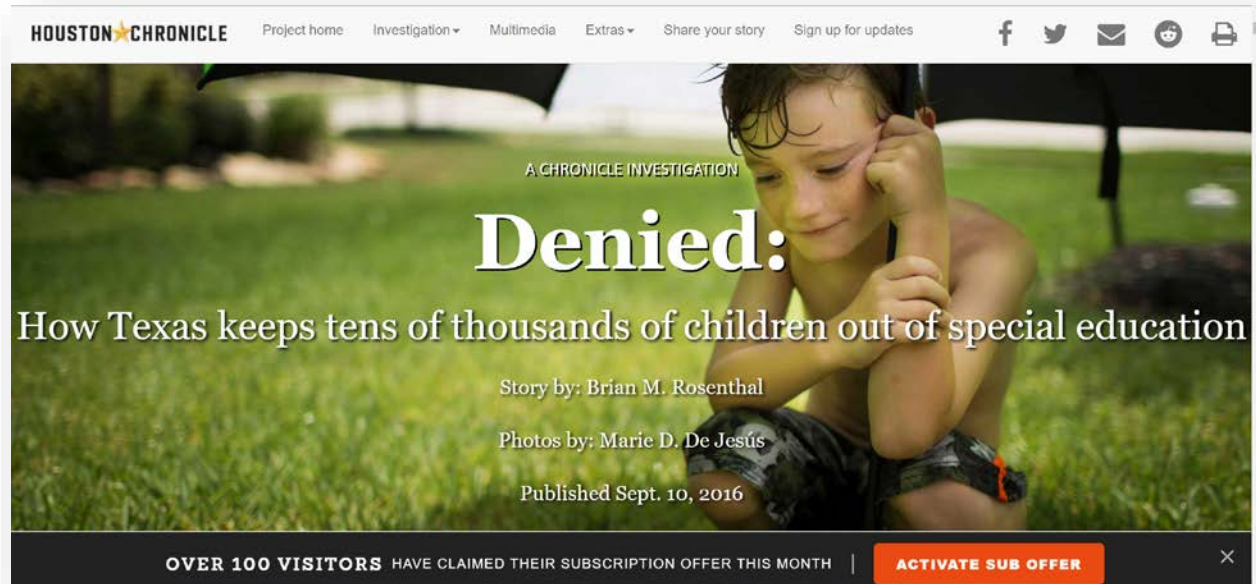


## TABLEAU – PAKISTAN EDUCATION RANKING

### EXAMPLE



Denied, Houston Chronicle, <http://www.houstonchronicle.com/denied/1/>

### CLEANING

1. Open Rankings\_2016\_V6\_Final.xlsx.<sup>1</sup>
2. Create a copy of Edu score 2016 in a new worksheet, name the new worksheet as PakistanTableau, also rename the copy as Original\_Education
3. Create a copy of School Infra score 2016 in PakistanTableau and name it as Original\_Infrastructure
4. Make a new sheet and copy just values the ranking data for Provinces for Education 2016. Name the new sheet as Education2016

<sup>1</sup> Source: [https://d3n8a8pro7vhmx.cloudfront.net/alifailaan/pages/1280/attachments/original/1463998373/Rankings\\_2016\\_V6\\_Final.xlsx?1463998373](https://d3n8a8pro7vhmx.cloudfront.net/alifailaan/pages/1280/attachments/original/1463998373/Rankings_2016_V6_Final.xlsx?1463998373)

A154									
	A	B	C	D	E	F	G	H	I
1	Rank 2016	District/ agency	Province/ territory	Education score	Enrolment score	Learning score	Retention score	Gender parity score	
152	-	Shigar	GB	-	-	-	-	-	
153									
154	Rank 2016		Province/ territory	Education score	Enrolment score	Learning score	Retention score	Gender parity score	
155	1		ICT	85.74	89.52	71.13	87.50	94.82	
156	2		AJK	81.68	73.42	66.60	92.00	94.70	
157	3		Punjab	73.56	70.33	62.73	66.00	95.18	
158	4		GB	73.21	58.55	60.30	87.00	86.99	
159	-		Pakistan	66.54	64.40	54.78	59.00	87.98	
160	5		KP	65.32	70.85	49.48	65.00	75.96	
161	6		Sindh	60.44	60.87	41.25	50.00	89.65	
162	7		FATA	54.05	62.10	50.80	31.00	72.30	
163	8		Balochistan	51.04	55.56	42.68	28.00	77.93	
164									
165									

