

THE UNIVERSITY OF TEXAS AT DALLAS

INTELLIGENCE ANALYTICS

CHALLENGE 5.0

USE CASE DEVELOPMENT TOPIC:

UNICEF'S FLAGSHIP PUBLICATION AFFECTING CHILDREN

DIMENSIONAL MODELLING USING TABLEAU

CODE GEEKS

Members:

Harshitha Kurra (HXK180060)

Shylaja Vijayaraghavan (SXV190013)

Priyanka Arvind Savant (PAS180003)

The background: We explained our hypothesis in detail using graphical representation, with major indicators that affects the mortality rate of children under 5.

Indicators:

- 1) 'urbanized population %'
- 2) 'total adult literacy rate %'
- 3) 'crude birth rate'
- 4) 'minimum acceptable diet 6-23 months'
- 5) 'under 5 mortality rate'
- 6) 'under 5 mortality rank'

Categories:

- 1) Basic Indicators
- 2) Nutrition
- 3) Demographic Indicators
- 4) Women
- 5) Health

Hypothesis:

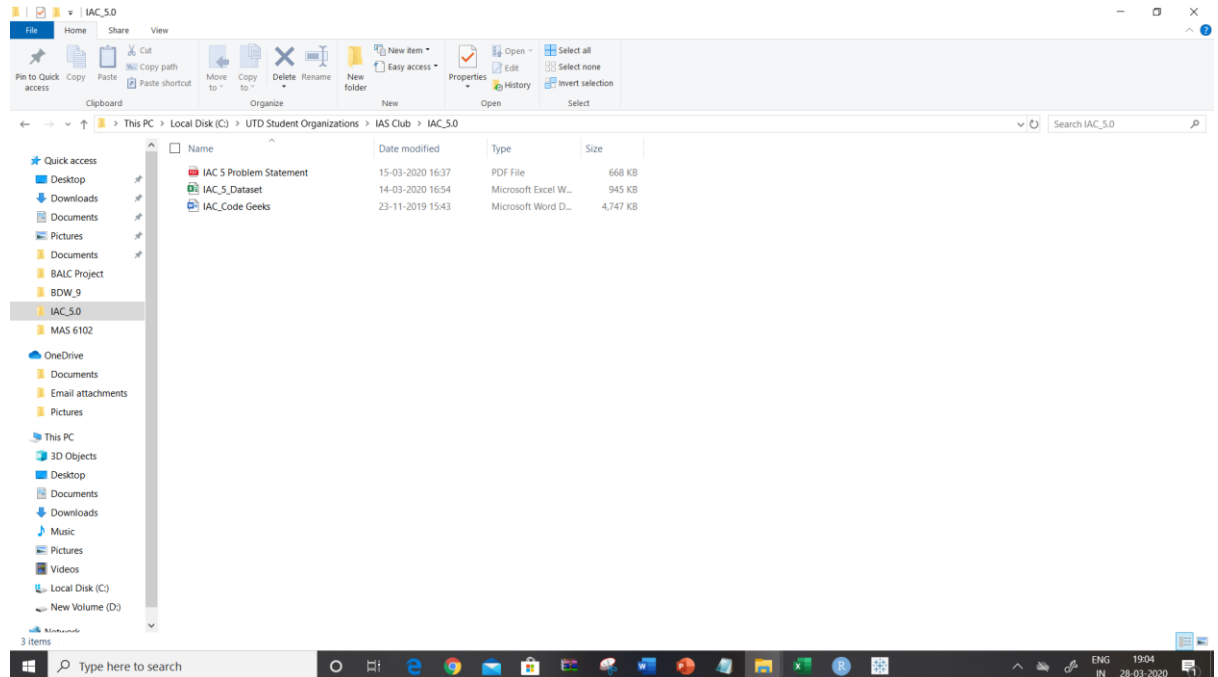
Null hypothesis: Countries with 1) less 'urbanized population %', 2) less 'total adult literacy rate %' and 3) more 'crude birth rate' 4) less 'minimum acceptable diet 6-23 months' 5) less 'demand for family planning satisfied with modern methods (%)' will have more 'under 5 mortality rate' and higher 'under 5 mortality rank'.

Alternate hypothesis: Countries with 1) more 'urbanized population %', 2) more 'total adult literacy rate %' and 3) less 'crude birth rate' 4) more 'minimum acceptable diet 6-23 months' 5) more 'demand for family planning satisfied with modern methods (%)' have very less 'under 5 mortality rate' and lower 'under 5 mortality rank'.

Step by step process of dimensional Modelling (Analysis Part) in Tableau:

1. Data Sourcing:

We have sourced our dataset from the document sent by IAS Student Organization.



2. Data cleaning:

Areas we have touched upon are, dealing with null entries, and removal of unused dimensions.

