# Using web analytics to assess traffic to the Mandela Portal: the case of African countries

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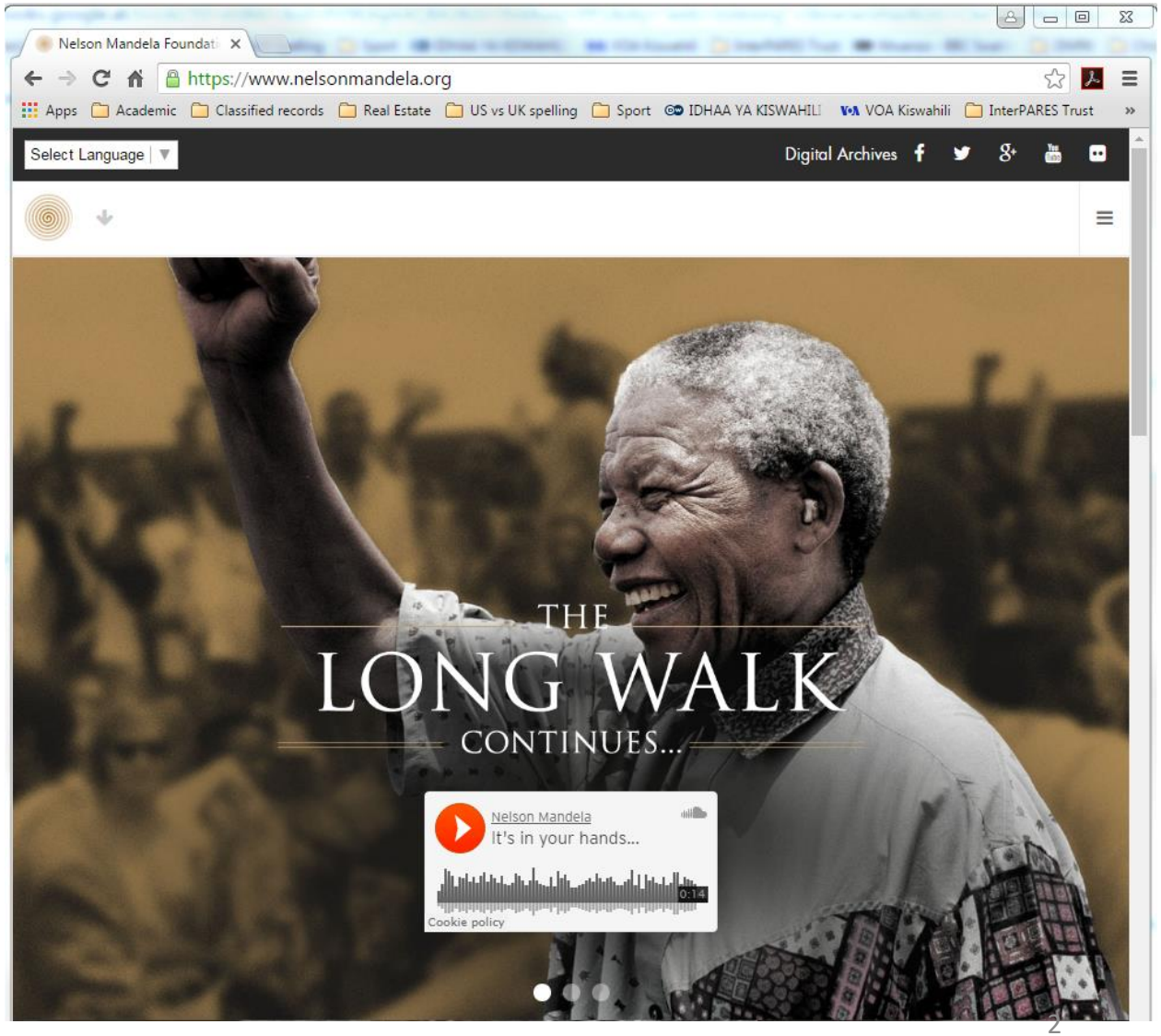
[1]The views expressed herein are those of the author and should not be attributed to either his current or any of his previous employers

# Outline

- Introducing web analytics
- Conceptualizing the Mandela Portal
- Findings
- Discussions
- Conclusions

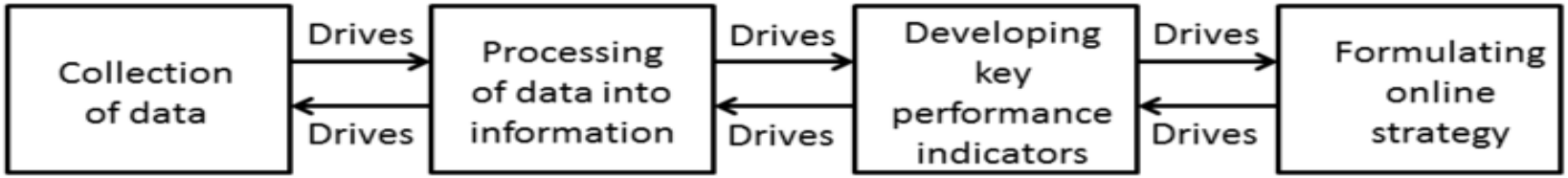


# Introducing web analytics

- Web analytics is defined as “the measurement, collection, analysis and reporting of Internet data for the purposes of understanding and optimising web usage” (Digital Analytics Association 2008 p. 3).
- Web analytics constitutes four steps:
  - collection of data,
  - processing,
  - developing performance indicators and
  - formulating an online strategy to meet institutional goals (Jansen 2009).
- The four steps can be illustrated in a linear fashion (Wikipedia 2015)

# Introducing web analytics

## Basic Steps of Web Analytics Process




| Collection of data | Processing of data into information | Developing key performance indicators | Formulating online strategy |
|---|---|---|---|
| Typically, counts.<br><br>Basically, data collection | Typically, ratios.<br><br>Data becomes metrics. | Counts and ratios infused with business strategy. | Online goals, objectives, or standards for organization. |
| Examples:<br>• Time stamp<br>• Referral URL<br>• Query terms | Examples:<br>• Time on page<br>• Bounce rate<br>• Unique visitors | Examples:<br>• Conversion rate<br>• Average order value<br>• Task completion rate | Examples:<br>• Save money<br>• Make money<br>• Marketshare |

# Introducing web analytics

- Web analytics has mostly been used by commercial entities to enhance online marketing strategies.
- In a few cases libraries and cultural institutions in the not-for-profit sector have used web analytics methodology to help understand their visitors (Fang 2015).
- This presentation uses the first two steps of the web analytics process to assess the global visitors to a portal developed by the Nelson Mandela Foundation (NMF) in order to identify longitudinal trends and discuss their implications.

# Conceptualizing the Mandela Portal

- The Nelson Mandela Foundation (NMF) was established in 1999 as the post-presidential office for Mr. Nelson Mandela upon his retirement as South Africa's first democratically elected president.
- Madiba was actively involved in the work of the NMF for the first five years, but in 2004 announced he was "retiring from retirement".
- At the core of the mandate of the NMF is to is to document and facilitate access to the Mandela Archive which is infinite, fragmented and scattered both geographically and institutionally.
- Since the NMF does not envisage bringing the archive into a physical location, the objective is to use the Mandela Portal as the key avenue to provide access the Archive.

