

Section J: Information and Communication Technology

Introduction

The 2019 Kenya Population and Housing Census offered crucial insights into the state of Information and Communication Technologies (ICT) penetration in the country as of 2019. The Census captured a broad range of ICT indicators, focusing on the proportion of individuals and households that utilized various technologies and platforms. These indicators included individual ownership and usage of mobile phones, as well as sharing of mobile phones. The Census also monitored computer usage among individuals, along with the utilization of e-commerce and the internet. At the household level, the census covered the ownership of stand-alone radios, internet connectivity, functional analogue televisions, computers, laptops, and tablets.

47.3%

The rate of mobile phone ownership for the population aged three years and above in Kenya, according to the 2019 Census

Definition of Key Terms and Concepts

Households with Analog TV: These households possess a television but have not transitioned to digital since the digital migration. Consequently, their TVs are not connected to a set-top box or decoder, preventing them from viewing digital programmes.

Computer Use: Refers to individuals who use or own a desktop computer, a laptop computer or a tablet or similar handheld computer in the last three months. It does not include equipment with some embedded computing abilities, such as smart TV sets, and devices with telephony as a main function, such as mobile or smartphones.

Internet Use: Pertains to individuals who have accessed the internet from any location using any device within the last three months. There are various modes through which the internet can be accessed.

Fixed Internet at Home: This includes stable connections within a household provided through technologies such as Fibre to the Home (FttH), cable modem, Integrated Services Digital Network (ISDN), Digital Subscriber Line (DSL), WIMAX, and fixed CDMA. Additionally, some households may utilize satellite connectivity which operates via radio waves, incorporating equipment like the Very Small Aperture Terminal (VSAT) dish antenna.

Mobile Internet: This mode of access involves portable devices, including mobile phones, USB wireless modems, tablets, and similar gadgets. Thus, internet use encompasses a range of technologies and devices that facilitate online connectivity, ranging from fixed home setups to mobile solutions.

Functional Television: Refers to a television (TV) that is a standalone device designed to receive broadcast signals through various common methods, including over-the-air, cable, and satellite transmissions. A functional TV is one that is in use.

Mobile Phone Ownership: An individual is considered to own a mobile phone if they possess a cellular device equipped with at least one active SIM card for personal use. This includes devices provided by employers for potential personal use, such as making private calls or accessing the internet, as well as phones used personally even if not registered under the user›s name. Those with only active SIM cards but without a mobile device are excluded. The reference period for this definition spans the previous three months.

Mobile Phone Use: Refers to individuals who have used a mobile phone within the past three months, irrespective of ownership.

Mobile phone use without owning/ Mobile Sharers: Refers to individuals who utilized a mobile phone in the previous three months without owning one. This encompasses those who borrow a handset or have their own SIM card but use someone else›s device to access mobile services.

Searched and bought online (E- commerce Users): Refers to individuals who successfully bought goods and services online in the last three months.

Searched and bought elsewhere (Potential E-commerce Users): These individuals have searched for goods and services online but opted to make their purchases in physical stores. Given their online activity, they are seen as potential future e-commerce users.

Searched only (Potential E-commerce users): This group includes individuals who browsed products or services online without making a purchase. It also covers those who initiated an order but cancelled it later. Their online interactions suggest a potential inclination towards future online purchasing.

Stand-alone Radio: A device solely designed to capture broadcast radio signals using common frequencies like FM, AM, LW, and SW. Devices integrated with other functionalities, such as TVs, phones, laptops, and cars, are excluded.

Digital Signal Receiver (e.g., TV Booster, Free-to-air Set Top Box, Built-in Digital TV): This apparatus enables a digital signal to be received, decoded, and showcased on a television, facilitating the display of channels on traditional analogue TV sets.

TV with Pay TV Decoder: Similar in function to set-top boxes but distinct in offering subscription-based channels. Users are required to pay a monthly fee to access and view the programmes.

