Bridging Digital Divides:
Satellite Internet Access

EDA & Data Visualization Study

An Nguyen – March 05, 2024

The satellite internet industry is valued at $4 Billion in 2023 and is projected to reach $17.1 Billion by 2028.

It has the potential to promote economic growth, access to education, and bridging digital divides in remote and underserved areas.

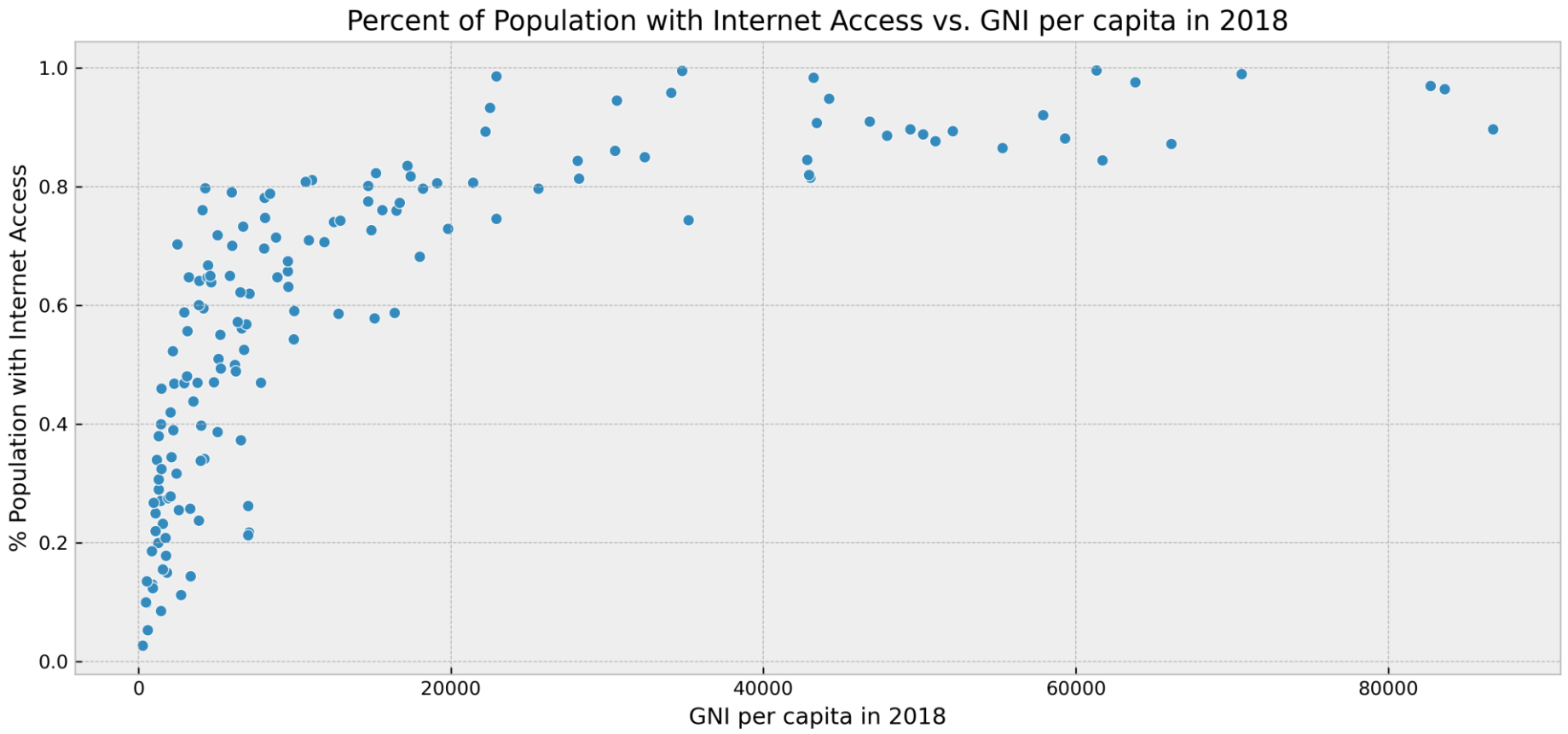
Today, the internet accessibility level globally varies significantly, with some regions are fully "online" while others lag far behind.