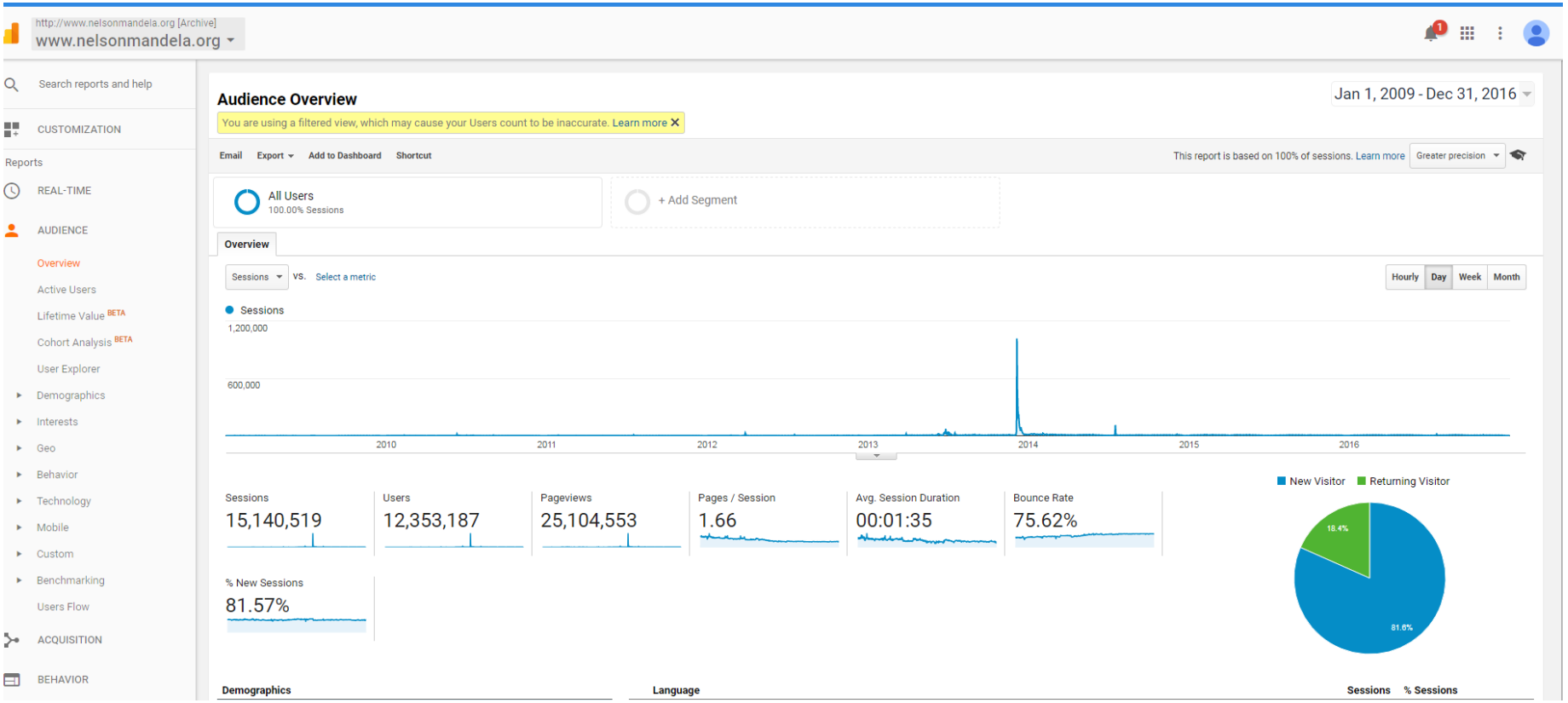
# Conceptualizing the Mandela Portal

- The NMF conceptualised a multi-layered virtual archive or portal that would be accessible through its website.
- The website was initially developed in the early 2000s and had already undergone several phases of development by the late 2000s.
- The drafting of the Mandela Portal began in 2008 with an architecture that had four design elements:
  - databases providing a dense description of resource materials;
  - linkages to actual materials, to other websites and to different layers within the website;
  - digitised materials including paper, sound and moving images; and
  - a surface layer of stories and information

# Conceptualizing the Mandela Portal

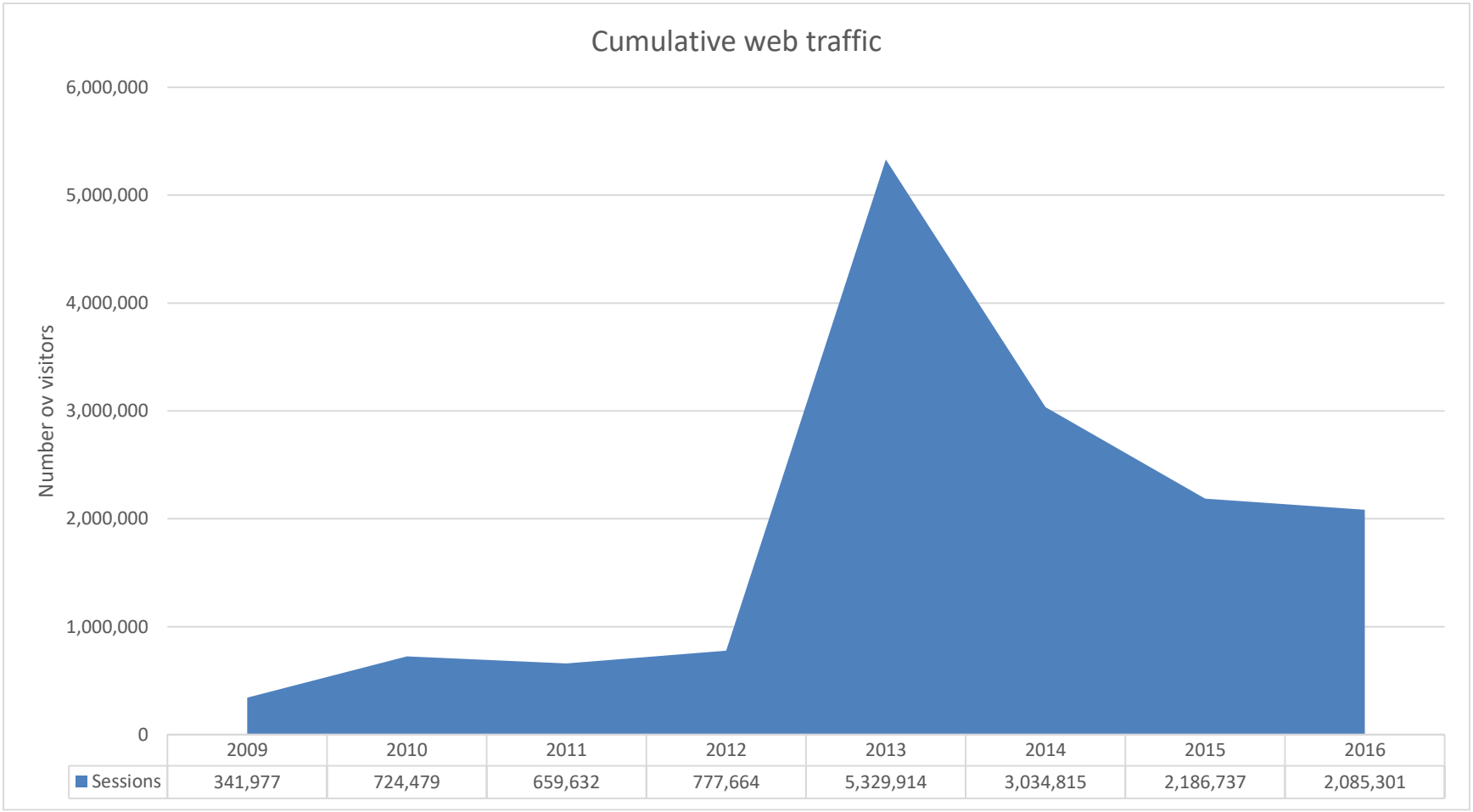
- Over the years the Portal has offered a rich resource of content and become “the most trusted and widely used internet resource for research on the life and times of Nelson Mandela” this includes
  - databases on Mr. Mandela’s speeches,
  - archival material on the Rivonia Trial,
  - Speeches,
  - a bibliography of books, as well as
  - a tributes databases that are an inventory of thousands of civic honours and awards given to Mr. Mandela from educational, arts and cultural as well as sports institutions.

