Malawi Use Case

Dashboard Use Manual

Version – 1 0

Document Information and Revision History

Version	Date	Author	Reviewer	Remarks
1 0	03/01/2019	Infosys	Infosys	1st version

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1.0 Introduction

This document covers details of Dashboards required for Malawi Health Post Allocation Optimization.

The Dashboards are divided into 8 categories and these categories are -

- Geographical overview -Malawi
- Population distribution
- Health post coverage
- Cell tower coverage
- Cell phone usage
- Population density mapping
- Long term population movement
- Short term population movement

2.0 Geographical overview -Malawi

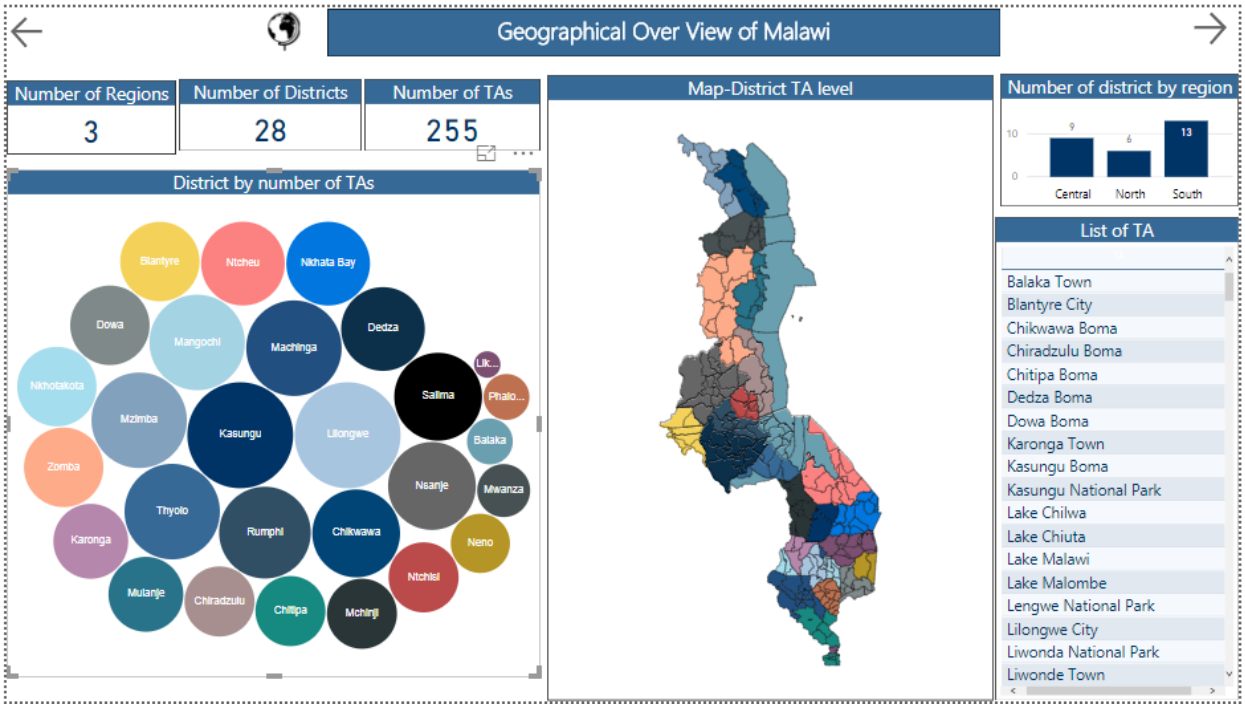
2.1 Overview

This dashboard will provide details of # of regions, districts and TAs within Malawi. This will also provide # of districts within each regions and # of TAs within each district. This will help to understand the size of regions/districts/TAs.

2.2 Input required

This Dashboard is primarily built on information provided by administrative population data at TA level and a shape file of Malawi (At TA level) to visualize the map

2.3 Dashboard and Insight



- This tab provides information Hierarchy involved in Administration levels and units: Region->District->TA
- Distribution of districts across Regions
- Distribution TA across District (Size of Circle denotes number of TAs)
- List of TAs based of filters we apply.