AutoSave

File Home Insert Draw Page Layout Formulas Data Review View Help

Clipboard Font Alignment Number Styles Cells Editing Ideas

Q29

TABLE 1. BASIC INDICATORS

	Under-5 mortality rate	Under-5 mortality rate	Under-5 mortality rate by sex 2016		Infant mortality rate (under 1)		Neonatal mortality rate	Total population (thousands)	Annual number of births (thousands)	Annual number of under-5 deaths	Life expectancy at birth (years)	State adult literacy rate (%)	Primary school net enrolment ratio (%)
	1990	2016	male	female	1990	2016	2016	2016	2016	2016	2016	2011-2016*	2011-2016*
Alghanistan	25	177	70	74	66	120	53	40	34,656	1,143	80	64	32
Albania	114	40	14	15	12	35	12	6	2,926	35	0	78	97
Algeria	78	49	25	27	24	41	22	16	40,606	949	24	76	75
Andorra	179	9	3	3	3	7	2	1	77	-	0	-	100
Angola	17	221	83	88	76	131	55	29	28,813	1,181	96	62	66
Anguilla	-	-	-	-	-	-	-	-	15	-	-	-	-
Antigua and Barbuda	133	26	9	9	8	25	5	4	101	2	0	76	99
Argentina	126	29	11	12	10	26	10	6	43,847	754	8	77	98
Armenia	118	50	13	15	12	42	12	7	2,925	40	1	75	100
Australia	164	9	4	4	3	8	3	2	24,126	311	1	83	-
Austria	164	10	4	4	3	8	3	2	8,712	83	0	82	-
Azerbaijan	68	95	31	34	28	75	27	18	9,725	176	5	72	100
Bahamas	126	24	11	11	10	20	9	6	391	6	0	76	-
Bahrain	142	23	8	8	7	20	7	3	1,425	21	0	77	95
Bangladesh	62	144	34	37	32	100	28	20	1,62,952	3,110	106	72	73
Barbados	123	18	12	13	11	16	11	8	285	3	0	76	-
Belarus	164	15	4	4	3	12	3	2	9,480	114	0	73	100

Basic Indicators Nutrition Health HIV-AIDS Education Demographic Indicators Women Child Protection

Ready

For the purpose of our visualization we have replaced null values with 0.

AutoSave

MAC_5_Dataset (1) - Excel

Harshitha Kuma

Share

Comments

FileHomeInsertDrawPage LayoutFormulasDataReviewViewHelp

Search

ClipboardFontAlignment

GeneralConditional FormattingFormat as TableCell Styles

InsertDelete FormatCells

AutoSumFillClear

Sort & Find & Filter - Select

Ideas

UPDATES AVAILABLE Updates for Office are ready to be installed, but first we need to close some apps. Update now

M13

0

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
1		TABLE 1. BASIC INDICATORS																							
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									
16																									
17																									
18																									
19																									
20																									
21																									
22																									

Ready

Type here to search

2021 28-03-2020

To make the structure of our dataset simpler we have augmented the rows and columns by removing less useful information.

AutoSave OFF

Harshitha Kurra

IAC_5_Dataset - Excel

FileHomeInsertDrawPage LayoutFormulasDataReviewViewHelp

Search

ClipboardFontAlignmentNumberStylesCellsEditingIdeas

B229

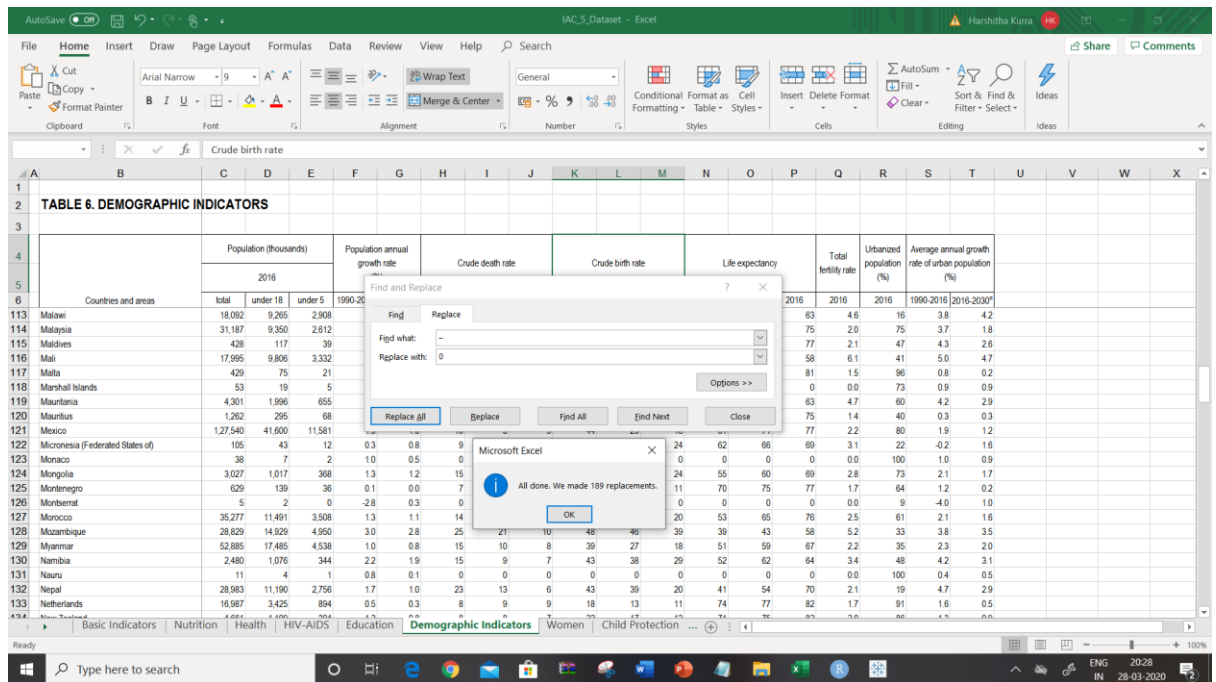
- Data not available.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X		
1																										
2		TABLE 1. BASIC INDICATORS																								
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										
25																										
26																										
27																										
28																										
29																										