This presents an opportunity for Starlink to entry new markets and provide reliable, affordable satellite internet access in remote and underserved areas.

Datasets

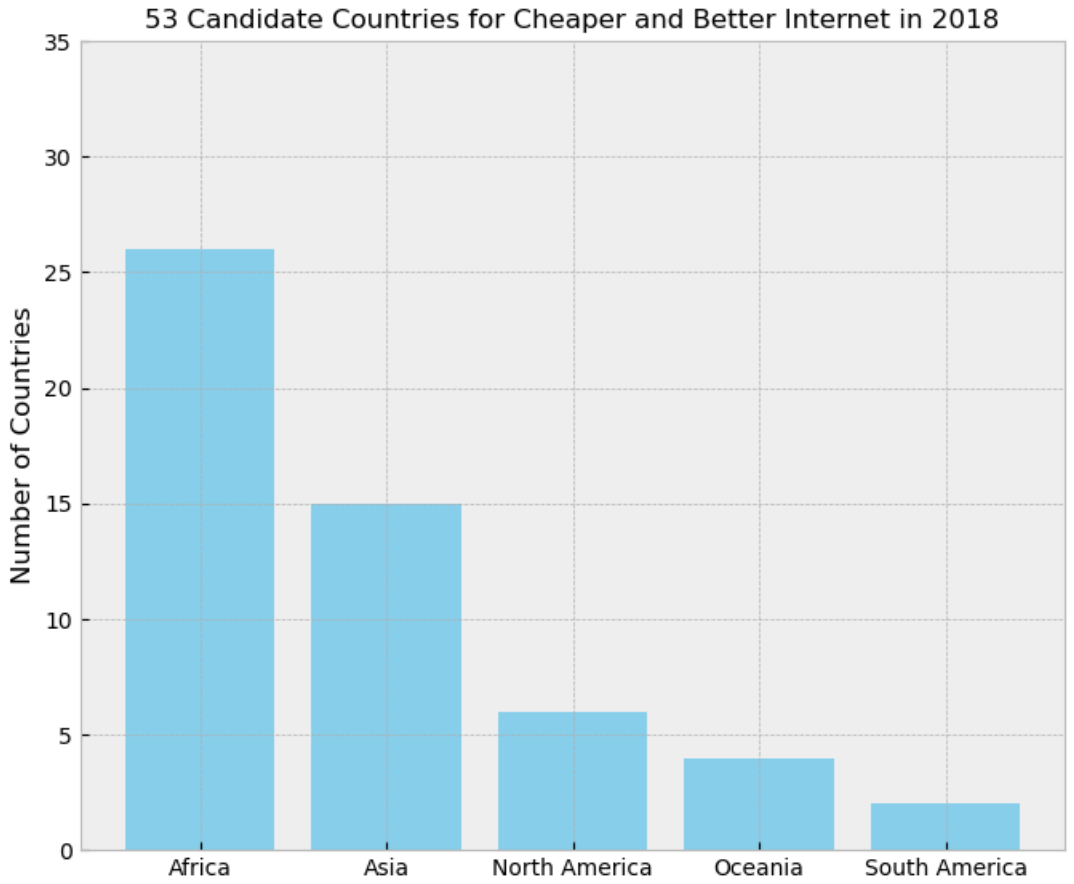
Feature	Type	Dataset	Description
country	*string*	Gapminder	Name of the country or region.
year	*integer*	Gapminder	The year the data was recorded.
monthly_internet_cost_$_2018	*float*	AAS	The average monthly cost in USD of internet access in a given country in 2018.
internet_percent_of_population	*float*	AAS	The percentage of the population with internet access in 2018. An internet user is anyone who has accessed the internet from any location in the last three months from any type of device.
population_2018	*float*	Gapminder	Using the UN POP data forecast models, this is the number of inhabitants living in a country in 2018.
population_2024	*float*	Gapminder	Using the UN POP data forecast models, this is the number of inhabitants living in a country in 2024.
gni_2018	*float*	Gapminder	Gross National Income (GNI) per capita in US dollars, adjusted for purchasing power parity (PPP), indicating the economic strength of the country or region in 2018.
gni_2024	*float*	Gapminder	Gross National Income (GNI) per capita in US dollars, adjusted for purchasing power parity (PPP), indicating the economic strength of the country or region in 2024.
annual_internet_cost_2018	*float*	*Calculated*	*The annual cost of monthly internet fees in 2018* ***(internet_cost_$_2018 x 12)***
annual_internet_cost_2024	*float*	*Calculated*	*The annual cost of monthly internet fees in 2024, adjusted for* ***inflation.***
annual_cost_percent_GNI_2018	*float*	*Calculated*	*The annual cost of internet access as a percent of GNI per capita in 2018.* (***Annual_internet_cost_2018 / gni_2018***)
annual_cost_percent_GNI_2024	*float*	*Calculated*	*The annual cost of internet access as a percent of GNI per capita in 2024.* (***Annual_internet_cost_2024 / gni_2024***)
sat_annual_cost_per_GNI_2018	*float*	*Calculated*	*The annual cost of satellite internet as a percent of GNI per capita in 2018, assuming* ***a $60 monthly cost*** *for Starlink. ((****60 x 12)/ gni_2018****)*
sat_annual_cost_per_GNI_2024	*float*	*Calculated*	*The annual cost of satellite internet as a percent of GNI per capita in 2024, assuming* ***a $69 monthly cost*** *for Starlink. ((****69 x 12)/ gni_2024****)*