5. Delete row 6 for Pakistan overall and the empty column B

A1							Rank 2016
	A	B	C	D	E	F	G
1	Rank 2016	Province/ territory	Education score	Enrolment score	Learning score	Retention score	Gender parity score
2	1	ICT	85.740863	89.515444	71.129807	87.5	94.818199
3	2	AJK	81.679298	73.419959	66.6	92	94.697232
4	3	Punjab	73.558842	70.330602	62.725	66	95.179765
5	4	GB	73.209697	58.548625	60.3	87	86.990164
6	5	KP	65.321205	70.849839	49.475	65	75.95998
7	6	Sindh	60.4418	60.866842	41.25	50	89.650357
8	7	FATA	54.048468	62.096536	50.8	31	72.297334
9	8	Balochistan	51.039804	55.556016	42.675	28	77.928199
10							
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30							
31							

- Move Provinces/Territory to the first column, insert a column and name it Year. Fill the column with 2016. Insert another column name and call it Topic and copy down with Education Score

	A	B	C	D	E	F	G	H	I
1	Province/ territory	Year	Topic	Rank 2016	Education score	Enrolment score	Learning score	Retention score	Gender parity score
2	ICT	2016	Education Score	1	85.740863	89.515444	71.129807	87.5	94.818199
3	AJK	2016	Education Score	2	81.679298	73.419959	66.6	92	94.697232
4	Punjab	2016	Education Score	3	73.558842	70.330602	62.725	66	95.179765
5	GB	2016	Education Score	4	73.209697	58.548625	60.3	87	86.990164
6	KP	2016	Education Score	5	65.321205	70.849839	49.475	65	75.95998
7	Sindh	2016	Education Score	6	60.4418	60.866842	41.25	50	89.650357
8	FATA	2016	Education Score	7	54.048468	62.096536	50.8	31	72.297334
9	Balochistan	2016	Education Score	8	51.039804	55.556016	42.675	28	77.928199
10									

7. Repeat steps 4 to 6 with Education ranking 2015, Infrastructure ranking 2016, Infrastructure ranking 2015 making the changes appropriate for each sheet.

	A	B	C	D	E	F	G	H	I
1	Province/ territory	Year	Topic	Rank 2016	Education score	Enrolment score	Learning score	Retention score	Gender parity score
2	ICT	2016	Education Score	1	85.740863	89.515444	71.129807	87.5	94.818199
3	AJK	2016	Education Score	2	81.679298	73.419959	66.6	92	94.697232
4	Punjab	2016	Education Score	3	73.558842	70.330602	62.725	66	95.179765
5	GB	2016	Education Score	4	73.209697	58.548625	60.3	87	86.990164
6	KP	2016	Education Score	5	65.321205	70.849839	49.475	65	75.95998
7	Sindh	2016	Education Score	6	60.4418	60.866842	41.25	50	89.650357
8	FATA	2016	Education Score	7	54.048468	62.096536	50.8	31	72.297334
9	Balochistan	2016	Education Score	8	51.039804	55.556016	42.675	28	77.928199
10									

	A	B	C	D	E	F	G	H	I
1	Province/ Territory	Year	Topic	Rank 2015	Education score	Enrolment score	Learning score	Retention score	Gender parity score
2	ICT	2015	Education Score	1	83.96	94.31	58.88	87.55	95.1
3	AJK	2015	Education Score	2	76.67	77.7	57.6	76.96	94.4
4	Punjab	2015	Education Score	3	76.3	79.67	59.06	72.01	95.38
5	GB	2015	Education Score	4	73.78	70.25	57.7	81.23	86.21
6	KP	2015	Education Score	5	70.86	74.8	50.03	75.1	83.69
7	Sindh	2015	Education Score	6	61.02	65.85	47.61	52.85	83.02
8	FATA	2015	Education Score	8	55.62	67.63	46.7	43.23	59.93
9	Balochistan	2015	Education Score	7	55.99	59.35	40.5	49.49	74.48
10									