# Findings



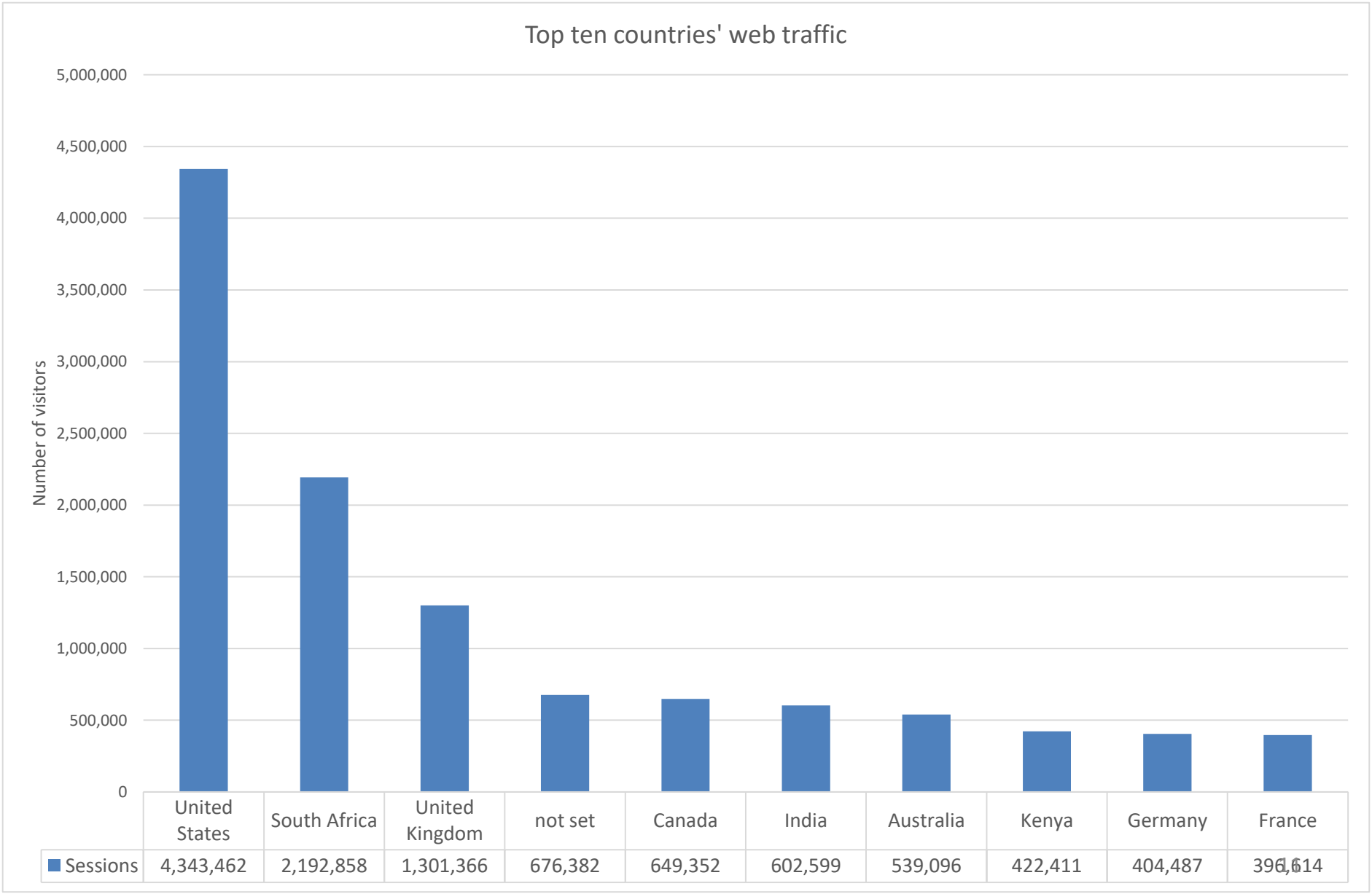

- Cumulative global statistics between 2009 and 2016
- Cumulative statistics of the top ten countries globally between 2009 and 2016
- Cumulative statistics of the top African ten countries between 2009 and 2016
- Cumulative statistics of the top African five countries between 2009 and 2016 (South Africa, Kenya, Nigeria, Tanzania, Ghana)

# Overall global statistics between 2009 and 2016




| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|
| Sessions | 341,977 | 724,479 | 659,632 | 777,664 | 5,329,914 | 3,034,815 | 2,186,737 | 2,085,301 |