3.0 Population Distribution -Malawi

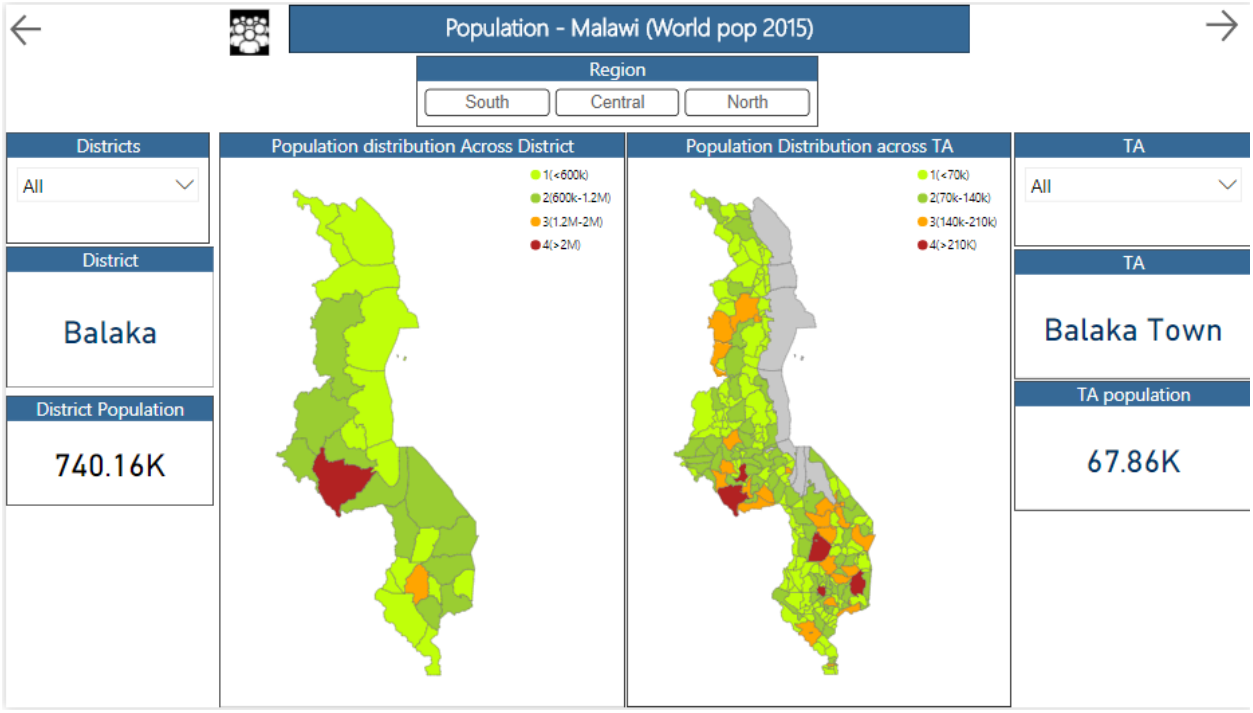
3.1 Overview

This dashboard will provide details of population across regions, districts and TAs within Malawi.

3.2 Input required

We have used World population data -2015 and shape file of Malawi at District level and TA level.