	A	B	C	D	E	F	G	H	I	J
1	Province/territory	Year	Topic	Rank 2016	School infrastructure score	Electricity	Drinking water	Toilet	Boundary wall	Building condition satisfactory
2	Punjab	2016	Infrastructure Score	1	89.423079	81.414947	97.244604	94.814149	91.601722	82.03997
3	ICT	2016	Infrastructure Score	2	86.596859	98.429319	92.670157	95.287958	96.858639	49.73822
4	KP	2016	Infrastructure Score	3	71.100686	53.136131	63.187386	77.37816	76.109808	85.691947
5	Sindh	2016	Infrastructure Score	4	43.567251	34.138625	46.972965	51.3805	56.356054	28.988112
6	GB	2016	Infrastructure Score	5	42.526299	43.91468	52.446675	35.884567	56.08532	24.300254
7	FATA	2016	Infrastructure Score	6	41.727972	44.73993	40.946422	34.904185	59.405553	28.643769
8	Balochistan	2016	Infrastructure Score	7	22.888688	21.294887	31.969195	14.811498	28.897645	17.470216
9	AJK	2016	Infrastructure Score	8	22.326038	10.92337	21.370776	27.391718	20.871014	31.073311
10										

	A	B	C	D	E	F	G	H	I	J
1	Province/Territory	Year	Topic	Rank 2015	School Infrastructure Score	Electricity	Drinking water	Toilet	Boundary Wall	Building Condition Satisfactory
2	Punjab	2015	Infrastructure Score	1	86.89	74.26	94.2	91.68	87.1	87.19
3	ICT	2015		2	86.6	98.43	92.67	95.29	96.86	49.74
4	KP	2015		3	70.42	53.9	66.11	77.04	75.63	79.45
5	Sindh	2015		4	47.19	47.6	48.57	54.17	57	28.61
6	GB	2015		5	45.38	36.65	40.64	39.15	62.96	47.47
7	FATA	2015		6	39.08	42.76	46.81	36.08	51.63	18.14
8	Balochistan	2015		7	32.63	69.46	17.64	14.93	36.33	24.8
9	AJK	2015		8	23.39	10.74	23.14	27.18	23.28	32.62
10										

TABLEAU FORMAT

8. Make sure to install the Tableau extension or Add-ins into Excel (if you have not installed please do so to continue Lab). Select Education2016 sheet, select data (but not column headers) from column D to I and go to Tableau – Reshape data and click on ok in the window

The screenshot shows the Microsoft Excel interface with the Tableau ribbon active. The 'Reshape data' button is highlighted in the Tableau ribbon. The worksheet 'Education2016' is selected, showing data for various provinces/territories and their education scores.

	A	B	C	D	E	F	G	H	I
1	Province/ territory	Year	Topic	Rank 2016	Education score	Enrolment score	Learning score	Retention score	Gender parity score
2	ICT	2016	Education Score	1	85.740863	89.515444	71.129807	87.5	94.818199
3	AJK	2016	Education Score	2	81.679298	73.419959	66.6	92	94.697232
4	Punjab	2016	Education Score	3	73.558842	70.330602	62.725	66	95.179765
5	GB	2016	Education Score	4	73.209697	58.548625	60.3	87	86.990164
6	KP	2016	Education Score	5	65.321205	70.849839	49.475	65	75.95998
7	Sindh	2016	Education Score	6	60.4418	60.866842	41.25	50	89.650357
8	FATA	2016	Education Score	7	54.048468	62.096536	50.8	31	72.297334
9	Balochistan	2016	Education Score	8	51.039804	55.556016	42.675	28	77.928199