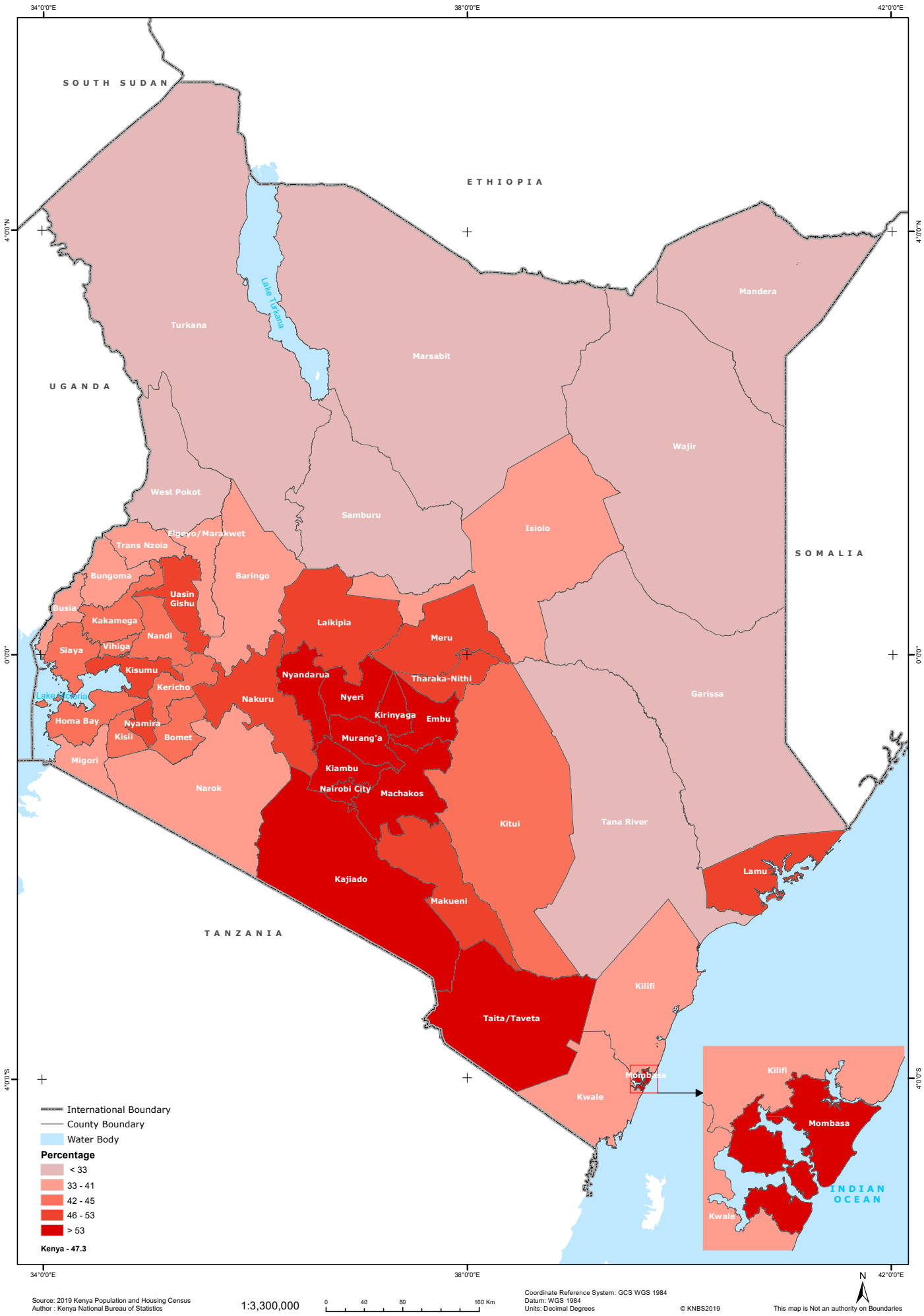
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J.1 Proportion of Individuals Owning a Mobile Phone

Mobile phone ownership is considered a key indicator not only for measuring the progress of the uptake of technology but also its use. According to the 2019 Census, the rate of mobile phone ownership for the population aged three years and above in Kenya was 47.3 per cent. Map J.1 shows the proportion of the population, age 3 years and above, owning a mobile phone. Nairobi City, Kiambu and Nyeri Counties had the highest proportion of the population that owned a mobile phone at 69.2, 66.1 and 64.1 per cent respectively. On the other hand, Turkana, West Pokot, and Mandera counties had the lowest proportion of population owning mobile phones at 16.6, 21.1 and 25.3 per cent, respectively.

Map J 1 : Proportion of Individuals Owning a Mobile Phone



Source: 2019 Kenya Population and Housing Census
Author : Kenya National Bureau of Statistics