3.3 Dashboard and Insight



- At District level Lilwonge has highest population having more than 2.6 million people and second highest is Blantyre around 1.2 million
- At TA level Lilwonge city has highest population having more than 0.9 million people and second highest is Blantyre city around 0.8 million
- Visually through map we can observe North region is less populated than Central and South region

4.0 Health post coverage

4.1 Overview

This dashboard will provide details of Health posts setup across Malawi and coverage of health post considering each health post serves for 5km radius

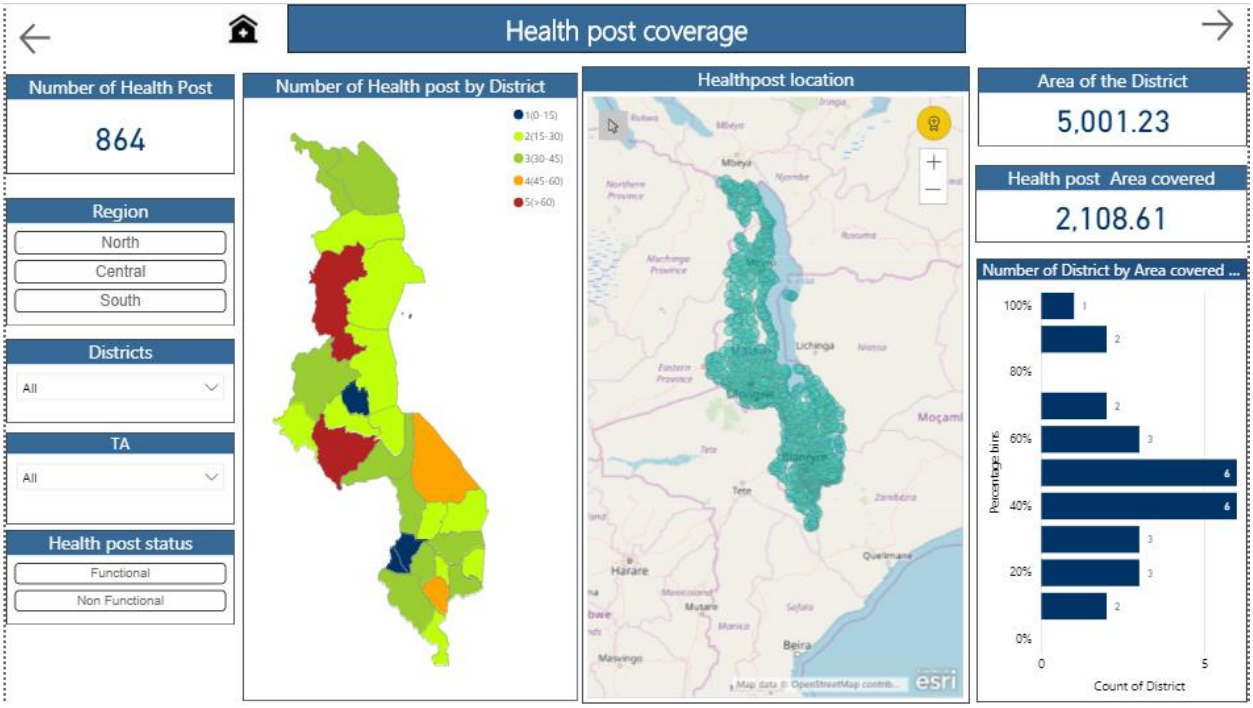
4.2 Input required

Health post information were considered as input. Using the same data based on each coordinates of health facility a circle of 5km radius was calculated and Area covered by Health post at each District level was derived.

Area of each district calculated using Malawi- district shape file.

Percentage of Area covered by health post were calculated for each district and those percentages were binned

4.3 Dashboard and Insight



- Distribution of number of health post at each district has been visually represented in shape map- Malawi
- Health post location maps helps in showing area it has been covered.
- Using the bins created in Number of District by area covered (%) we can identify districts which are well covered and least covered