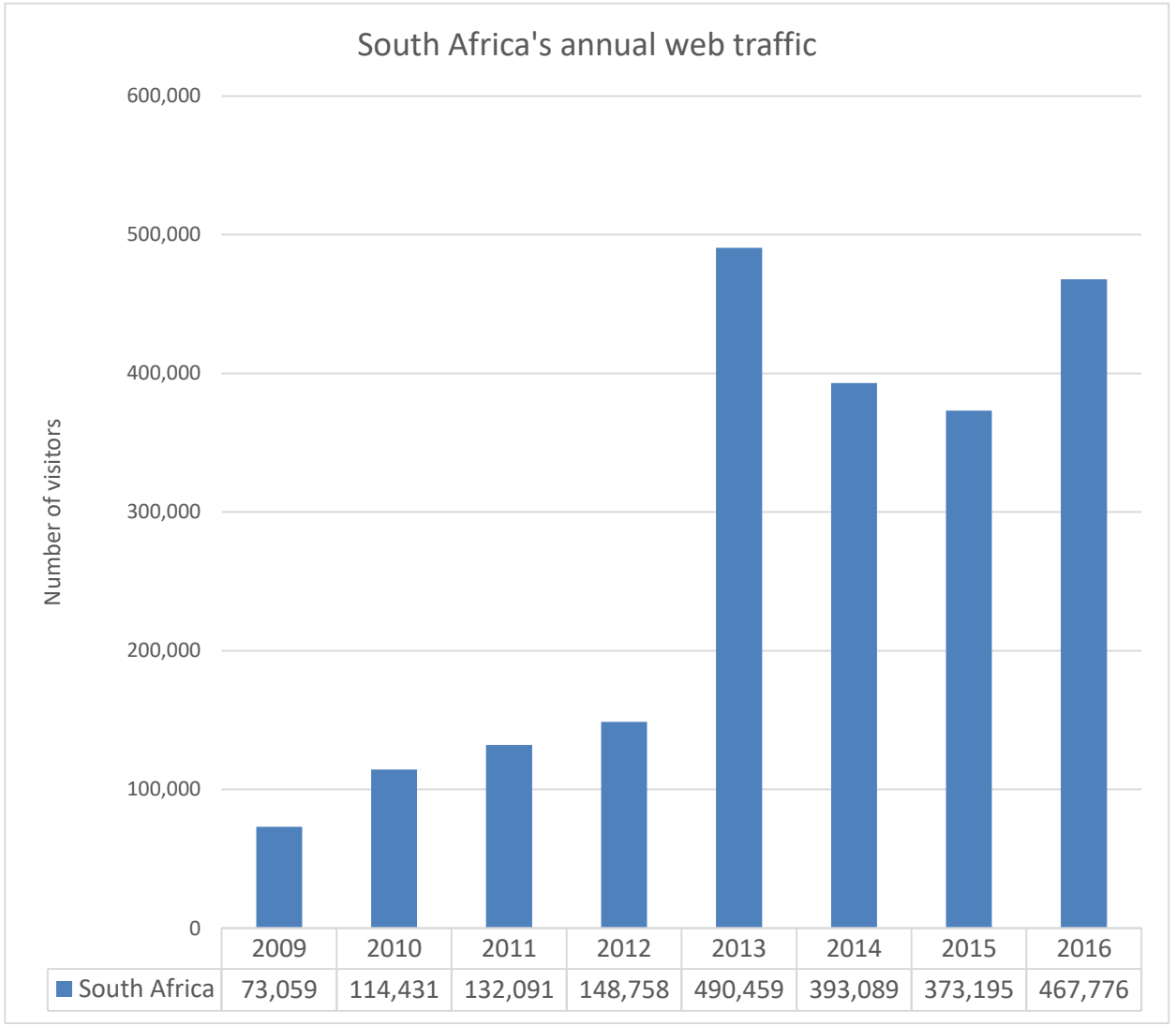
# Overall statistics of the top ten countries globally between 2009 and 2016



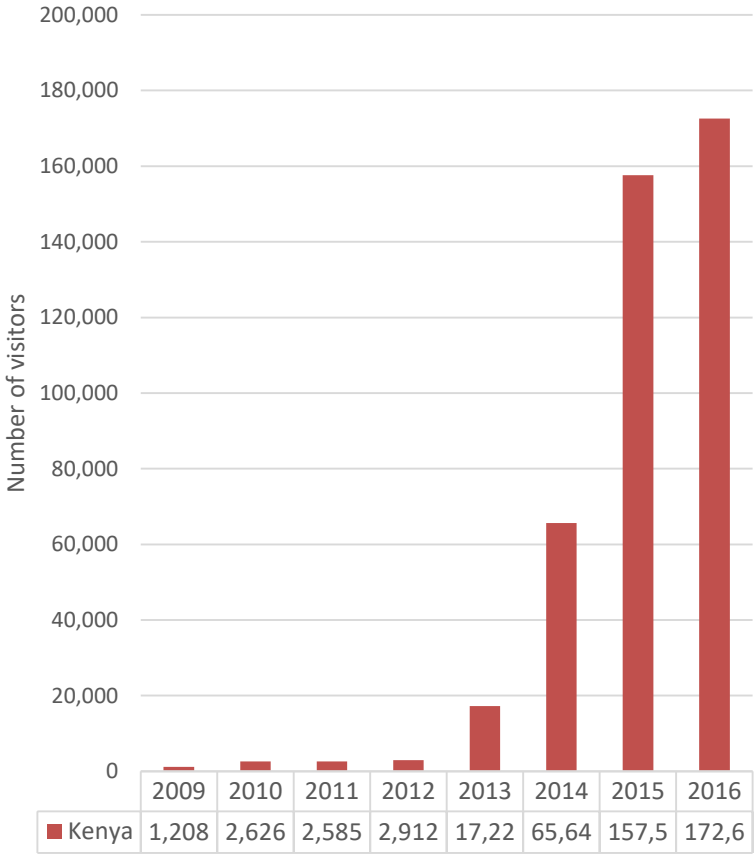

| | United States | South Africa | United Kingdom | not set | Canada | India | Australia | Kenya | Germany | France |
|---|---|---|---|---|---|---|---|---|---|---|
| Sessions | 4,343,462 | 2,192,858 | 1,301,366 | 676,382 | 649,352 | 602,599 | 539,096 | 422,411 | 404,487 | 396,614 |

# Top ten African countries

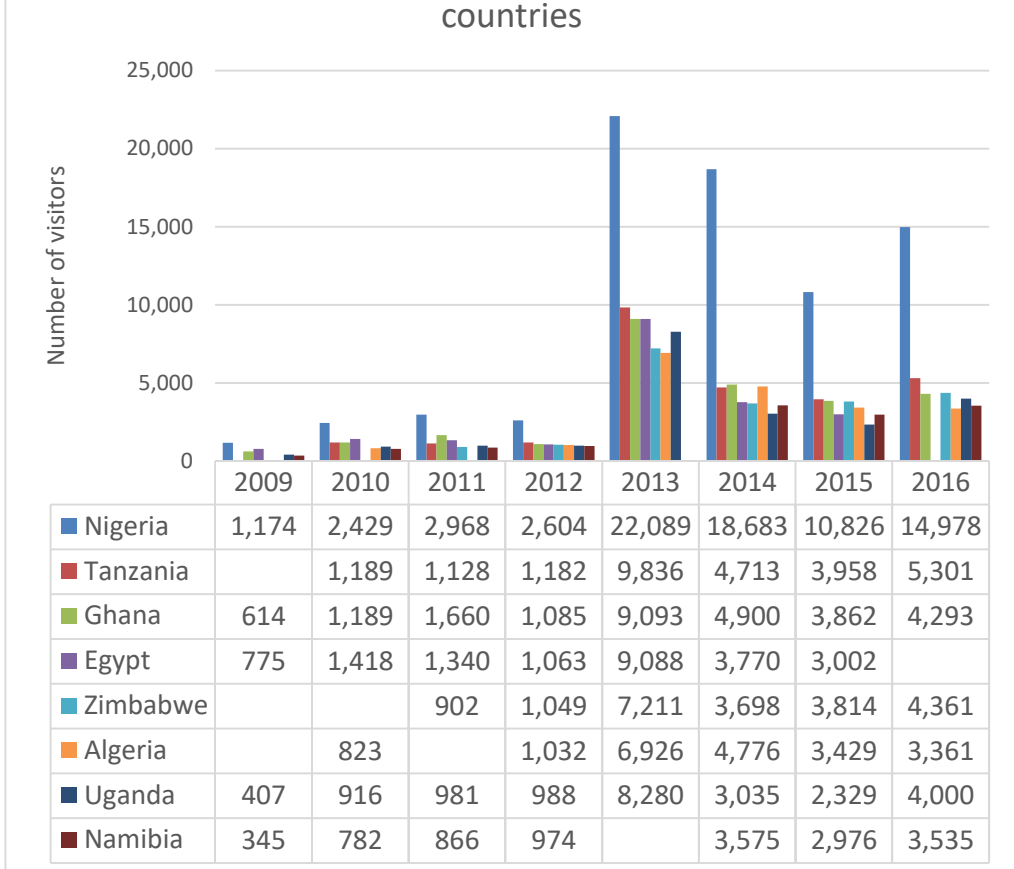
| | Total |
|---|---|
| South Africa | 2,192,858 |
| Kenya | 422,411 |
| Nigeria | 75,751 |
| Tanzania | 27,307 |
| Ghana | 26,696 |
| Egypt | 20,456 |
| Zimbabwe | 21,035 |
| Algeria | 20,347 |
| Uganda | 20,936 |
| Namibia | 13,053 |