Ready

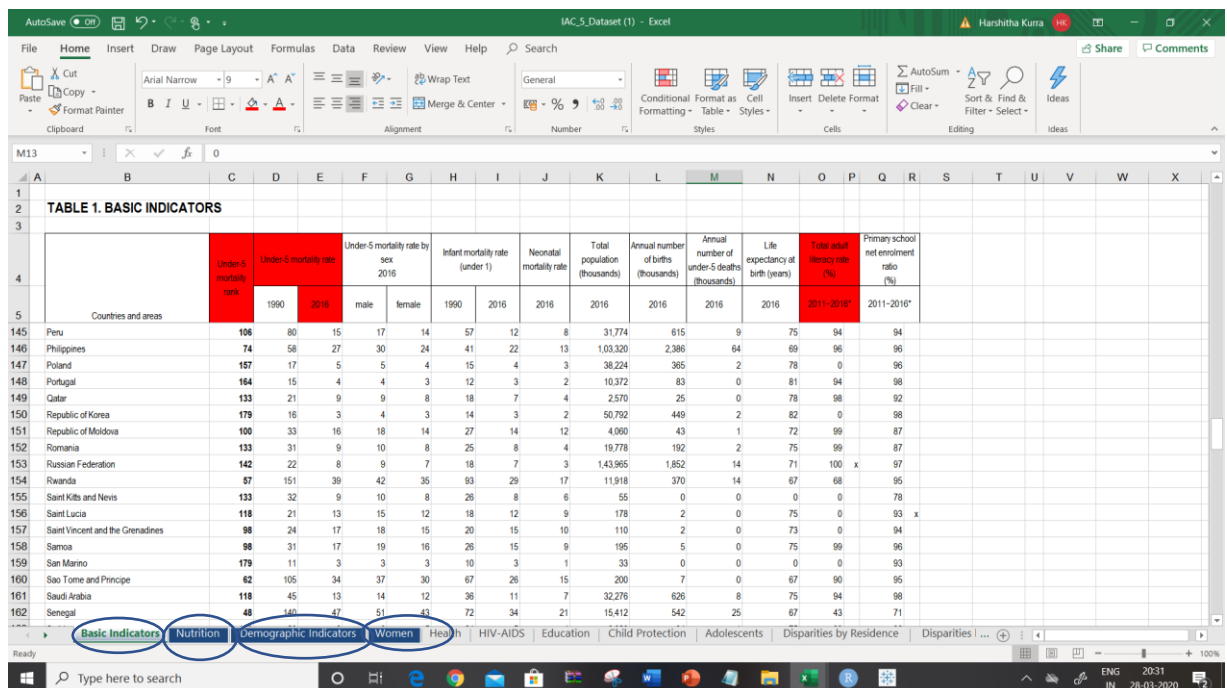
Type here to search

2027 JUN 28-08:20:20



All cleaning is done through MS Excel.

We have consolidated our data files into one excel sheet.



3. Data Modelling in Tableau

We have imported our Consolidated sheet in Tableau.

Tableau - IAC_5_0_Code_Geeks

File Data Server Window Help

Connections: IAC_5_Dataset (Microsoft Excel)

Sheets: Cleaned with Data Interpreter, Review the results (To undo changes, clear the check box.)

- Adolescents
- Basic Indicators
- Child Protection
- Demographic Indicators
- Disparities b...sehold Wealth
- Disparities by Residence
- Early Childhood Development
- Economic Indicators
- Education
- Health
- HIV-AIDS
- Nutrition
- Women
- Adolescents B4.E6
- Adolescents B8.Z209
- Adolescents B211.O224
- Adolescents Y213.Z224
- Basic Indicators B4.R208
- Child Protection B8.A1730
- New Union

Basic Indicators (IAC_5_Dataset)

Connection: Live Extract Filters: 0 Add

Basic Indicators

- Demographic Indicators
- Health
- Nutrition
- Women

Sort fields: Data source order Show aliases Show hidden fields 200 rows

Basic Indicators	Basic Indicators	Basic Indicators	Basic Indicators	Basic Indicators	Basic Indicators	Basic Indicators	Basic Indicators	Basic Indicators	Basic Indicators	Basic Indicators
Countries and ...	Under-5 mort...	Under-5 mort...	Under-5 mort...	Under-5 mort...	Under-5 mort...	Infant mortalit...	Infant mortalit...	Neonatal mor...	Total populati...	Basic Indica...
Afghanistan	25	177	70	74	66	120	53	40 0000	34,656.03	
Albania	114	40	14	15	12	35	12	6 0000	2,926.35	
Algeria	78	49	25	27	24	41	22	16 0000	40,606.05	
Andorra	179	9	3	3	3	7	2	1 0000	77.28	
Angola	17	221	83	88	76	131	55	29 0000	28,813.46	
Anguilla	0	0	0	0	0	0	0	0 0000	14.76	
Antigua and Bar...	133	26	9	9	8	25	5	4 0000	100.96	
Argentina	126	29	11	12	10	26	10	6 0000	43,847.43	
Armenia	118	50	13	15	12	42	12	7 0000	2,924.82	
Australia	164	9	4	4	3	8	3	2 0000	24,125.85	
Austria	164	9	4	4	3	8	3	2 0000	24,125.85	

0 Data Source QUESTION 1 QUESTION 2 - Insight 1 QUESTION 2 - Insight 2 QUESTION 2 - Insight 3 QUESTION 2 - Insight 4 Dashboard 1 Dashboard 2

Type here to search

To establish relationships among dimensions we join our tables using inner join.