5.0 Cell Tower Coverage

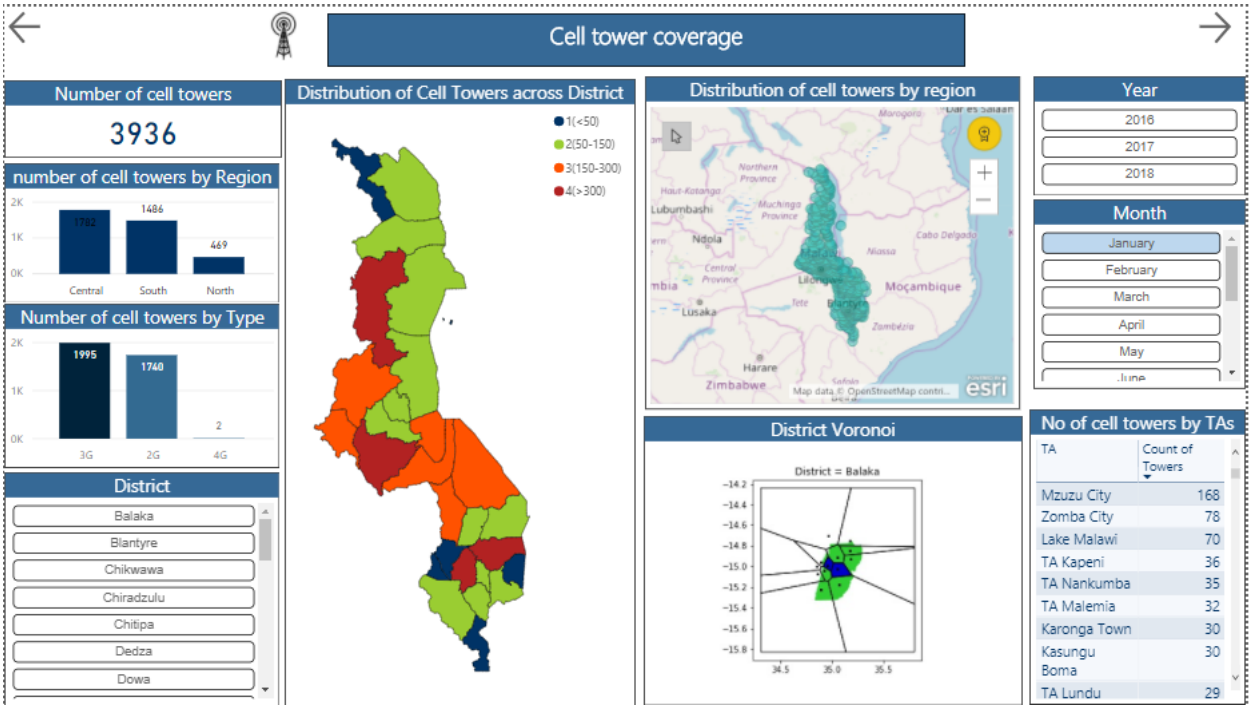
5.1 Overview

This dashboard will provide details of Cell towers setup across Malawi and coverage in each districts

5.2 Input required

Cell tower information including the co-ordinates, shape map and voronoi images of district is used as input.

5.3 *Dashboard and Insight*



- Map represent which distribution of number of Cell towers across districts
- While referring to "Distribution of cell towers by region" we can use filters Year and month to understand what is the earliest point of time the tower has started become active
- Voronoi images of each district helps us understand how the district has been divided according to location of each cell towers