Coordinate Reference System: GCS WGS 1984
Datum: WGS 1984
Units: Decimal Degrees

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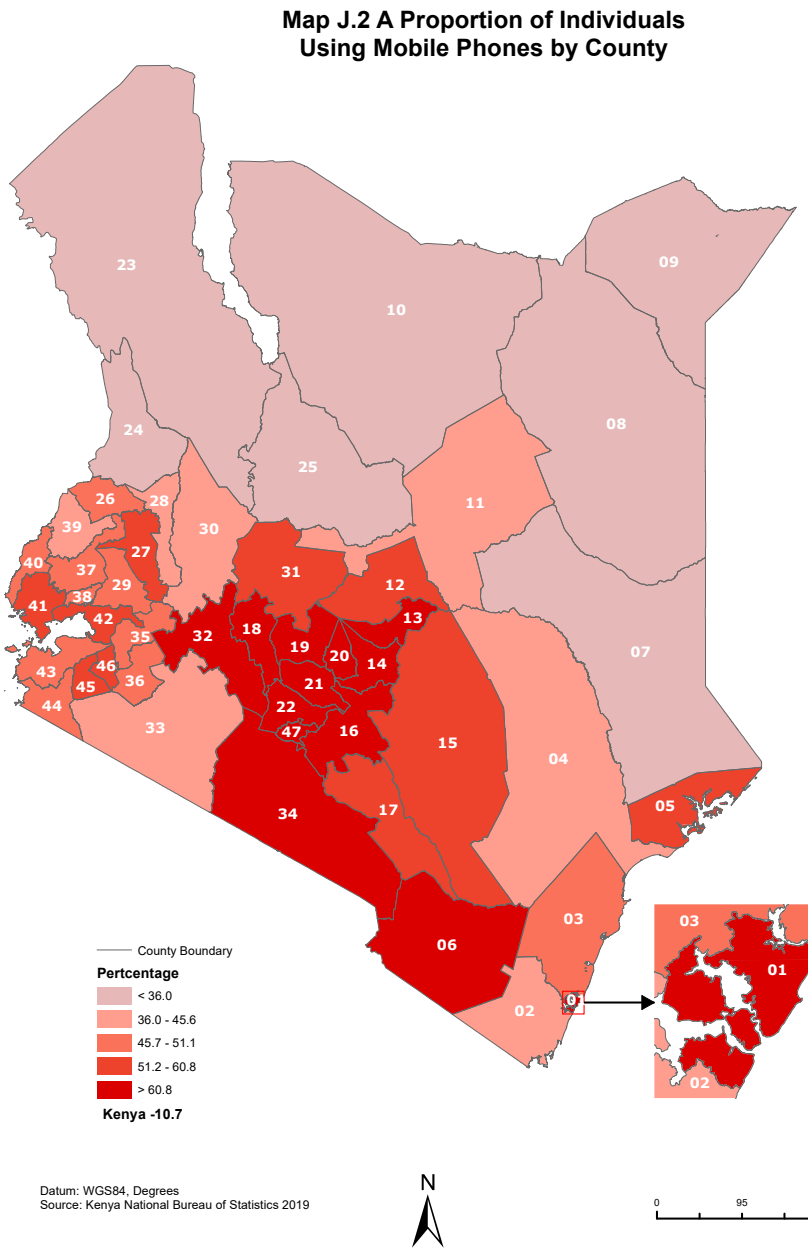
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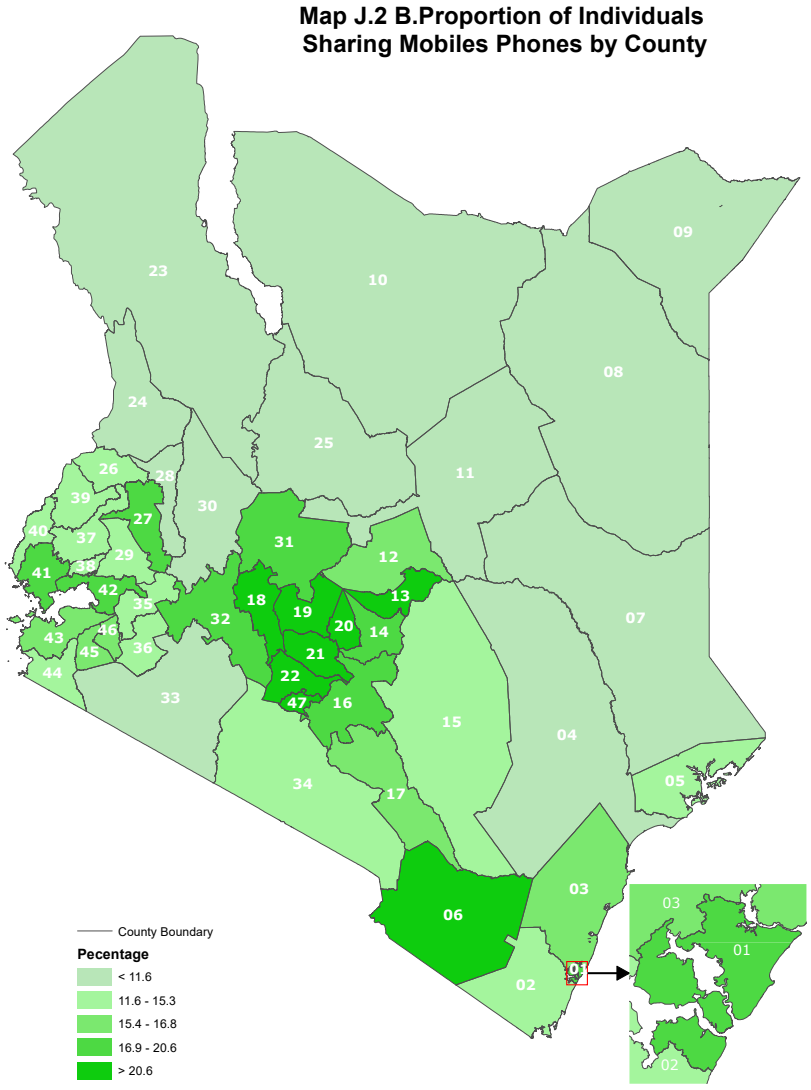
J.2 Proportion of Individuals Using and Sharing Mobile Phones

The proportion of individuals using a mobile phone is a critical metric for gauging the uptake of mobile cellular technology. The 2019 KPHC revealed that 55.2 per cent of the population aged three years and above, reported using a mobile phone. This indicator, as displayed in Map J.2A, shows that Nairobi City County had the highest proportion of the population aged three years and above using a mobile phone at 78.3 per cent, followed closely by Kiambu and Nyeri counties at 75.5 and 74.9 per cent, respectively. Conversely, Turkana, West Pokot, and Mandera counties had the lowest proportion of the population using a mobile phone, at 18.4, 24.5 and 27.3 per cent respectively.

