to the percentage of inhabitants that are within range of a 4G/LTE mobile-cellular signal, irrespective of whether or not they are subscribers. This is calculated by dividing the number of inhabitants that are covered by a 4G/LTE mobile-cellular signal by the total population and multiplying by 100. Note that all LTE variants are included.
Internet bandwidth
International Internet bandwidth
<i>International outgoing Internet bandwidth</i>
Refers to the total outgoing used capacity of international Internet bandwidth, in Mbit/s. This is measured as the sum of outgoing (uplink) capacity of all Internet exchanges offering international bandwidth.
<i>International incoming Internet bandwidth</i>
Refers to the total incoming used capacity of international Internet bandwidth, in Mbit/s. This is measured as the sum of incoming (downlink) capacity of all Internet exchanges offering international bandwidth.
BRICS
the acronym coined for an association of five major emerging national economies: Brazil, Russia, India, China and South Africa
<i>Virtual post users</i>

Is a digital mailbox post service that you access via any computer, tablet, or smartphone. Receive, forward, pick up, shred, or discard mail and packages. It allows you to manage your postal mail and packages with our smartphone app or online anytime, from anywhere

Appendix 3: Aggregated data from ICASA questionnaires

The table below lists the aggregated figures from the three ICASA questionnaires to the electronic communications licensees, the TV broadcasting licensees, and the postal services operators, for the period of 1 October 2021 -30th September 2022. For definitions, please refer to the Appendix 2 above, and for more clarification please refer to the notes accompanying the associated figures in the report.

Telecommunication data used	
Total revenue	R208 145 121 928
Total fixed line revenue	R5 572 230 285
Revenue from retail fixed-telephone services	R105 777 187
Revenue from fixed-telephone subscription charges	R2 743 241 716
Revenue from fixed-telephone calls	R2 723 211 382
Total Fixed Internet and data revenue	R20 915 629 887
Fixed Internet revenue (R)	R4 005 275 325
Revenue from fixed (wired)-broadband services	R12 782 037 634
Other wireless-broadband services revenue	R1 349 787 213
Other telecommunication services revenue, including leased lines revenue and fixed value-added telecommunication services	R2 778 529 716
Total mobile services revenue (Rm)	R121 997 905 960
Revenue from voice services	R33 364 856 049
Revenue from outbound roaming (R)	R2 723 572 737
Revenue from mobile data services	R62 234 431 138
Revenue from text and multimedia messaging services	R3 636 696 919
Prepaid revenue mobile voice	R24 740 085 157
Prepaid revenue mobile data	R32 846 805 636
Prepaid revenue mobile messaging	R798 812 827
Other mobile services revenue	R20 038 349 117
Total of any other revenue	R59 659 355 796
Interconnection revenues	R5 111 084 136
Equipment revenue	R32 219 564 583
Any other revenue	R22 328 707 077
Total telecommunication investment	R39 798 191 043
Annual investment in fixed-telephone services	R12 446 164
Annual investment in fixed (wired)-broadband services	R4 952 546 626
Annual investment in mobile communication services	R15 521 568 898
Infrastructure	R6 992 336 135
Expansion	R7 684 424 456
Maintenance	R2 322 795 887

Other annual investment in telecommunication services	R2 312 072 877
Fixed line subscriptions	1 461 046
Analogue fixed-telephone lines	749 269
VoIP subscriptions	342 474
Fixed wireless local loop subscriptions	254
ISDN voice-channel equivalents	366 889
Fixed public payphone	2 160
Mobile cellular subscriptions	106 800 158
Prepaid mobile-cellular telephone subscriptions	89 297 294
Prepaid mobile-cellular telephone subscriptions (Urban area)	83 784 916
Prepaid mobile-cellular telephone subscriptions (Rural area)	5 512 378
Postpaid mobile-cellular telephone subscriptions	17 502 864
Postpaid mobile-cellular telephone subscriptions (Urban area)	16 419 145
Postpaid mobile-cellular telephone subscriptions (Rural area)	1 083 719
Mobile Cellular Active Subscriptions (Active for more than 90 Days)	90 459 607
M2M mobile-network subscriptions	11 467 830
Fixed broadband subscriptions	1 652 380
DSL Internet subscriptions	264 241
Fibre-to-the-home/building Internet subscriptions	1 365 429
Other fixed (wired)-broadband subscriptions	22 710
Wireless-broadband subscriptions	227 382
Satellite broadband subscriptions	16 398
Terrestrial fixed wireless broadband subscriptions	210 984
Active mobile broadband subscriptions	79 366 826
Standard mobile-broadband subscriptions	57 272 903
Dedicated mobile-broadband subscriptions	22 093 923
Mobile data users	37 924 646
Highlights usage of ICT networks in terms of traffic	
Fixed line traffic	3 803 224 410
Local fixed-to-fixed telephone traffic, in minutes	2 117 615 933
Long-distance fixed-to-fixed telephone traffic, in minutes	1 685 608 477
Fixed-to-mobile telephone traffic	7 769 724 517
International incoming and outgoing fixed-telephone traffic	225 111 427
International outgoing fixed-telephone traffic, in minutes	135 878 119
International incoming fixed-telephone traffic, in minutes	89 233 309
Total national mobile traffic	94 798 336 472
Outgoing mobile traffic to same mobile network	70 514 344 403
Mobile to other mobile networks	21 252 615 562
Mobile to fixed	3 031 376 507
Mobile data traffic	58 507 200
International Internet bandwidth (Mbps) capacity	2 140 122