6.0 Cell Phone Usage

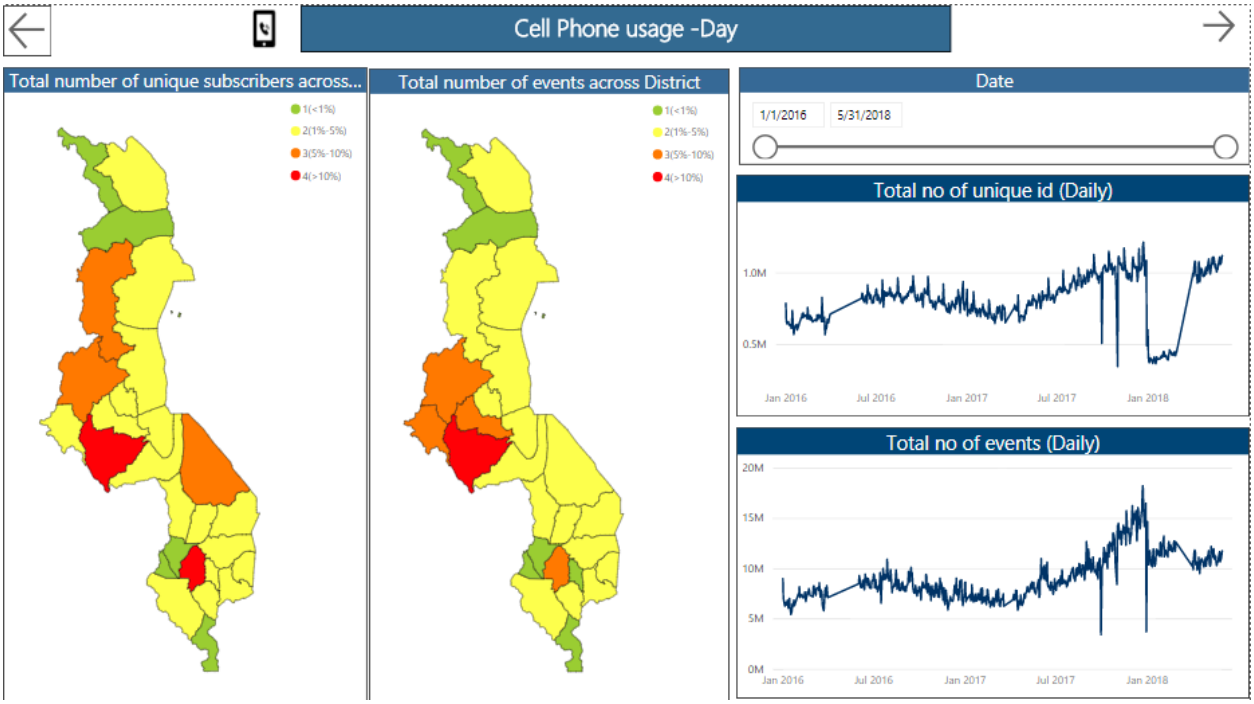
6.1 *Overview*

This dashboard will provide details on number of unique subscribers and number of events across Malawi between Jan 2016 – May 2018

6.2 *Input required*

Mno daily aggregated data and Master data of cell tower information for each district are the inputs required

6.3 *Dashboard and Insight*



- Line chart on number of unique subscribers and number of events helps us understand the trend over the time
- Both map clearly helps us understand the percentage distribution among districts in terms of number of unique subscribers and number of events
- We can observe Lilwonge and Blantyre district tops in terms of number of unique subscribers and number of events