According to the 2019 Kenya Population and Housing Census, among individuals aged three years and above, 14.9 per cent reported not owning a mobile phone but instead shared one. Map J.2B depicts the proportion of the population, aged three years and above, that shared a mobile phone. Nyeri, Nairobi City, and Kiambu counties had the highest proportion of mobile phone sharers at 29.9, 29.5 and 27.8 per cent respectively. Conversely, Turkana, Mandera, and Wajir counties had the lowest proportion of those that shared mobile phones at 2.2, 2.5 and 2.7 per cent respectively.

Map J 2 A Proportion of Individuals Using Mobile Phones by County and J 2 B Proportion of Individuals Sharing Mobile Phones by County





Datum: WGS84, Degrees
Source: Kenya National Bureau of Statistics 2019

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The Boundaries and colours are not authoritative @KNBS2019

J.3 Proportion of Individuals using Computer, E-commerce and Internet

According to the 2019 Census, the proportion of individuals aged three years and above using computers, tablets, or laptops stood at 10.7 per cent as shown in Map J.3A. Nairobi City County led with the highest proportion of the population aged three years and above using a computer at 28.6 per cent, followed by Kiambu county at 22.3 per cent and Mombasa County at 17.2 per cent. Conversely, Mandera and Turkana counties recorded the lowest proportion at 2.9 and 2.6 per cent respectively.

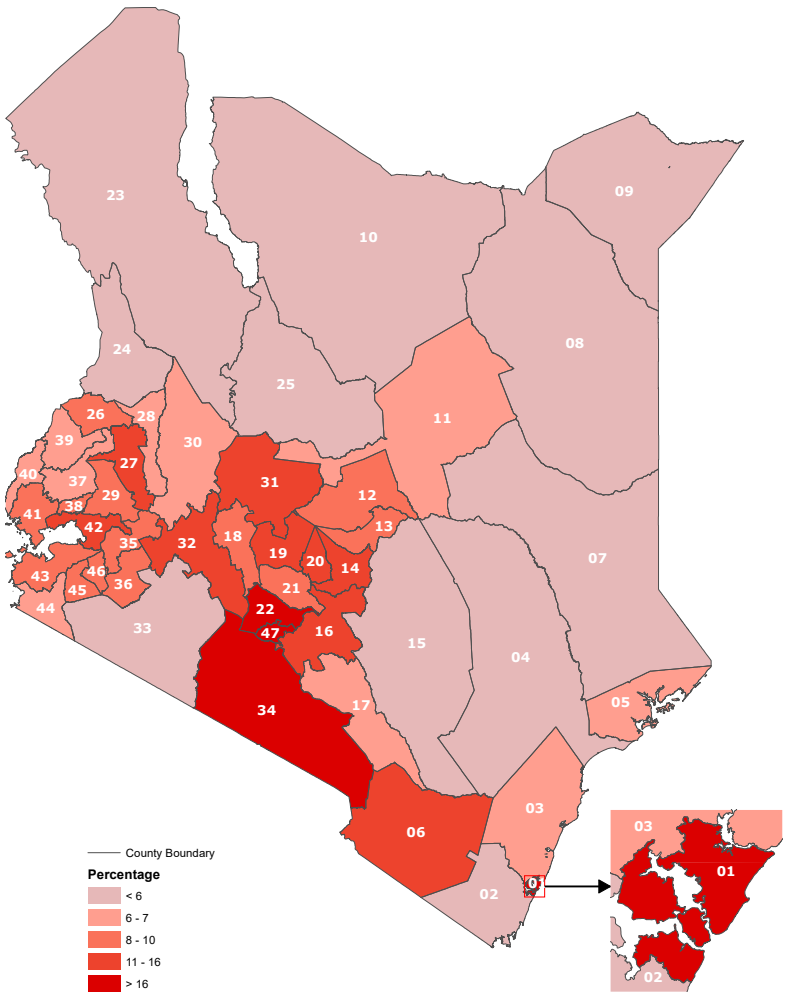
Internet usage has unlocked numerous opportunities for online users, notably the ability to buy goods and services online, also known as e-commerce. E-commerce encapsulates the online buying and selling of goods or services. The 2019 Census focused on one aspect of e-commerce, the purchase of goods and services online. According to the Census, the proportion of e-commerce users among the population aged 15 years and above stood at 4.3 per cent. Map J.3B, shows that e-commerce usage was most highest in Nairobi City and Kiambu counties, with rates of 14.0 and 9.2 per cent respectively. Conversely, Marsabit and West Pokot counties registered the lowest e-commerce usage at a mere 0.8 per cent.

According to the 2019 KPHC, the proportion of internet users among the population aged three years and above stood at 22.7 per cent. As depicted in Map J.3C, Nairobi City, Kiambu, and Mombasa counties reported the highest proportion of internet users, at 52.5, 42.8 and 39.3 per cent respectively. Conversely, Turkana, Mandera, and West Pokot registered the lowest percentages of internet users, at 7.0, 7.9 and 8.2 per cent respectively.