Tableau - IAC_5_0_Code_Geeks

File Data Server Window Help

Connections: IAC_5_Dataset (Microsoft Excel)

Sheets: Cleaned with Data Interpreter, Review the results (To undo changes, clear the check box.)

- Adolescents
- Basic Indicators
- Child Protection
- Demographic Indicators
- Disparities b...sehold Wealth
- Disparities by Residence
- Early Childhood Development
- Economic Indicators
- Education
- Health
- HIV-AIDS
- Nutrition
- Women
- Adolescents B4.E6
- Adolescents B8.Z209
- Adolescents B211.O224
- Adolescents Y213.Z224
- Basic Indicators B4.R208
- Child Protection B8.A1730
- New Union

Basic Indicators (IAC_5_Dataset)

Connection: Live Extract Filters: 0 Add

Basic Indicators

- Demographic Indicators
- Health
- Nutrition
- Women

Implementation of inner join among tables to establish dimensional relationships.

Sort fields: Data source order Show aliases Show hidden fields 200 rows

Basic Indicators	Basic Indicators	Basic Indicators	Basic Indicators	Basic Indicators	Basic Indicators	Basic Indicators	Basic Indicators	Basic Indicators	Basic Indicators	Basic Indicators
Countries and ...	Under-5 mort...	Under-5 mort...	Under-5 mort...	Under-5 mort...	Under-5 mort...	Infant mortalit...	Infant mortalit...	Neonatal mor...	Total populati...	Basic Indica...
Afghanistan	25	177	70	74	66	120	53	40 0000	34,656.03	
Albania	114	40	14	15	12	35	12	6 0000	2,926.35	
Algeria	78	49	25	27	24	41	22	16 0000	40,606.05	
Andorra	179	9	3	3	3	7	2	1 0000	77.28	
Angola	17	221	83	88	76	131	55	29 0000	28,813.46	
Anguilla	0	0	0	0	0	0	0	0 0000	14.76	
Antigua and Bar...	133	26	9	9	8	25	5	4 0000	100.96	
Argentina	126	29	11	12	10	26	10	6 0000	43,847.43	
Armenia	118	50	13	15	12	42	12	7 0000	2,924.82	
Australia	164	9	4	4	3	8	3	2 0000	24,125.85	
Austria	164	9	4	4	3	8	3	2 0000	24,125.85	

0 Data Source QUESTION 1 QUESTION 2 - Insight 1 QUESTION 2 - Insight 2 QUESTION 2 - Insight 3 QUESTION 2 - Insight 4 Dashboard 1 Dashboard 2

Type here to search

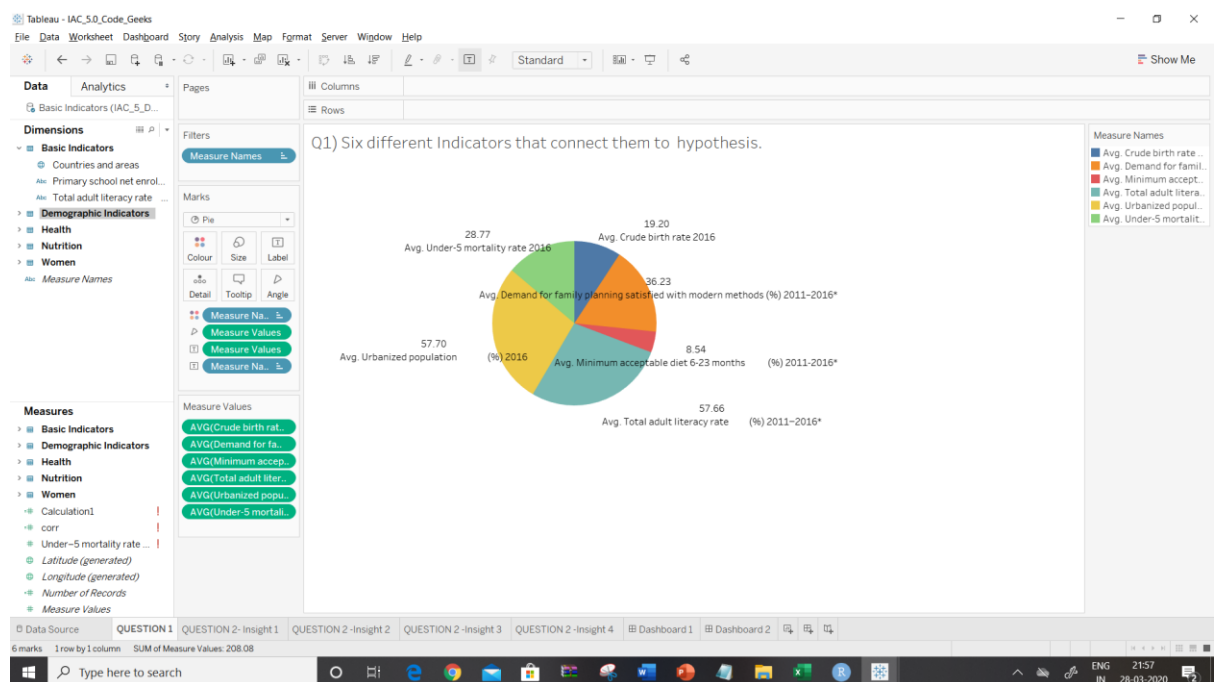
Visualization (Graphical) part:

Hypothesis:

Null hypothesis: Countries with 1) less 'urbanized population %', 2) less 'total adult literacy rate %', 3) more 'crude birth rate', 4) less 'minimum acceptable diet 6-23 months' and 5) less 'demand for family planning satisfied with modern methods (%)' have more 'under 5 mortality rate' and higher 'under 5 mortality rank'.