7.0 Population Density mapping

7.1 *Overview*

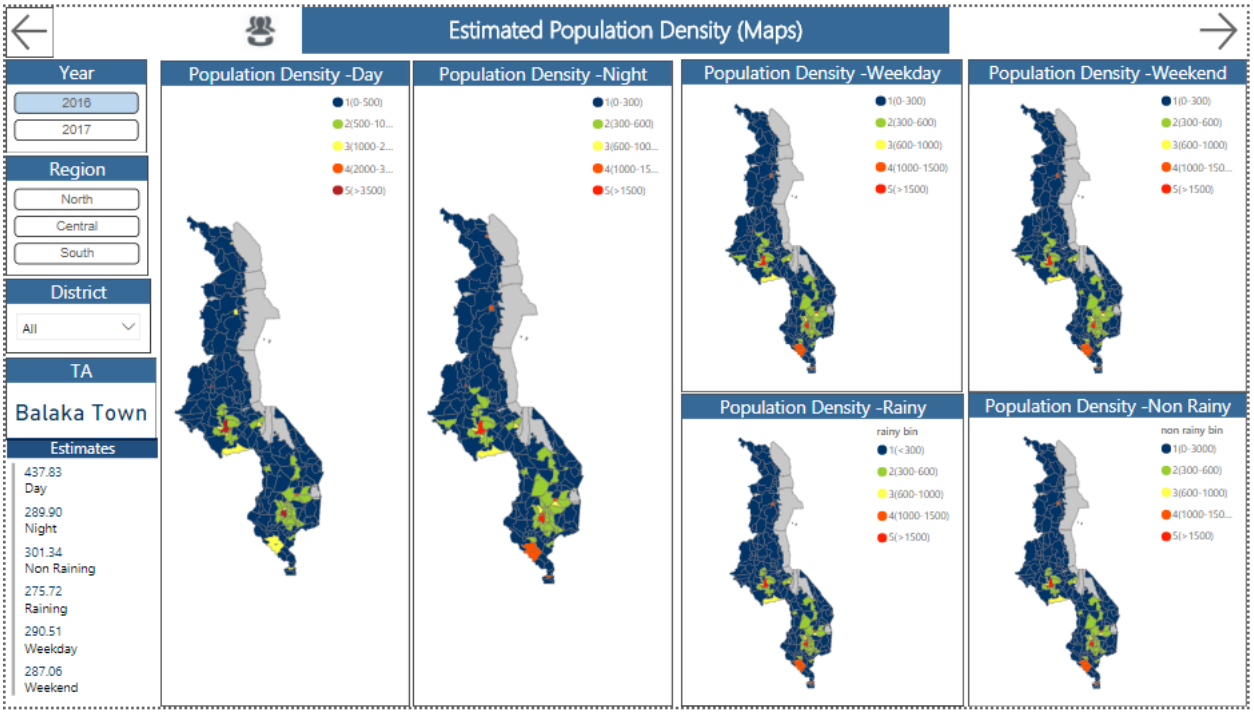
This dashboard represents details of results of Population Density Estimated using Call Density.

This dashboard has been split into parts: one showing estimated population density in maps at TA level and other showing comparison of estimated population density