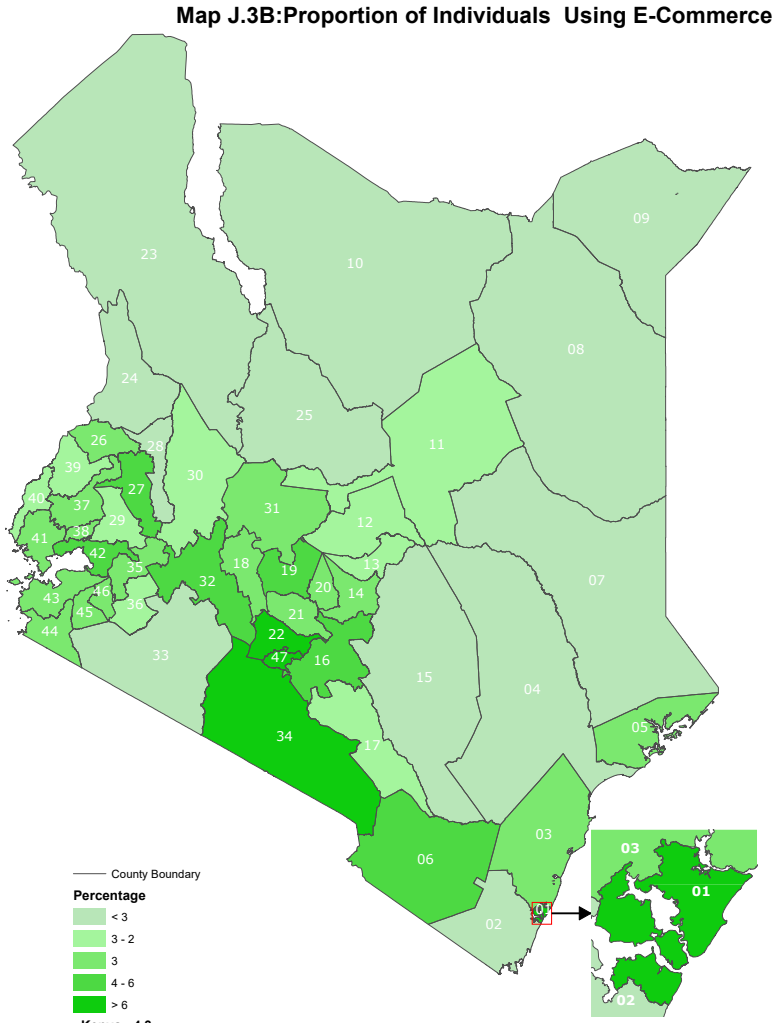


Map J 3: A, B and C Proportion of Individuals using Computer, E-commerce and Internet

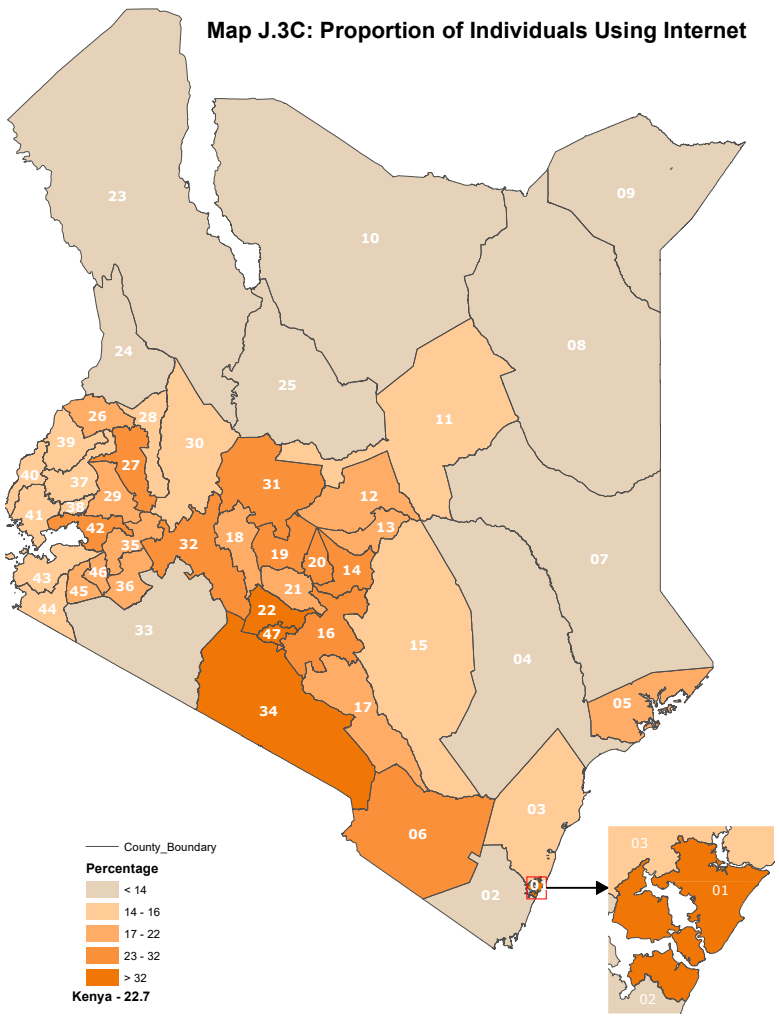
Map J.3A: Proportion of IndividualsUsing Computers