# Overall statistics of the top African ten countries between 2009 and 2016

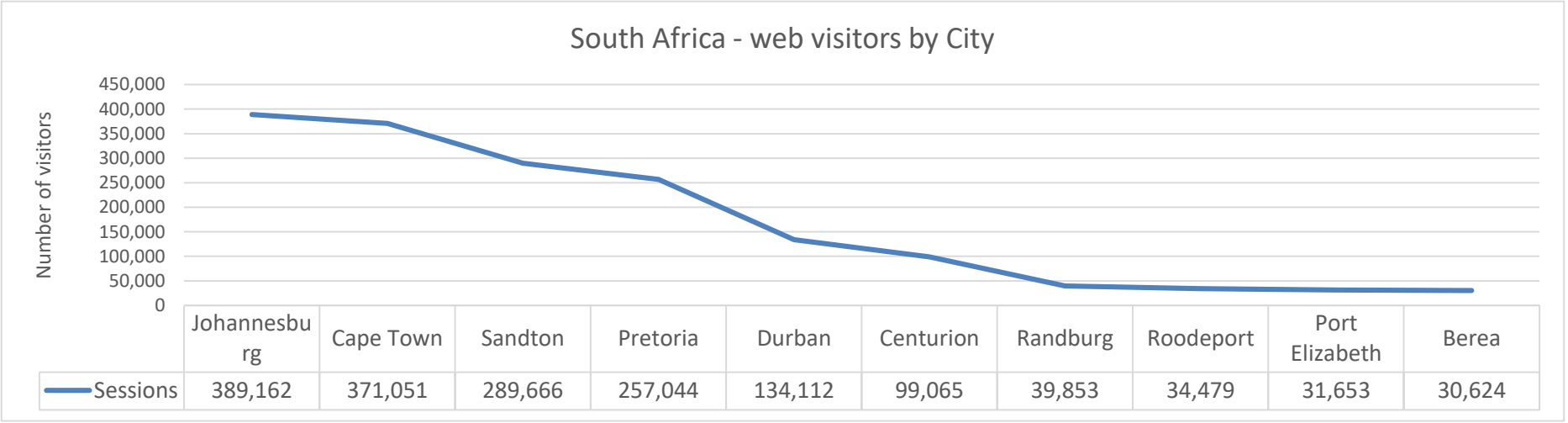



| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|
| Kenya | 1,208 | 2,626 | 2,585 | 2,912 | 17,22 | 65,64 | 157,5 | 172,6 |

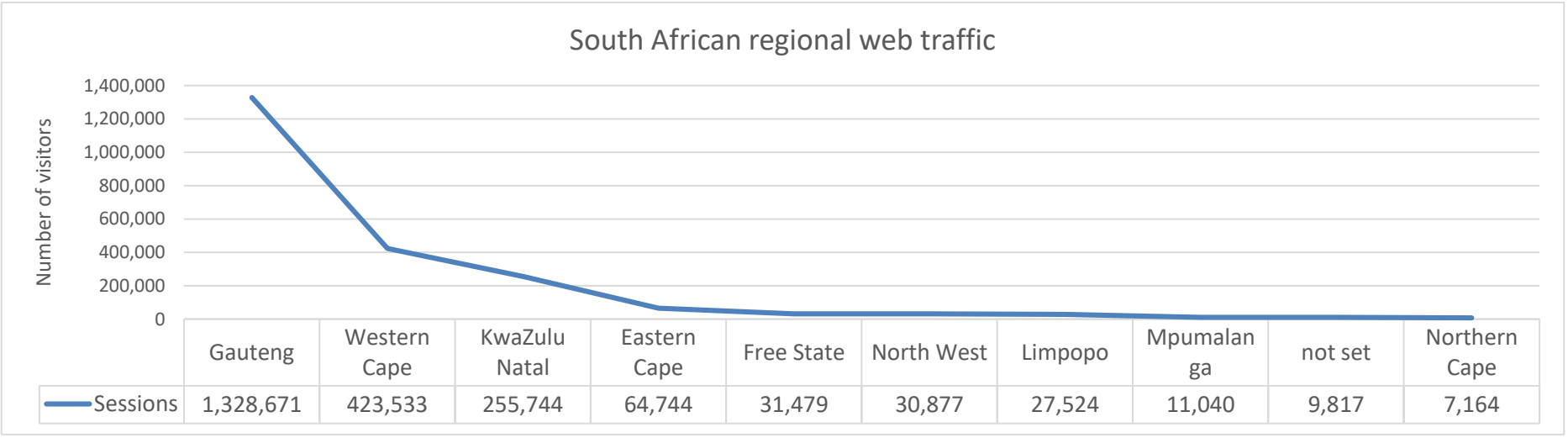



| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|
| Nigeria | 1,174 | 2,429 | 2,968 | 2,604 | 22,089 | 18,683 | 10,826 | 14,978 |
| Tanzania | | 1,189 | 1,128 | 1,182 | 9,836 | 4,713 | 3,958 | 5,301 |
| Ghana | 614 | 1,189 | 1,660 | 1,085 | 9,093 | 4,900 | 3,862 | 4,293 |
| Egypt | 775 | 1,418 | 1,340 | 1,063 | 9,088 | 3,770 | 3,002 | |
| Zimbabwe | | | 902 | 1,049 | 7,211 | 3,698 | 3,814 | 4,361 |
| Algeria | | 823 | | 1,032 | 6,926 | 4,776 | 3,429 | 3,361 |
| Uganda | 407 | 916 | 981 | 988 | 8,280 | 3,035 | 2,329 | 4,000 |
| Namibia | 345 | 782 | 866 | 974 | | 3,575 | 2,976 | 3,535 |