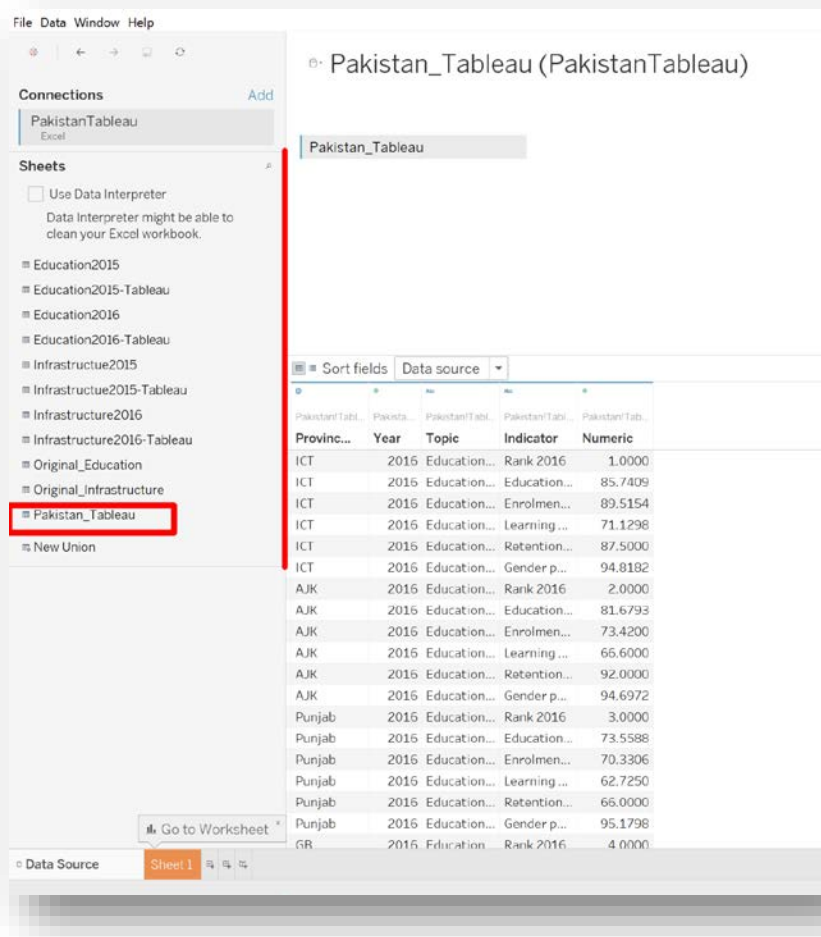
9. Tableau is going to make a new sheet called Education2016-Tableau. Rename column D as Indicator and E as Numeric.

Education Score							
	A	B	C	D	E	F	G
1	Province/ territory	Year	Topic	Indicator	Numeric		
2	ICT	2016	Education Score	Rank 2016	1		
3	ICT	2016	Education Score	Education score	85.740863		
4	ICT	2016	Education Score	Enrolment score	89.515444		
5	ICT	2016	Education Score	Learning score	71.129807		
6	ICT	2016	Education Score	Retention score	87.5		
7	ICT	2016	Education Score	Gender parity score	94.818199		
8	AJK	2016	Education Score	Rank 2016	2		
9	AJK	2016	Education Score	Education score	81.679298		
10	AJK	2016	Education Score	Enrolment score	73.419959		
11	AJK	2016	Education Score	Learning score	66.6		
12	AJK	2016	Education Score	Retention score	92		
13	AJK	2016	Education Score	Gender parity score	94.697232		
14	Punjab	2016	Education Score	Rank 2016	3		
15	Punjab	2016	Education Score	Education score	73.558842		
16	Punjab	2016	Education Score	Enrolment score	70.330602		
17	Punjab	2016	Education Score	Learning score	62.725		
18	Punjab	2016	Education Score	Retention score	66		
19	Punjab	2016	Education Score	Gender parity score	95.179765		
20	GB	2016	Education Score	Rank 2016	4		
21	GB	2016	Education Score	Education score	73.209697		
22	GB	2016	Education Score	Enrolment score	58.548625		
23	GB	2016	Education Score	Learning score	60.3		
24	GB	2016	Education Score	Retention score	87		
25	GB	2016	Education Score	Gender parity score	86.990164		
26	KP	2016	Education Score	Rank 2016	5		
27	KP	2016	Education Score	Education score	65.321205		
28	KP	2016	Education Score	Enrolment score	70.849839		
29	KP	2016	Education Score	Learning score	49.475		
30	KP	2016	Education Score	Retention score	65		
31	KP	2016	Education Score	Gender parity score	75.95998		