Map J.3B:Proportion of Individuals Using E-Commerce



Map J.3C: Proportion of Individuals Using Internet



Source: 2019 Kenya Population and Housing Census
Author : Kenya National Bureau of Statistics

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Coordinate Reference System: GCS WGS 1984
Datum: WGS 1984
Units: Decimal Degrees

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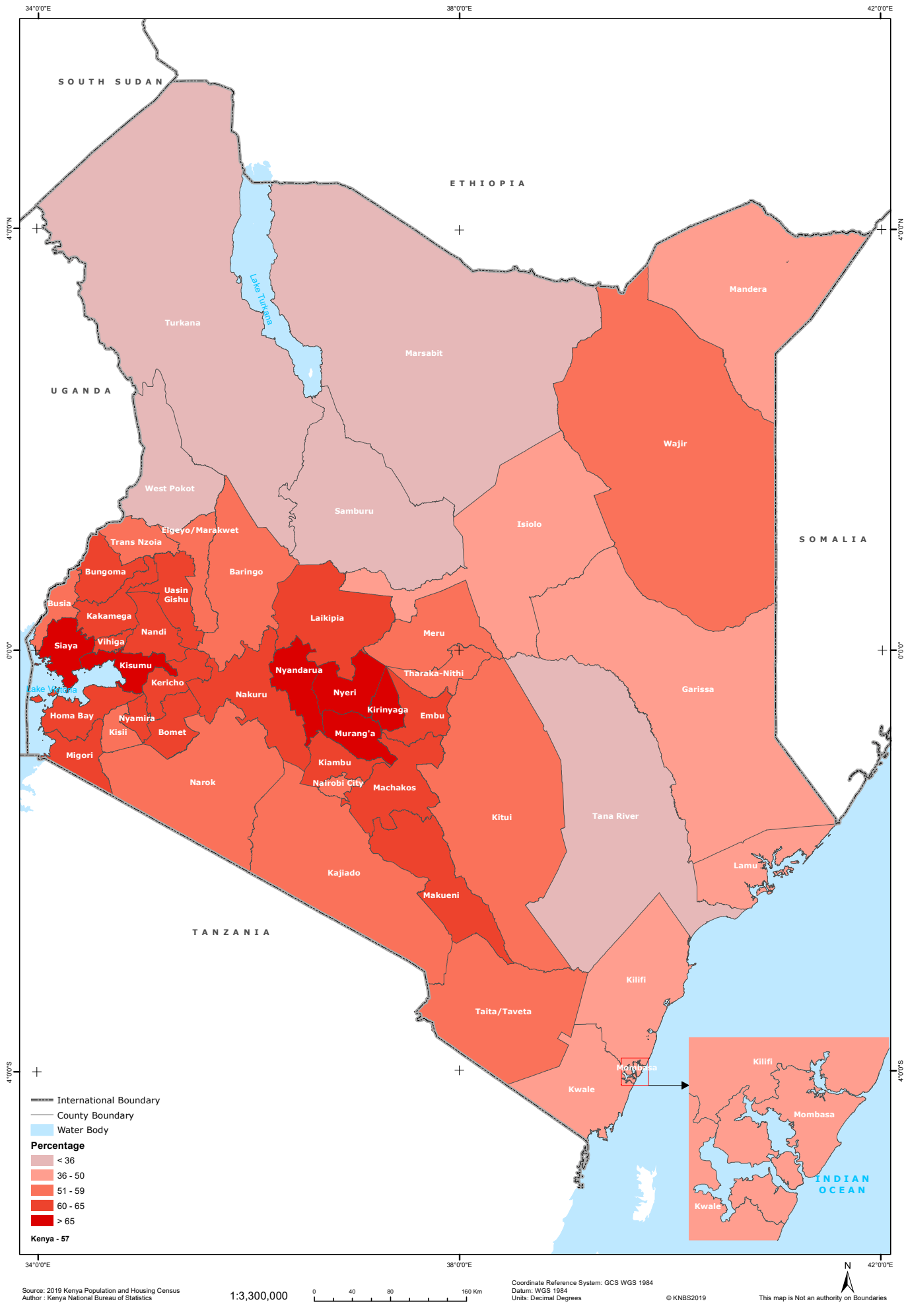
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J.4 Proportion of Households Owning ICT related assets

Among the ICT related assets, stand-alone radio was the most commonly owned device, with ownership standing at 57.0 per cent. As depicted in Map J.4, the counties with the highest proportion of households owning a stand-alone radio were Nyeri (74.3%), Nyandarua (72.4%), and Murang'a (70.7%). Counties with the lowest proportions were Turkana (12.1%), Marsabit (27.8%), and Tana River (28.4%)

Map J 4 : Proportion of Households a Owning Stand-Alone Radio



Source: 2019 Kenya Population and Housing Census
Author : Kenya National Bureau of Statistics

Coordinate Reference System: GCS WGS 1984
Datum: WGS 1984
Units: Decimal Degrees

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A functional television is defined as a free-to-air/inbuilt digital television, pay TV, and/or Internet protocol television. According to the 2019 KPHC, the proportion of households with a functional television stood at 38.8 per cent.