# Cumulative statistics of the top five African countries between 2009 and 2016
# South Africa

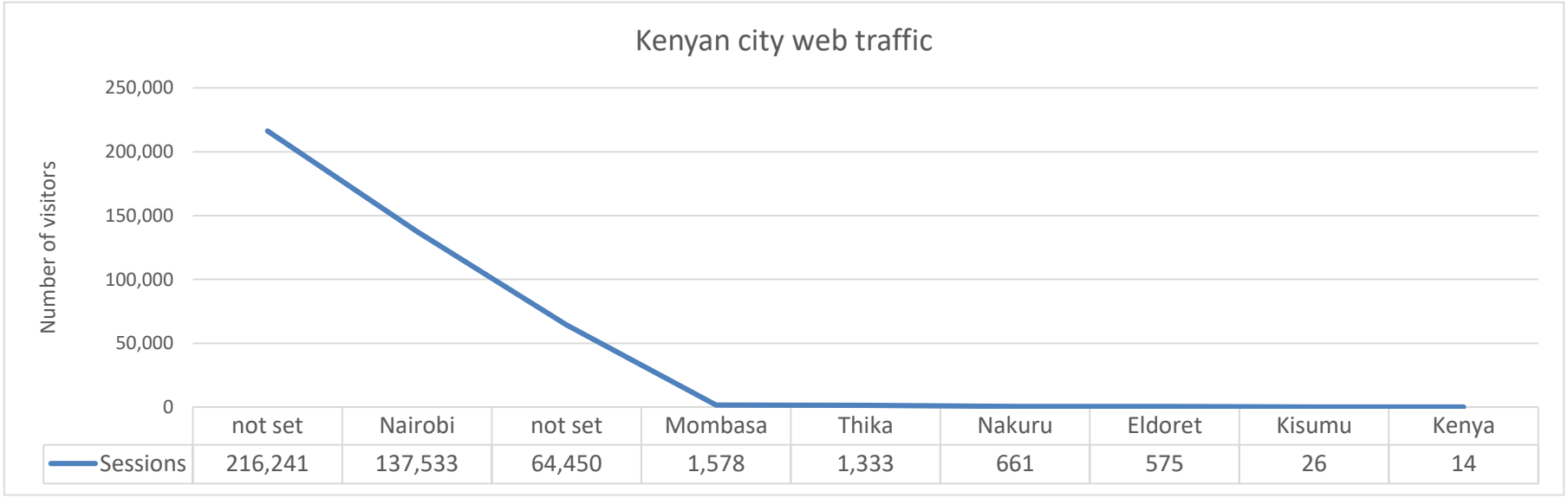



| | Johannesburg | Cape Town | Sandton | Pretoria | Durban | Centurion | Randburg | Roodeport | Port Elizabeth | Berea |
|---|---|---|---|---|---|---|---|---|---|---|
| Sessions | 389,162 | 371,051 | 289,666 | 257,044 | 134,112 | 99,065 | 39,853 | 34,479 | 31,653 | 30,624 |




| | Gauteng | Western Cape | KwaZulu Natal | Eastern Cape | Free State | North West | Limpopo | Mpumalanga | not set | Northern Cape |
|---|---|---|---|---|---|---|---|---|---|---|
| Sessions | 1,328,671 | 423,533 | 255,744 | 64,744 | 31,479 | 30,877 | 27,524 | 11,040 | 9,817 | 7,164 |

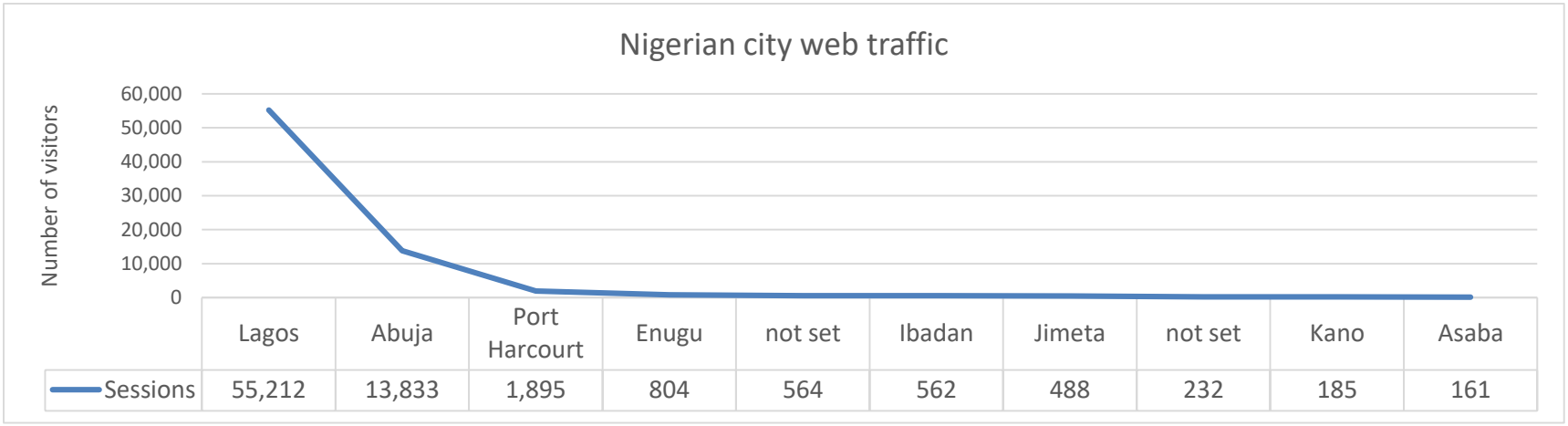
# Cumulative statistics of the top five African countries between 2009 and 2016
# Kenya



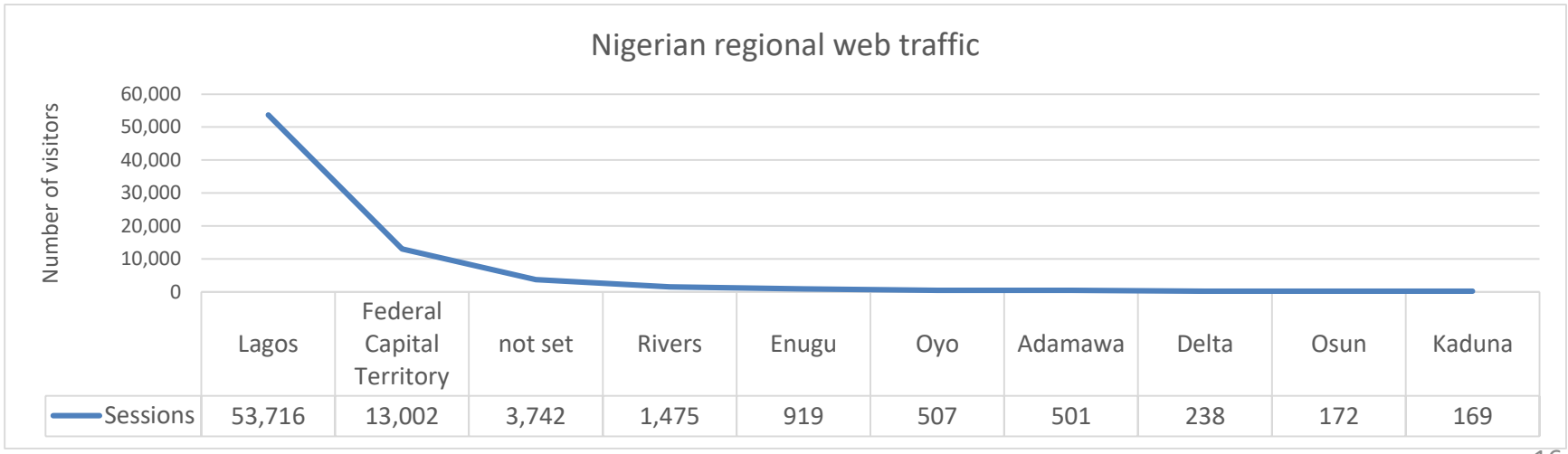

| | not set | Nairobi | not set | Mombasa | Thika | Nakuru | Eldoret | Kisumu | Kenya |
|---|---|---|---|---|---|---|---|---|---|
| Sessions | 216,241 | 137,533 | 64,450 | 1,578 | 1,333 | 661 | 575 | 26 | 14 |

- Discrepancies in Kenya
  - there are two separate “not set” categories that combine to form the largest part of national statistics.
  - The only other significant contribution is the country’s largest city Nairobi with other cities contributing a very small percentage.
  - The city ranked 10th is the name of the country.