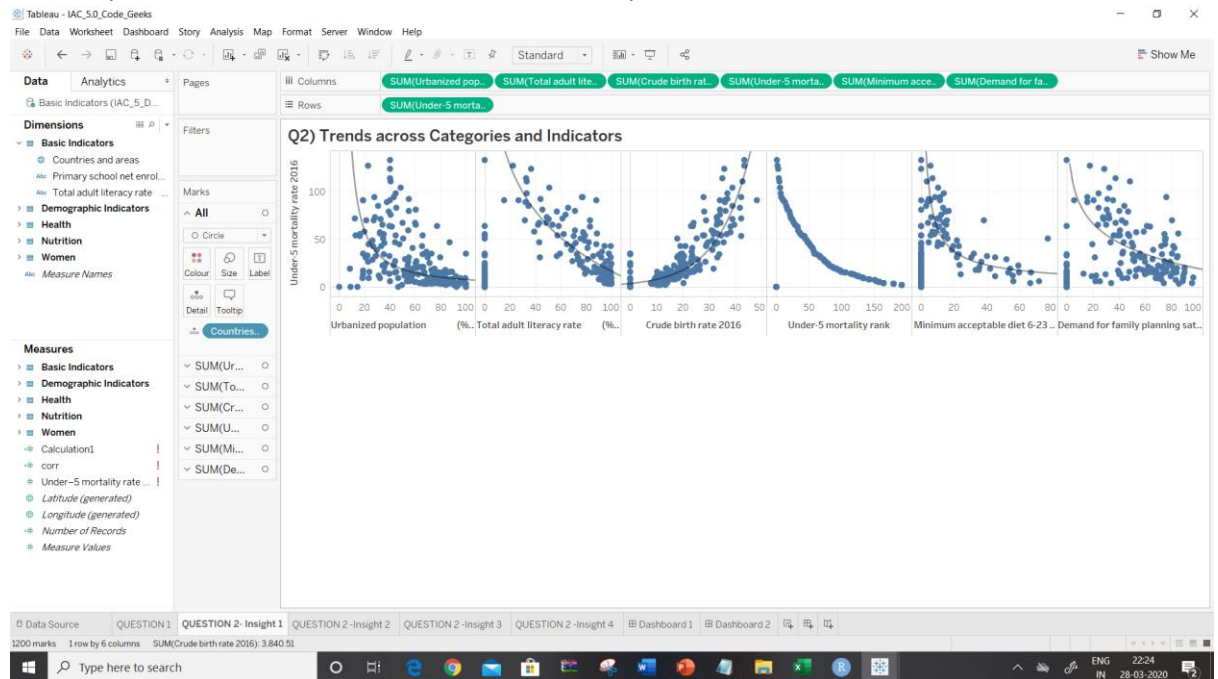
Alternate hypothesis: Countries with 1) more 'urbanized population %', 2) more 'total adult literacy rate %', 3) less 'crude birth rate', 4) more 'minimum acceptable diet 6-23 months' and 5) more 'demand for family planning satisfied with modern methods (%)' have very less 'under 5 mortality rate' and lower 'under 5 mortality rank'.

QUESTION 1: Identify at least 5 difference indicators and connect them to present a hypothesis.