As illustrated in Map J.4A, Kiambu County reported the highest proportion of households owning functional TVs at 68.5 per cent, followed closely by Nairobi City at 66.8 per cent and Nyeri at 57.3 per cent. Conversely, Wajir, Turkana, and Mandera counties recorded the lowest rates of functional television ownership, at 6.1, 7.0 and 7.6 per cent respectively,Map J.4.A.

Following Kenya's digital transition in 2015, about 1.9 per cent of households were left with analogue televisions that were yet to be converted or replaced to receive digital signals. These households are unable to access information disseminated via television broadcasts without set top boxes.

As shown in Map J.4B, Mombasa and Nyandarua counties had the highest proportions of households with analogue televisions at 2.7 per cent each. Conversely, West Pokot and Turkana counties had the lowest proportion with only 0.4 per cent of households retaining analogue televisions.

According to the 2019 KPHC, households that had an internet connection, whether through mobile broadband, fixed internet connection, or both, constituted 18.0 per cent. Map J.4C shows that Nairobi City, Kiambu, and Kajiado counties led with 42.1, 39.2 and 29.1 per cent of households having internet connections respectively. Conversely, Wajir, Mandera and West Pokot counties had the lowest proportion of households with internet connection at home at 3.5 per cent each.

Data from the 2019 KPHC revealed that computers, tablets or laptops were present in 8.8 per cent of all households. Map J.4D shows that Nairobi City (22.7%), Kiambu (19.6%), and Kajiado (14.6%) counties had the highest percentage of households owning a computer, tablet, or laptop. On the other hand, Wajir (1.4%), West Pokot (1.4%) and Mandera (1.5%) counties had the lowest percentage of households owning any of these devices.

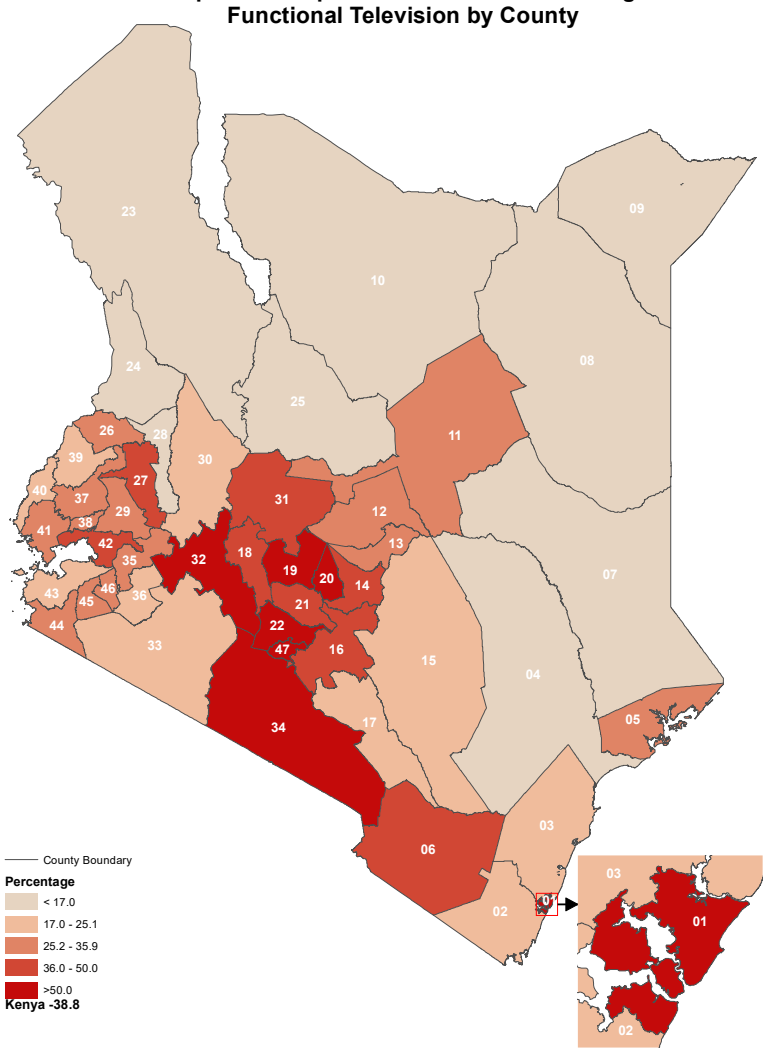
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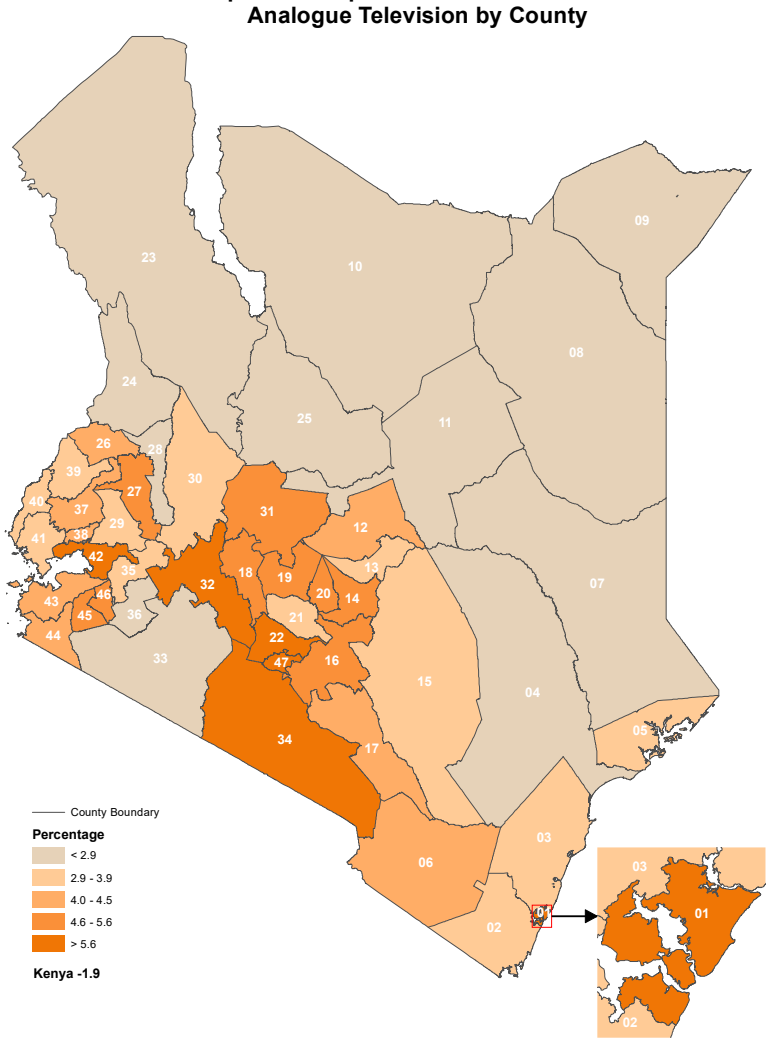