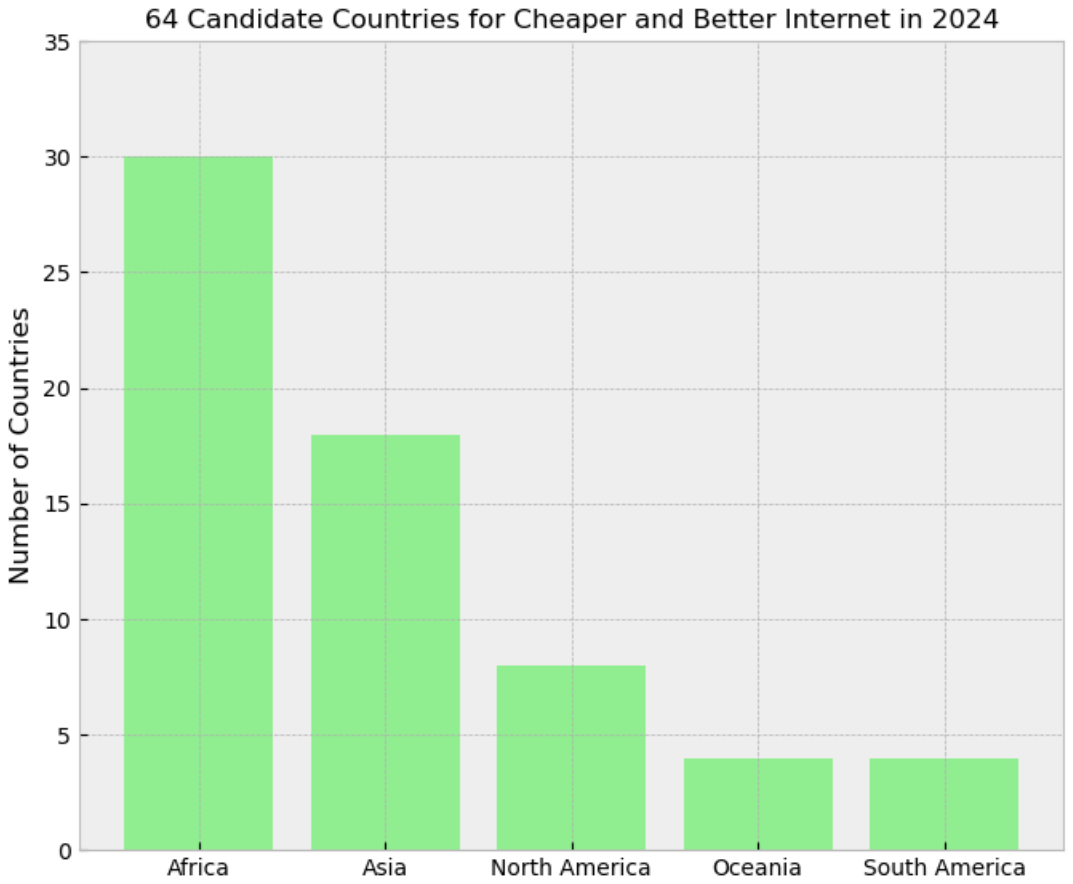
There is a strong positive correlation between GNI per capita and the percentage of the population with internet access.