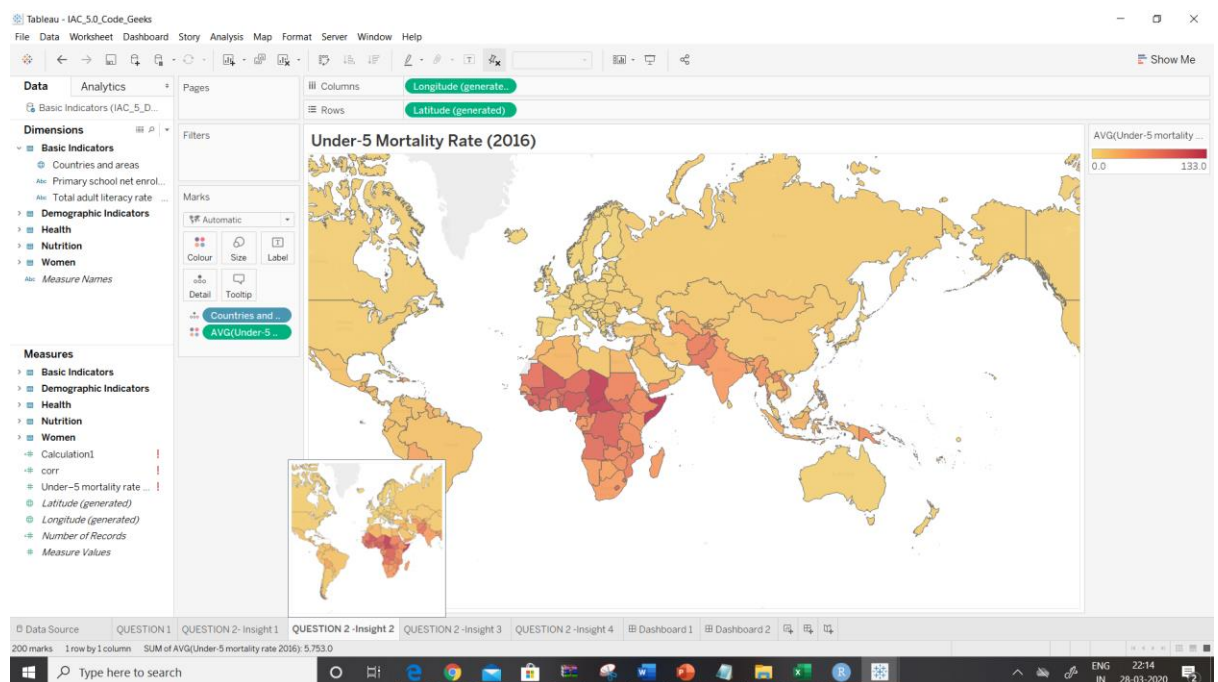


QUESTION 2: Identify the trends for any one of the categories and identify the causal factors.

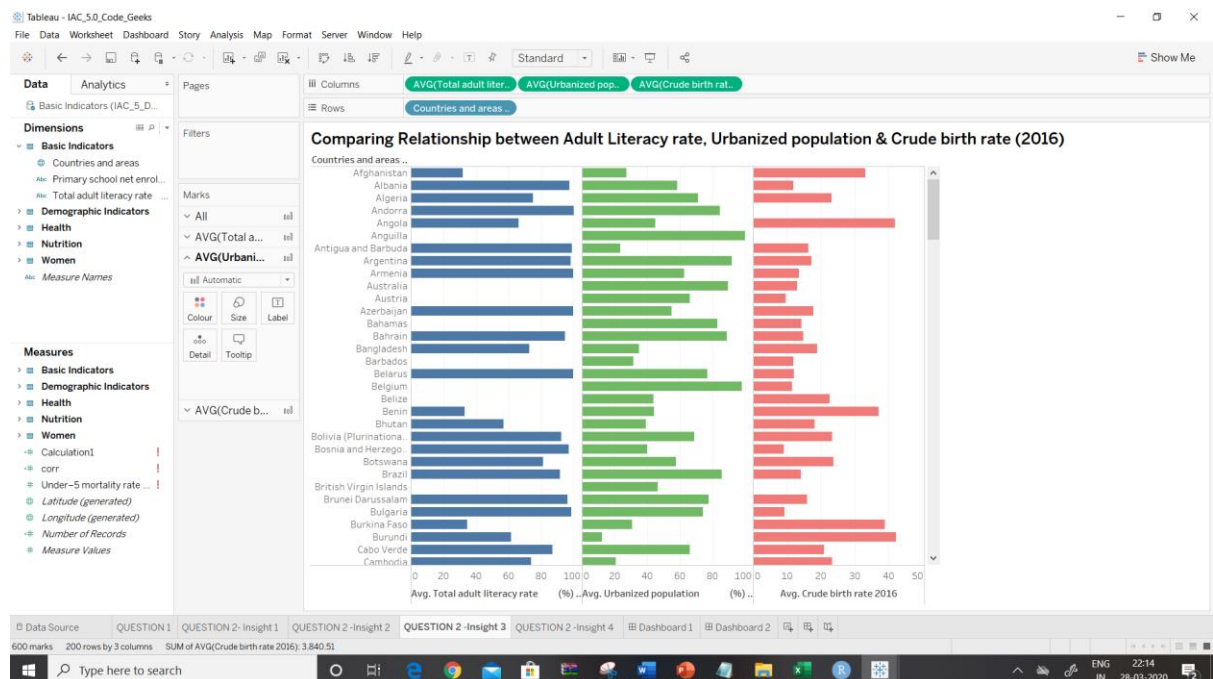
Insight 1: Checking trends of six different indicators they are 'urbanized population %', 'total adult literacy rate %', 'crude birth rate', 'minimum acceptable diet 6-23 months', 'demand for family planning satisfied with modern methods (%)' and more 'under 5 mortality rank' will have effect on 'under 5 mortality rate'.