Map J.4.A Proportion of Household Owning a functional television by county; J.4.B Proprtion of Household with Analogue TV by County; J.4.C Proportion of Household with Internet Connection; J.4.D Proprtion of Household Owning a computer/Laptop/Tablet by County

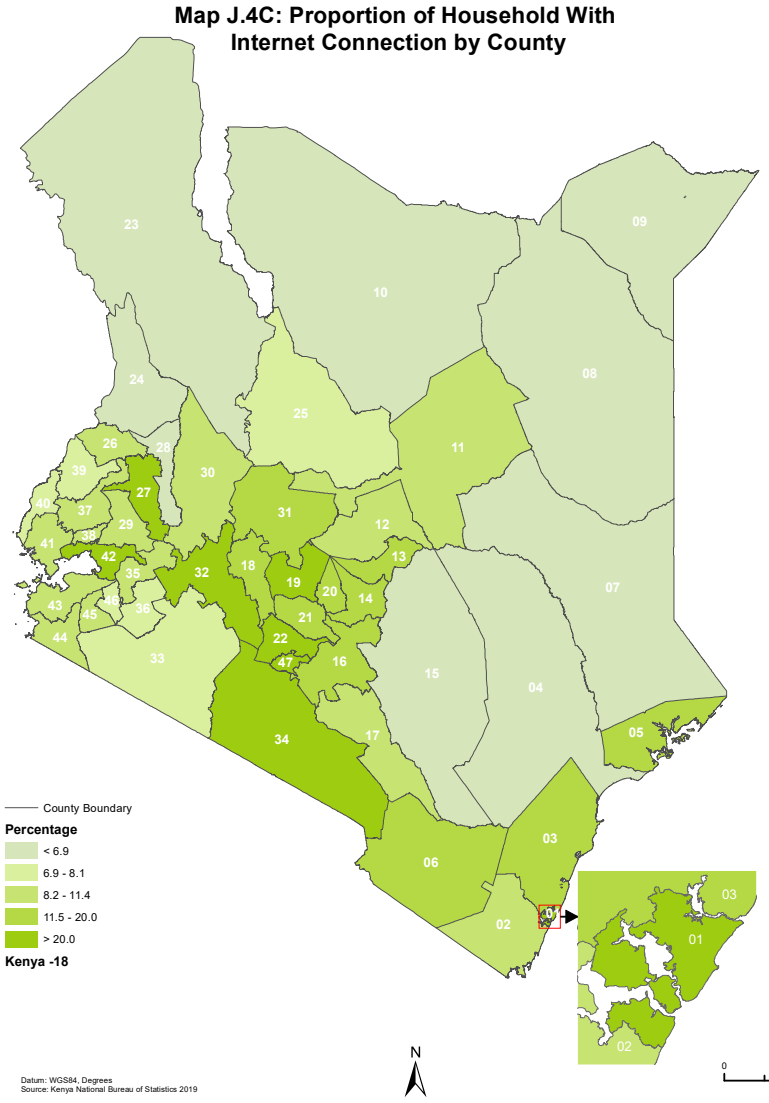
Map J.4A: Proportion of Household owning Functional Television by County



Map J.4B: Proportion of Household with Analogue Television by County



Map J.4C: Proportion of Household With Internet Connection by County



Map J.4D: Proportion of Household Owning a Computer/Laptop/Tablet by County