International outgoing Internet bandwidth	828 379
International incoming Internet bandwidth	1 311 743
Smartphone subscriptions	73 883 537
Smartphone subscriptions	73 883 537
Batter and Generator used when there is no electricity (Loadshedding) and Revenue spend during this period	
Total Number of batteries	98 733
Total Number of Generators	16 660
Total Amount spent on batteries	R2 652 130 129
Total Amount spent on Generators	R873 574 647
ICT Sector Black Economic Empowerment Measures	
Telecommunication employment -Total	32 280
Telecommunication employment- female	11 943
Telecommunication employment- Disabled	315
Telecommunication employment- Unskilled	507
Telecommunication employment- Semi skilled	4 701
Telecommunication employment- skilled	23 473
Telecoms employment- Top Management(EXCO Members)	299
Telecoms employment- Black Top Management(EXCO Members)	81
Telecoms employment- Black Top Female Management(EXCO Members)	40
Procurement Spend from all suppliers	R166 088 114 064
Procurement Spend paid to suppliers based on the B-BBEE Procurement Recognition Levels	R140 656 257 045
Number of Schools connected based on obligations imposed by ICASA	6 088
Broadcasting data used	
Total revenue	R41 202 864 454
Broadcasting Advertising Revenue	R5 837 998 968
Broadcasting Subscriptions Revenue	R31 877 590 486
Revenue from Broadcasting Promotions (with flighting code).	R1 510 223 894
Revenue from sponsorships	R773 573 946
Revenue from Government or State grant	R118 083 659
Revenue from donations	R9 423 246
Revenue from infomercials	R7 258 655
Revenue from membership fees	R3 821 502
Total of any other revenue	R1 064 890 100
Itemised expenditure	R16 438 942 257
Subscriber and registered viewership numbers	8 305 578
Number of Pay TV subscribers	8 305 578
ICT Sector Economic Empowerment Measures	
Broadcasting employment -Total	3 562
Broadcasting employment- female	1 832

Broadcasting employment- Disabled	108
Broadcasting employment- Unskilled	95
Broadcasting employment- Semi skilled	537
Broadcasting employment- skilled	2 629
Broadcasting employment- Top Management (EXCO members)	82
Broadcasting employment- Black Top Management (EXCO members)	56
Broadcasting employment- Black Top Female Management (EXCO members)	25
Procurement Spend from all suppliers	R3 452 184 689
Procurement Spend paid to suppliers based on the B-BBEE Procurement Recognition Levels	R1 661 978 084
Total Number of Television (stations and distributors)	21 336 094
Number of Digital Satellite Stations	52
Number of Digital Terrestrial Stations	86
Number of Analogue Terrestrial Stations	4
Number of Signal Distributors	8
Number of set-top boxes	21 335 805
Number of Content Distributors	139
Investment	R22 240 561
Infrastructure	R4 570 274
Expansion	R2 748 062
Maintenance	R3 267 934
Others	R11 654 291
Total expenditure on Local independent productions (In Rand)	R2 649 813 719
Total expenditure on international Independent productions (In Rand)	R643 788 209
Total expenditure on broadcaster productions (In Rand)	R118 543 116
Postal services data used	
Total SAPO revenue	R5 533 524 738
Services rendered - Postal	R1 694 084 000
Services rendered - Agency and money transfer	R1 256 295 000
Services rendered - Courier	R2 567 628 952
Total of any other revenue	R15 516 786
Postal employment -Total	16 792
Postal employment- female	7 960
Postal employment- Disabled	31
Postal employment- Unskilled	823
Postal employment- Semi skilled	13 289
Postal employment- skilled	3 978
Postal employment- Top Management (EXCO members)	29
Postal employment- Black Top Management (EXCO members)	15
Postal employment- Black Top Female Management (EXCO members)	6
Procurement Spend from all suppliers	R311 501 157

Procurement Spend paid to suppliers based on the B-BBEE Procurement Recognition Levels	R47 537 462
Letter delivery services (Registered letters)	320 275 834
Letters: Domestic service and international outbound (International Mail Centre Volumes)	432 071
Letters: Domestic service and international outbound (Local Volumes)	319 843 763
Parcel delivery services	15 369 901
Parcel: Domestic service and international outbound (International Mail Centre Volumes)	174 373
Parcel: Domestic service and international outbound (Local Volumes)	15 195 528
Express delivery services (EMS)	2 944 066
Express: Domestic service and international outbound (International Mail Centre Volumes)	4 386
Express: Domestic service and international outbound (Local Volumes)	2 939 680
Number of PO Boxes	3 669 390
Number of PO Boxes rented	2 043 070
Investment	R72 011 916
Infrastructure	R71 313 535
Expansion	R0
Maintenance	R698 381
Others	R0

Source: ICASA Telecommunications, TV Broadcasting and Postal Questionnaires, January 2023.