In 2018, 53 countries were identified as currently lacking internet access (**internet_percent_of_population < 75%**) and having expensive internet service (***annual_cost_percent_GNI_2018 > 10%).*** By 2024, this number is projected to increase to 64 countries.

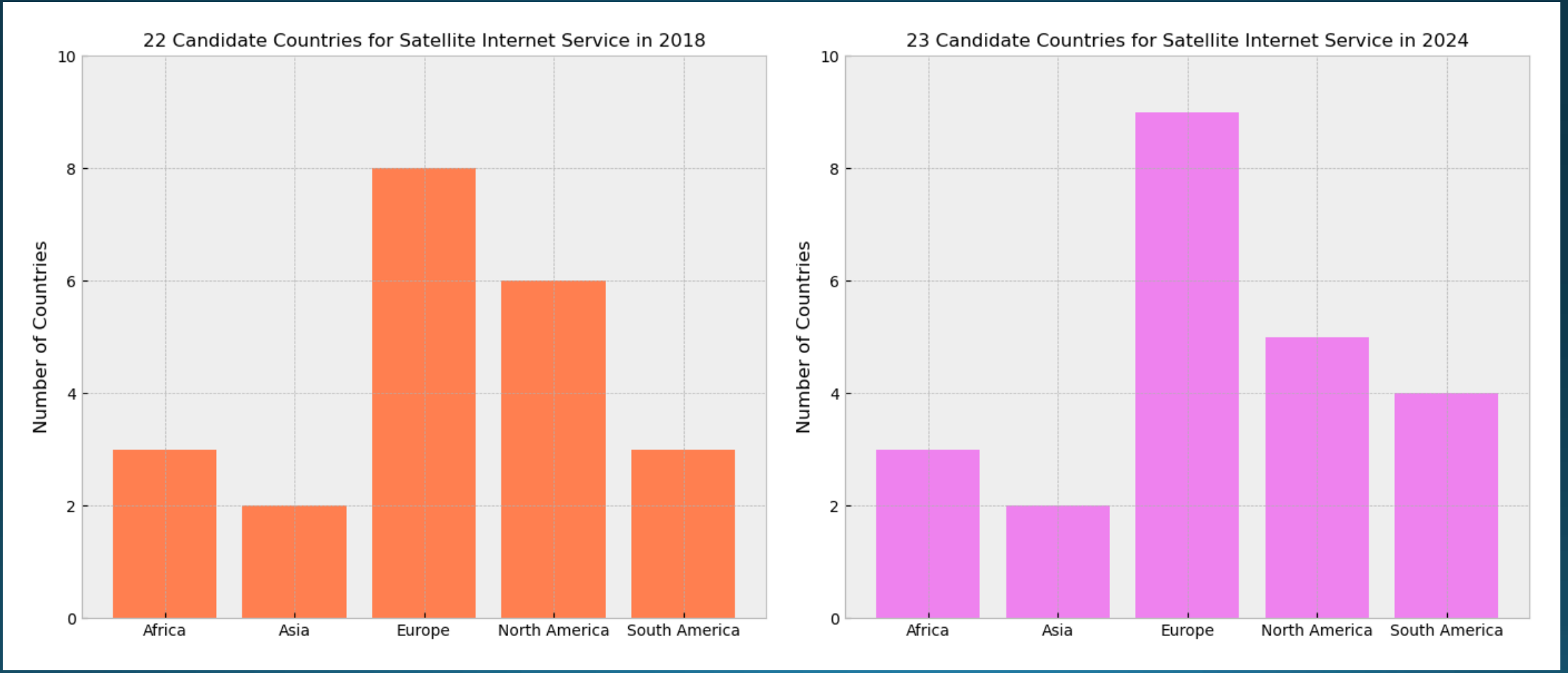
These countries are potential candidates for cheaper and better internet solutions.