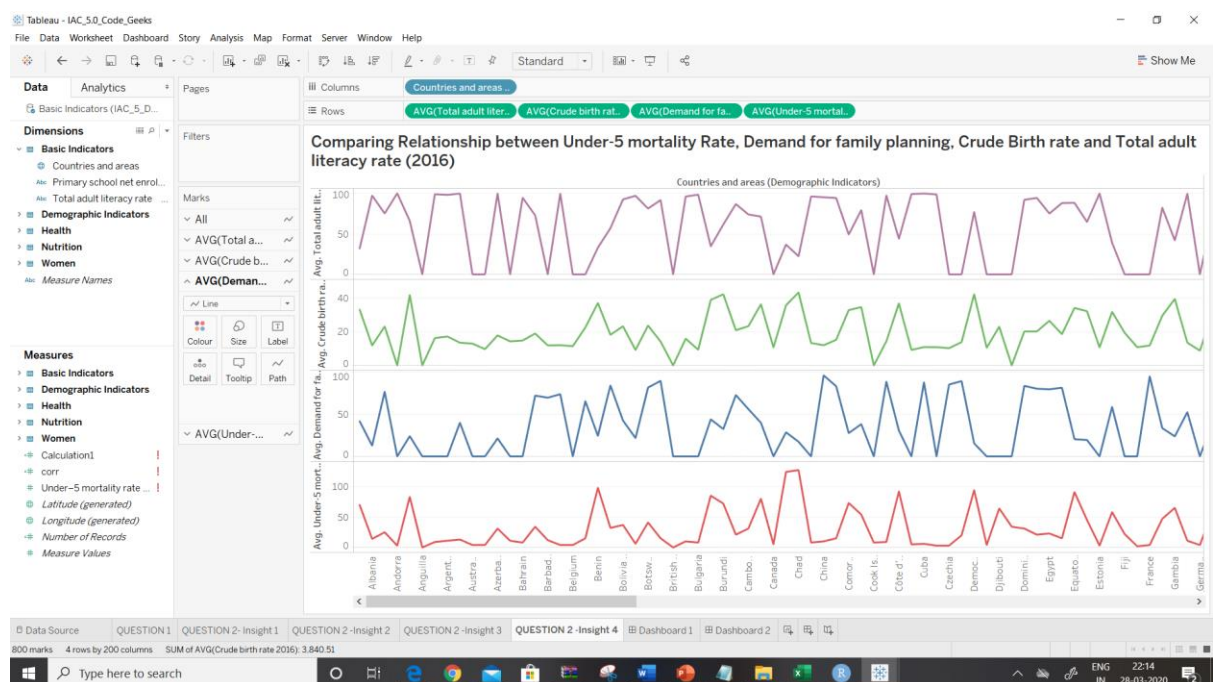
Insight 2: World Map show casing 'Average UNDER MORTALITY RATE(2016)' for each COUNTRY'



Insight 3: Comparing Relationship between Adult Literacy rate, Urbanized population & Crude birth rate (2016)



Insight 4: Comparing Relationship between Under-5 mortality Rate, Demand for family planning, Crude Birth rate and Total adult literacy rate (2016),



CONCLUSION:

From above results we can conclude that:

According to pie chart (Question 1), Urbanized population contributes to 57.7% of decrease in under-5 mortality rate, followed by minimum acceptable diet 6-23 months contributing to 57.66%.

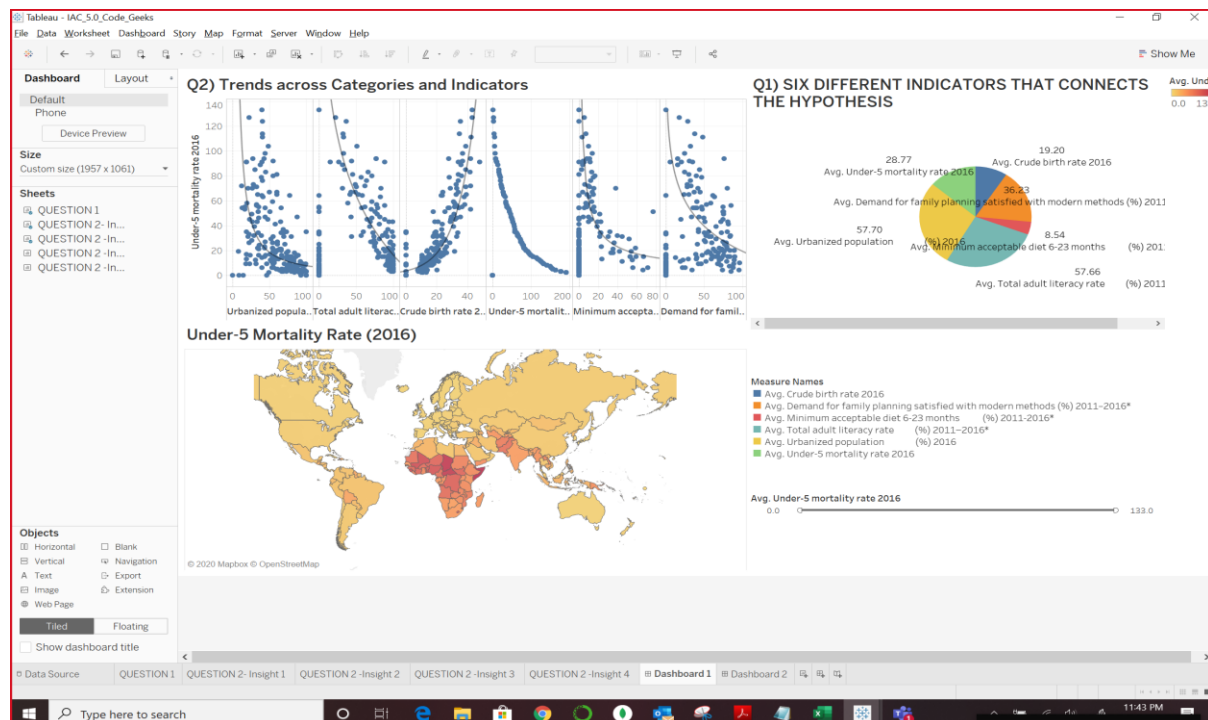
From above insights 1 & 2, Somalia has highest under-5 mortality rank (rank=1) with under-5 mortality rate (2016) as 133. Hence it is with the reddest in colour. Chad is second highest (rank=2) with under-5 mortality rate (2016) as 127. Central African Republic ranks 3rd with 124, and Sierra Leone ranks 4th with 114.