# Cumulative statistics of the top five African countries between 2009 and 2016
## Nigeria

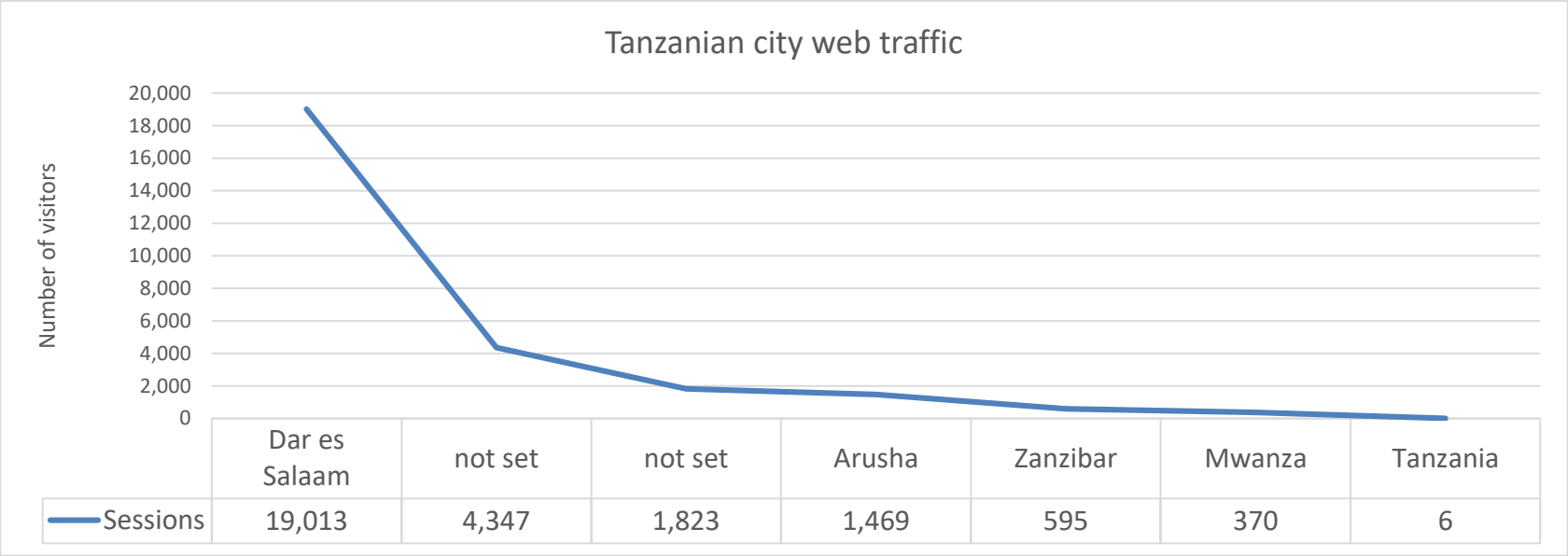



| | Lagos | Abuja | Port Harcourt | Enugu | not set | Ibadan | Jimeta | not set | Kano | Asaba |
|---|---|---|---|---|---|---|---|---|---|---|
| Sessions | 55,212 | 13,833 | 1,895 | 804 | 564 | 562 | 488 | 232 | 185 | 161 |




| | Lagos | Federal Capital Territory | not set | Rivers | Enugu | Oyo | Adamawa | Delta | Osun | Kaduna |
|---|---|---|---|---|---|---|---|---|---|---|
| Sessions | 53,716 | 13,002 | 3,742 | 1,475 | 919 | 507 | 501 | 238 | 172 | 169 |

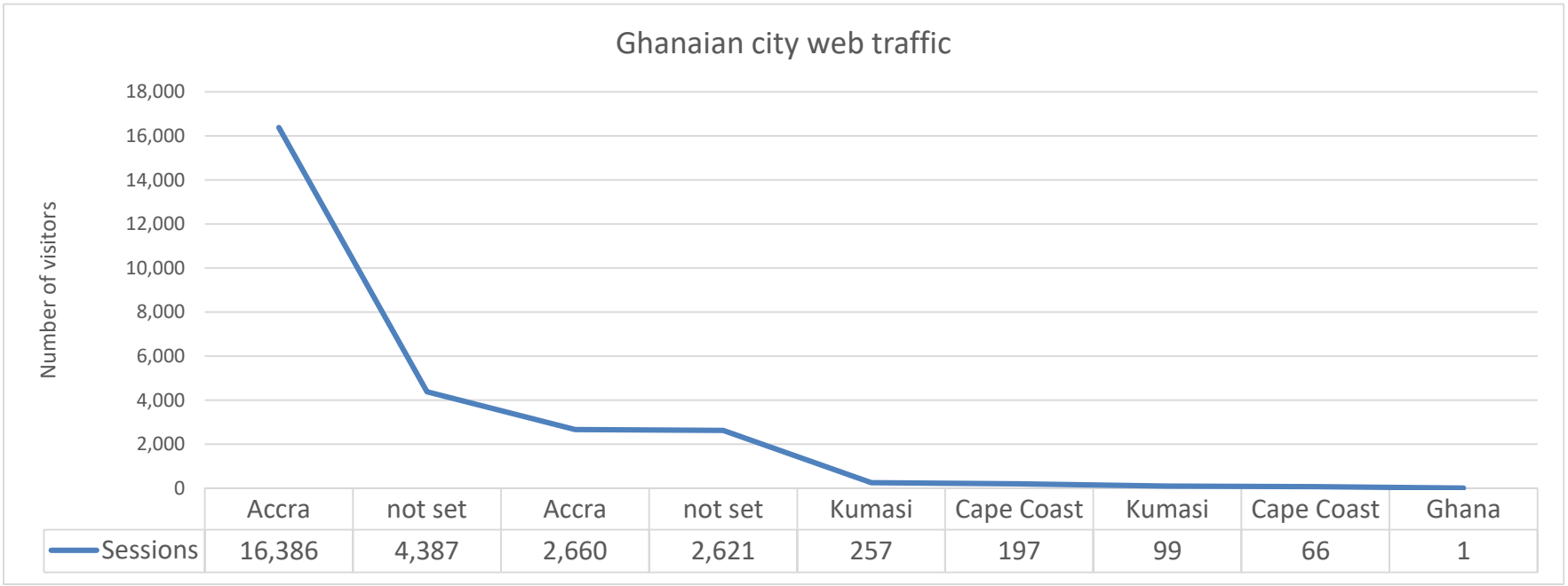
# Cumulative statistics of the top five African countries between 2009 and 2016




| | Dar es Salaam | not set | not set | Arusha | Zanzibar | Mwanza | Tanzania |
|---|---|---|---|---|---|---|---|
| Sessions | 19,013 | 4,347 | 1,823 | 1,469 | 595 | 370 | 6 |

- Discrepancies in Tanzania
  - There are two “not set” categories.
  - The contribution of the largest city, Dar es Salaam, dominates all other contributions put together.
  - The city ranked 7$^{th}$ is the name of the country

# Cumulative statistics of the top five African countries between 2009 and 2016 Ghana




| | Accra | not set | Accra | not set | Kumasi | Cape Coast | Kumasi | Cape Coast | Ghana |
|---|---|---|---|---|---|---|---|---|---|
| Sessions | 16,386 | 4,387 | 2,660 | 2,621 | 257 | 197 | 99 | 66 | 1 |