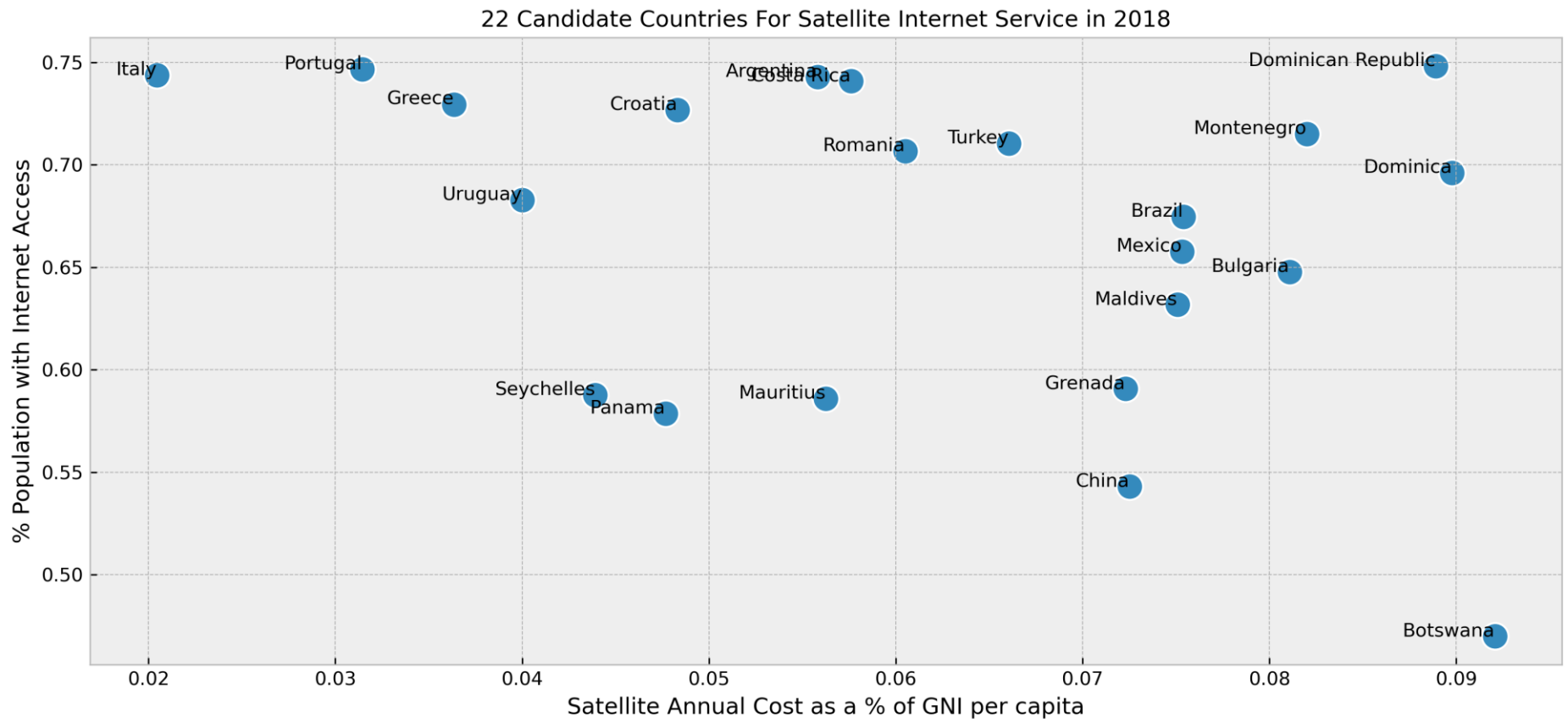


In 2018, 22 countries have populations that lack internet access (**internet_percent_of_population < 75%)** but are financially capable of affording satellite internet (***sat_annual_cost_per_GNI_2018 < 10%)*** based on a conservative satellite average monthly cost of **$60/ month**. By 2024, the count rises to 23 countries with a conservative satellite monthly cost of **$69/ month**.