On the other hand, Finland, Iceland, Luxembourg and Slovenia have the least under-5 mortality rate as 2. Andorra, Cyprus, Czechia, Estonia, Italy, Japan, Monaco, Norway, Republic of Korea, San Marino, Singapore, Spain and Sweden have the second least under-5 mortality rate as 3.

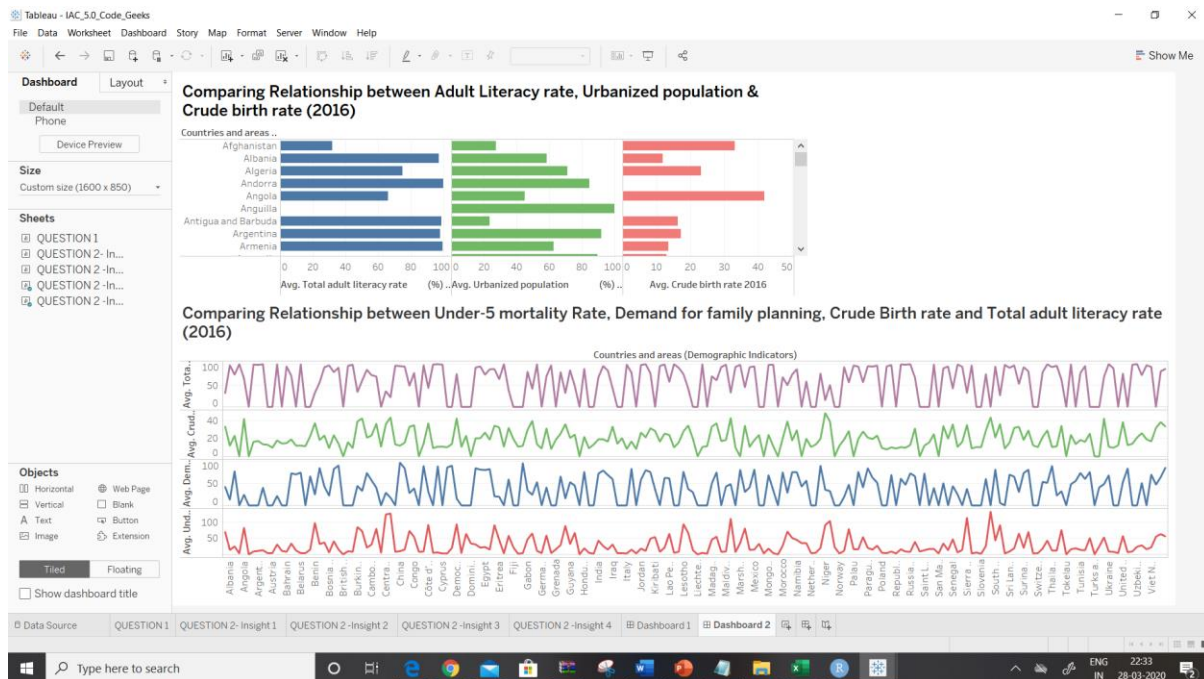
From above insights 3 & 4, we can conclude that, Countries with less 'urbanized population %', less 'total adult literacy rate %' will have more 'crude birth rate' of children under 5 and with less 'total adult literacy rate, less 'demand for family, with less 'minimum acceptable diet 6-23 months', will be affecting children under 5 by more 'under 5 mortality rate'.

DASHBOARD VIEW:

DASHBOARD 1: In this dashboard, we have a pie chart representing Question 1 : six indicators , Question 2 - Insight 1 : Trends of categories and indicators and Question 2 - Insight 2: World Map of Children with under 5 Mortality Rate(2016).



DASHBOARD 2: In this dashboard, Question 2 – Insight 3: we have horizontal bar chart showing the relationship between Adult Literacy rate, Urbanized population & Crude birth rate (2016) and Question 2 – Insight 4: we have line graph showing the relationship between Total adult literacy rate, Demand for family planning, Crude Birth rate and affecting children Under-5 mortality Rate(2016).



QUESTION 3: Present at least 5 recommendations to improve the quality of life of the kids.

RECOMMENDATIONS TO REDUCE AFFECT ON CHILDREN:

- 1) In some countries there is a smaller number of Adult literacy rate. In these countries, if we Encourage people to be more educated in schools, literacy rate increases and hence the mortality rate decreases.
- 2) To improve children health under 5 years, minimum acceptable diet 6-23 months percentage should be increased, so that for children under age 5, immune system will be boosted and they will be less infected compared to children with less minimum acceptable diet 6-23 months percentage.
- 3) Under 5 mortality rates decreases with decrease in crude birth rate. We need to educate people about the importance of family planning with modern methods.
- 4) We need to educate females during breast feeding, how important is their diet during trimesters and how that could impact the growth of the baby and their birthweight.
- 5) If adult literacy rate increases among rural population, there are high chances to reduce crude birth rate and under 5 mortality rates around countries, as people will be educated enough to go for family planning with modern methods.