- Repeat steps 8 and 9 with Education201, Infrastructure2016, Infrastructure2015 sheets
- Add a new sheet and named as Pakistan\_Tableau. Copy all data in Education2016-Tableau, Education2015-Tableau, Infrastructure2016-Tableau, Infrastructure2015-Tableau, and Infrastructure2015-Tableau. Be careful to copy all data, just data, and not headers. You should end up with a total of 209 rows

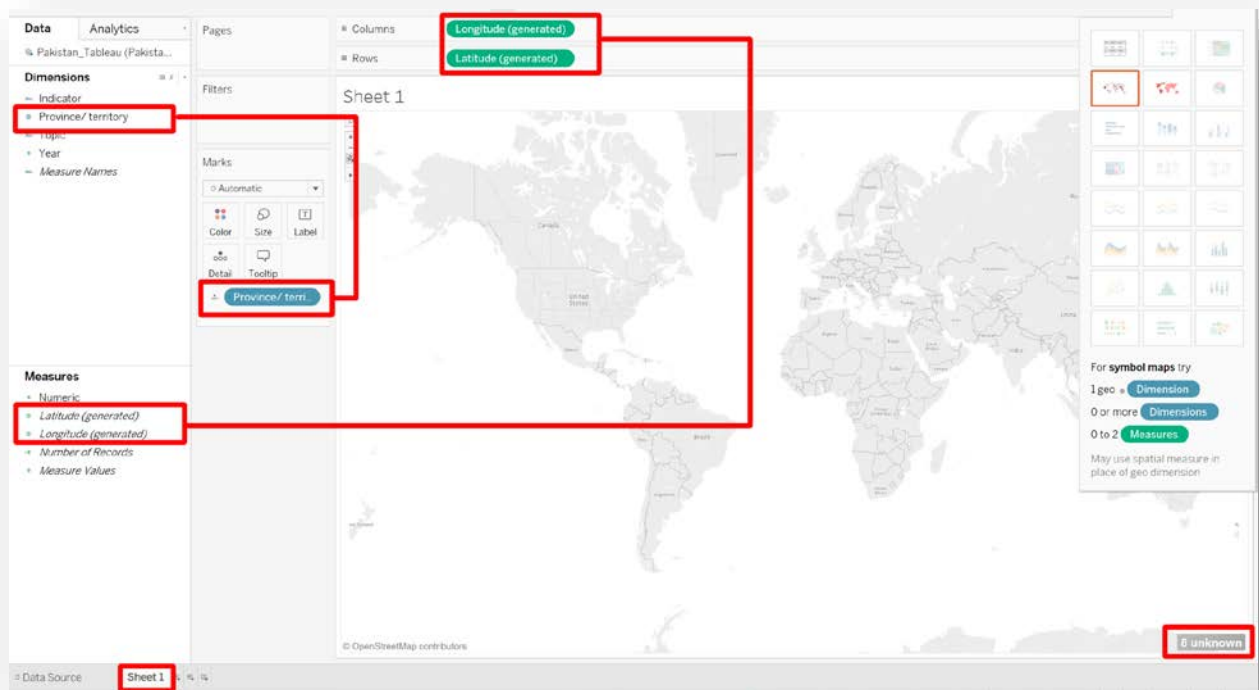
## CREATE MAP IN TABLEAU

- Open Tableau Public and Connect the PakistanTableau.xlsx excel file
- Tableau identifies all the sheet in the document. Double click on Pakistan\_tableau to select it.