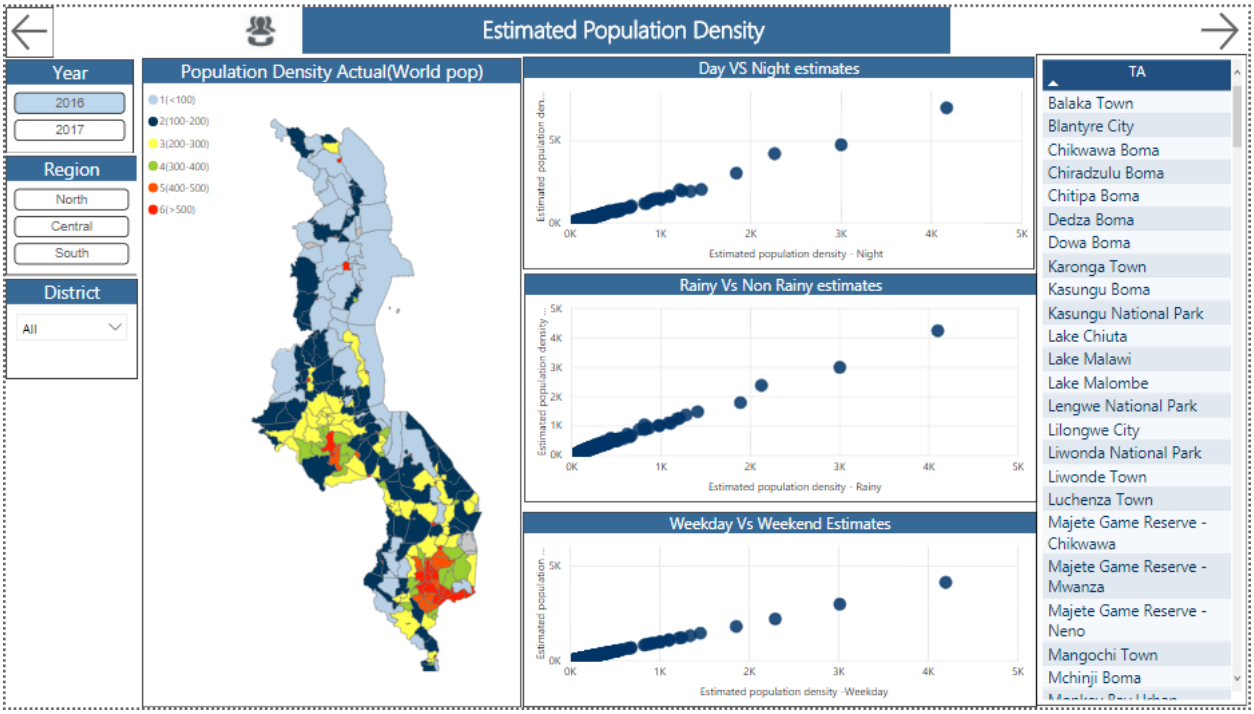
7.2 *Input required*

Shape map of Malawi at TA level and estimated value of Population density at TA level has been used to build this dashboard

7.3 Dashboard and Insight



- This Dashboard helps us to visualize estimated population density in maps
- We can observe that South region has more number of TAs having high Population density whereas North region has all the TAs have low population density.
- In Central and South Region we can observe more number of TAs become high populated density at night compared to day



- This dashboard helps us to compare population density estimates
- We have actual population density from world population data for 2016 and 2017 which gives us actual density
- In Day VS Night estimates plot we can infer that for each TA population density at Day time is as almost as twice at density at night time
- We can observe that estimates between Weekend and Weekday are almost equal whereas for rainy VS non rainy only TA Pemba and Kasunga Boma have difference in population density estimates

8.0 Long Term Population Movement

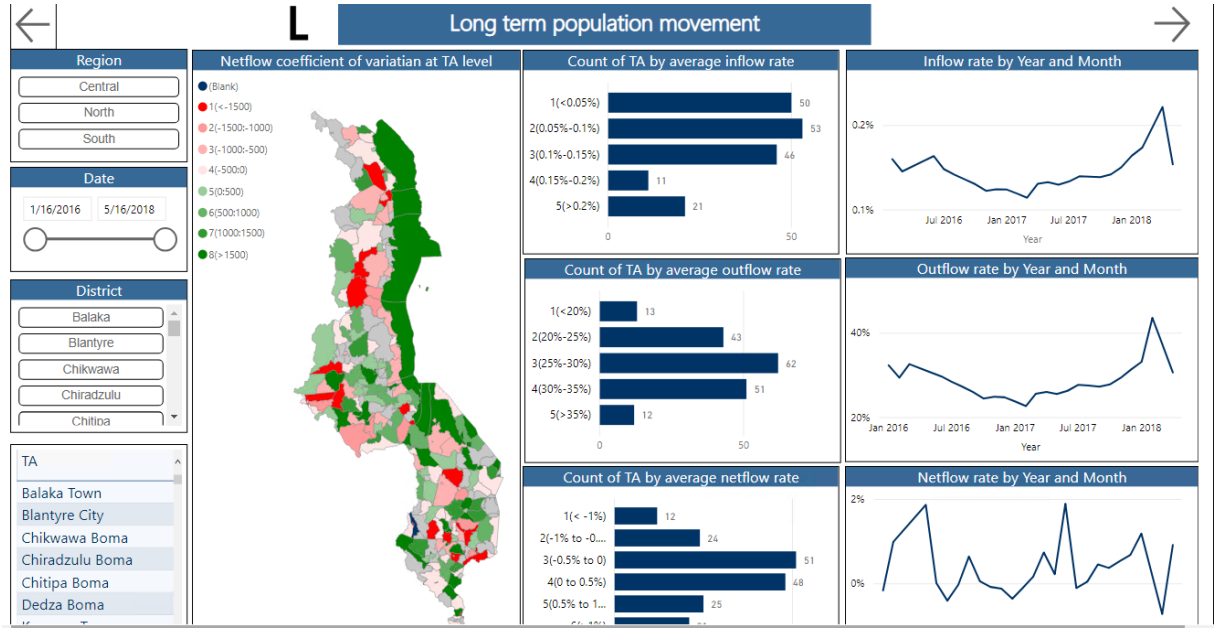
8.1 Overview

This dashboard represents details of results of Long Term Population Movement.