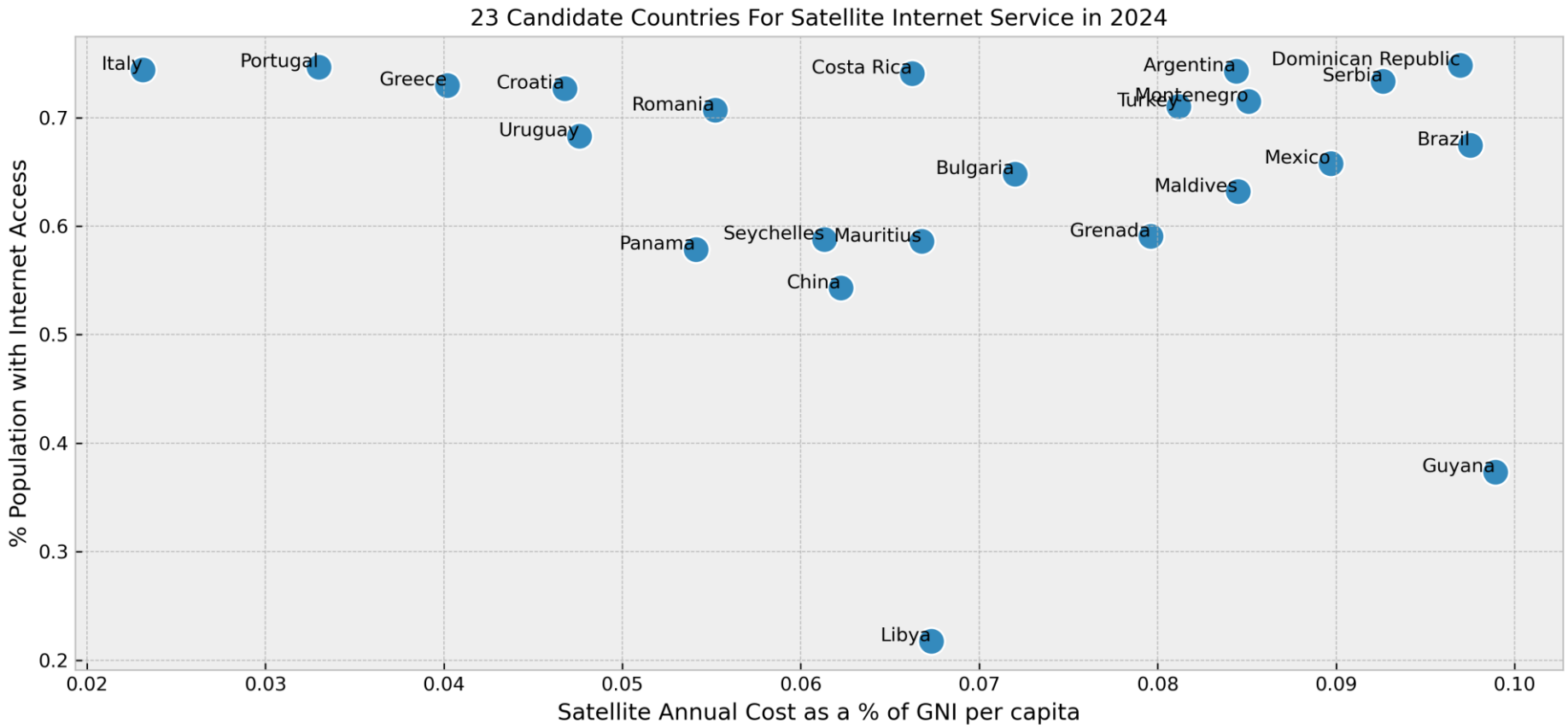
These countries are prime candidates ready to adopt satellite internet solutions at the targeted price points.



22 Candidate Countries that are ready to adopt satellite internet connections in 2018.



23 Candidate Countries that are ready to adopt satellite internet connections in 2024.



In Summary:

- Internet access has the potential to promote economic growth, access to education, and bridging digital divides in remote and underserved areas.
- However, internet accessibility levels vary significantly worldwide with underserved regions in Africa and Asia.
- Starlink has an opportunity to expand its satellite internet service business into these underserved regions.
- 22 candidate countries in 2018 and 23 countries in 2024 were identified as **ready to adopt satellite internet solutions** at the targeted monthly cost $60/month and $69/month respectively.
- Additionally, 53 countries in 2018 and 66 countries in 2024 **are in need of quality internet access but may not be able to afford satellite internet** at the targeted price. Starlink could work with the government agencies and NGOs in these countries to subsidize the costs.
- Future studies can look into the conservative assumptions made in this study and the dynamic satellite internet pricing model to fully understand each country's internet accessibility levels, economic conditions, and targeted group of customers.