Discrepancies in Ghana

- The largest city, Accra, dominates all other contributions.
- There are also two “not set” categories.
- Three different cities are cited twice: Accra, Kumasi and Cape Coast.
- The city ranked 9th is the name of the country

# Discussions

This study has three broad aspects related to web traffic trends

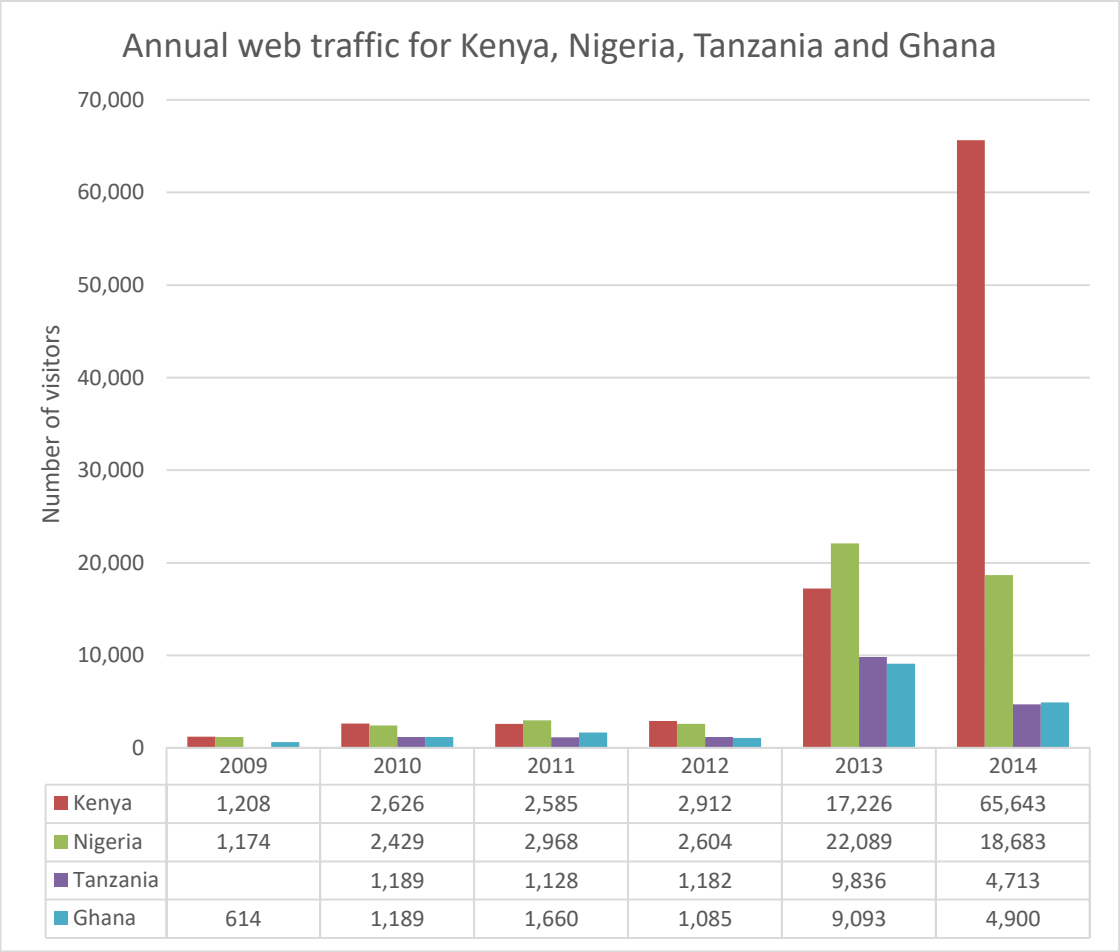
- First, the statistics from the individual countries showed the clear dominance of two countries in the African continent throughout the eight year period of the study i.e. South Africa and Kenya.
  - It is understandable in the case of South Africa since the Mandela Portal is located in a South African institution.
  - However, the Kenyan statistics beg additional scrutiny considering there are several other countries closer to the South African historical experience such as Namibia or Zimbabwe whose statistics should be much higher.
- Second, the cumulative global statistics revealed that the web traffic peaked in 2013 consistent with the global attention on the long-term hospitalization and eventual passing on of Mr. Mandela.
  - After 2013 the pattern is mixed amongst the African countries. While South Africa and Nigeria generally maintained the same level most other countries gradually declined post 2013.
  - However, Kenya's statistics show a drastic increase highlight the need for further explanation.

# Discussions: Web traffic trends

- Third, as pointed out in the preceding discussion Kenya seems to occupy a unique place within the top 10 African countries. A number of explanations could be offered for the country's dramatic ascendance of web traffic numbers after 2012.
  - First, there is a generally held view that there has been an increase in access to internet within developing countries and particularly in sub-Saharan Africa. While there are studies that show increasing numbers of internet users, no studies show such dramatic increases as Kenya demonstrated within a period of a few years (West 2015).
  - Second, and the most likely explanation, is that Google Analytics increased the accuracy of its data on Kenya after 2012. This is supported by various sources demonstrating Kenyan efforts to leverage Google and other mapping applications in aspects such as road and urban planning (Mahabir, Stefanidis et al. 2017) as well as the development of an online directory for small and medium size businesses beginning in 2012 culminating in the current Kenyan Business Online portal (Halliday 2012).

# Discussions: Web traffic trends

- This second explanation offers more validity considering that between 2009 and 2013 four African countries were within the same statistical range until Kenya's dramatic changes happened after 2014




| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|
| Kenya | 1,208 | 2,626 | 2,585 | 2,912 | 17,226 | 65,643 |
| Nigeria | 1,174 | 2,429 | 2,968 | 2,604 | 22,089 | 18,683 |
| Tanzania | | 1,189 | 1,128 | 1,182 | 9,836 | 4,713 |
| Ghana | 614 | 1,189 | 1,660 | 1,085 | 9,093 | 4,900 |

# Conclusion

- Fundamental to any web analytics tool is the ability to provide trustworthy statistics. However, there are concerns about the accuracy of the longitudinal data based on the litany of inconsistencies demonstrated in this presentation and particularly the top five African countries.
  - First, there is inconsistency in the variety of details available for the different countries. South Africa and Nigeria have data about both city as well as regional locations but Kenya, Tanzania and Ghana only have data on their cities.
  - Second, the statistics of all five countries reveal the presence of the category titled “not set” : South Africa (the 9$^{th}$ ranked region), Nigeria (the 3$^{rd}$ ranked region and twice as 5$^{th}$ and 8$^{th}$ cities), Kenya (the 1$^{st}$ and 3$^{rd}$ ranked cities), Tanzania (the 2$^{nd}$ and 3$^{rd}$ ranked cities), and Ghana (the 2$^{nd}$ and 4$^{th}$ ranked cities).
  - Third, there are fundamental issues about accuracy when for Kenya, a city titled Kenya is ranked as 9$^{th}$, for Tanzania a city titled Tanzania is ranked as 7$^{th}$ while in Ghana a city titled Ghana is ranked 9$^{th}$. In addition for Ghana three different cities are listed twice: Accra ranked 1$^{st}$ and 3$^{rd}$, Kumasi ranked 5$^{th}$ and 7$^{th}$, as well as Cape Coast ranked 6$^{th}$ and 8$^{th}$.
- Therefore, we are all urged to use web analytics tools but with a critical eye. To use an old Russian proverb that is translated to “Trust but verify”

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