8.2 Input required

Shape map of Malawi at TA level and result of Long Term population movement (ratios) are the input

8.3 Dashboard and Insight



The TAs are being binned under Average outflow rate, inflow rate and netflow rate so that we can look into TAs under each group and can observe monthly rates.

9.0 Short Term Population Movement

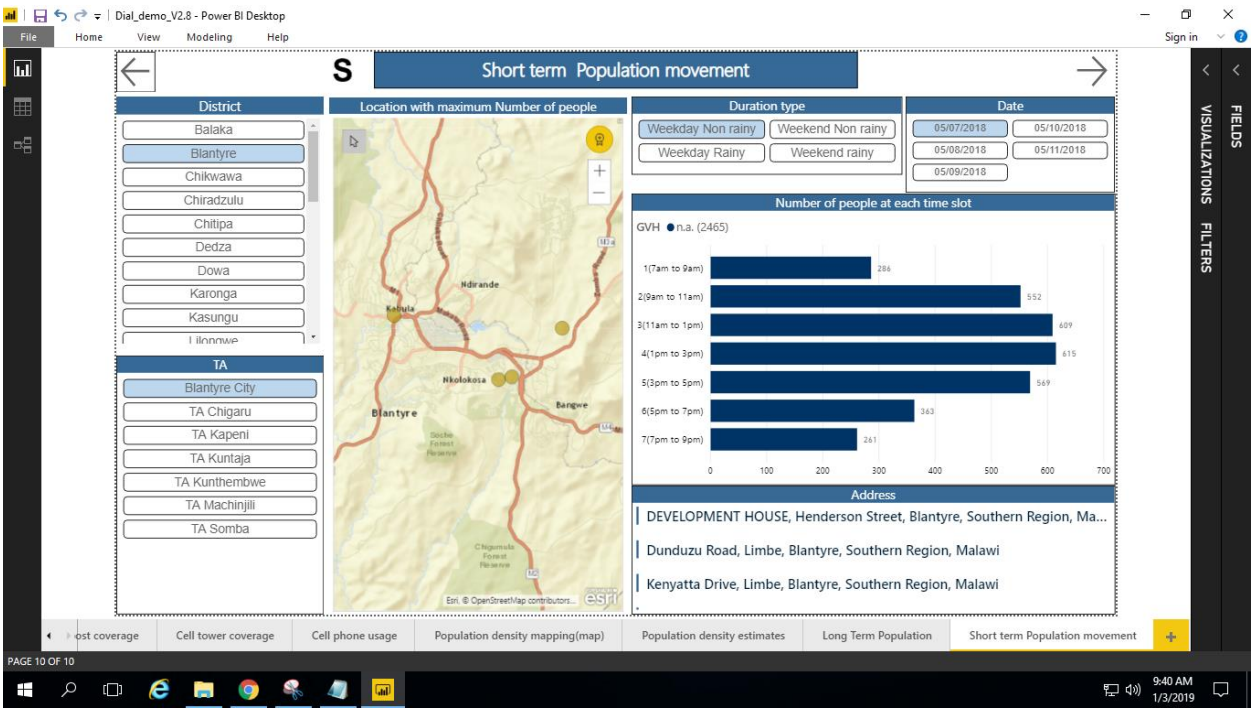
9.1 Overview

This dashboard represents details of results of Short Term Population Movement.

9.2 Input required

Shape map of Malawi at TA level and result of Long Term population movement(ratios) are the input

9.3 Dashboard and Insight



We can select particular District and for a particular TA given the Duration Type across time slots we can see maximum how many people have called in a GVH with its cell tower location in map. This helps us infer maximum number of accumulated in at various GVH across time slots in a day within each TA.