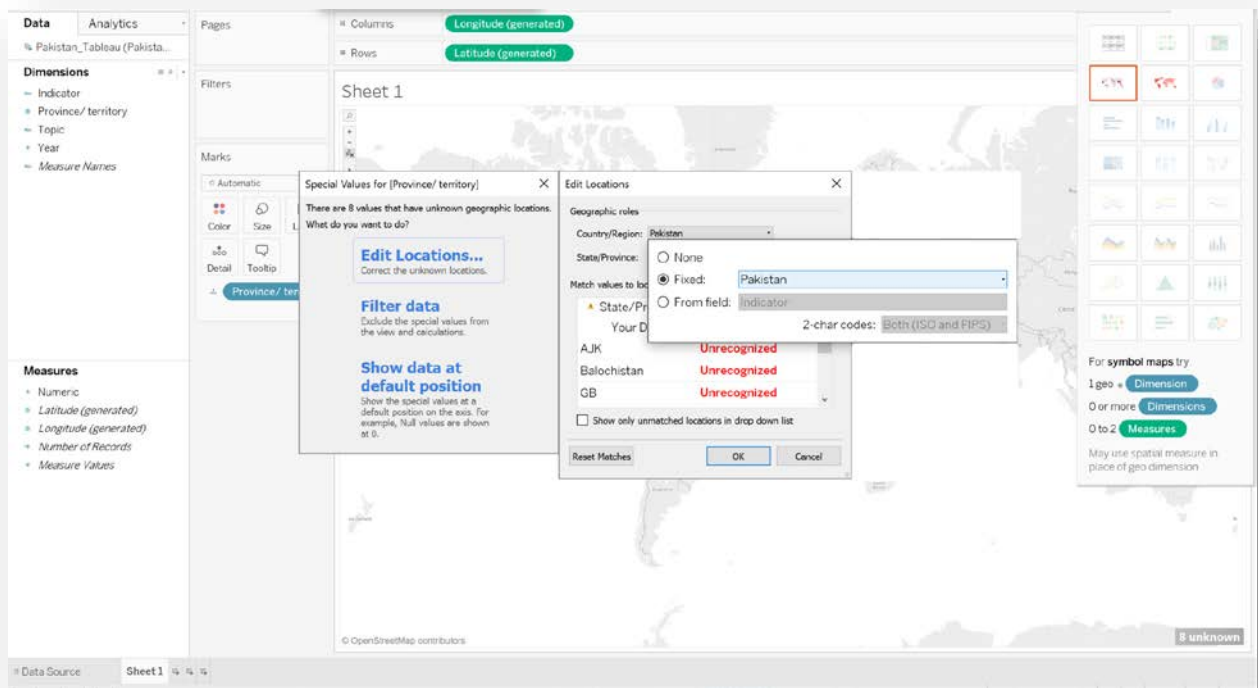
14. To make a Map: Tableau has a default location and try to identify what kind of data was connected. It identified two Measures (Latitude and Longitude) for Provinces/Territory. Double clicking in Provinces/Territory will move Latitude and Longitude Measures to Columns and Rows but Tableau did not identify exactly what we need. In the right-bottom corner it says 8 unknown.





15. NOTE: As soon you began to make changes in Tableau, it is possible to save your work. Please save the progress of your work because it is internet-based program and does not always save changes automatically. Also Change Sheet1 name to something more acquired like Pak\_Map.
16. Click on 8 unknowns – Edit Location – Click on Fixed – Type Pakistan, it will identify three locations.





17. Now with the 5 provinces left we need to go one by one, click on Unrecognized a change for: (just by began to type the provinces name Tableau will recognize location)
  - a. AJK to Azad Kashmir
  - b. Balochistan to Baluchistan
  - c. GB to Giltgit-Baltistan
  - d. ICT to F.C.T (Federal Capital Territory, it was not as evident to identify, sometime you need to guess or go to the map and check the name inside Tableau's map)
  - e. KP to Khyber Pakhtunkhwa (Also you see here how important it is to create data tables with complete information so that it can be recognized by programs).

**Edit Locations** [X]

Geographic roles

Country/Region:

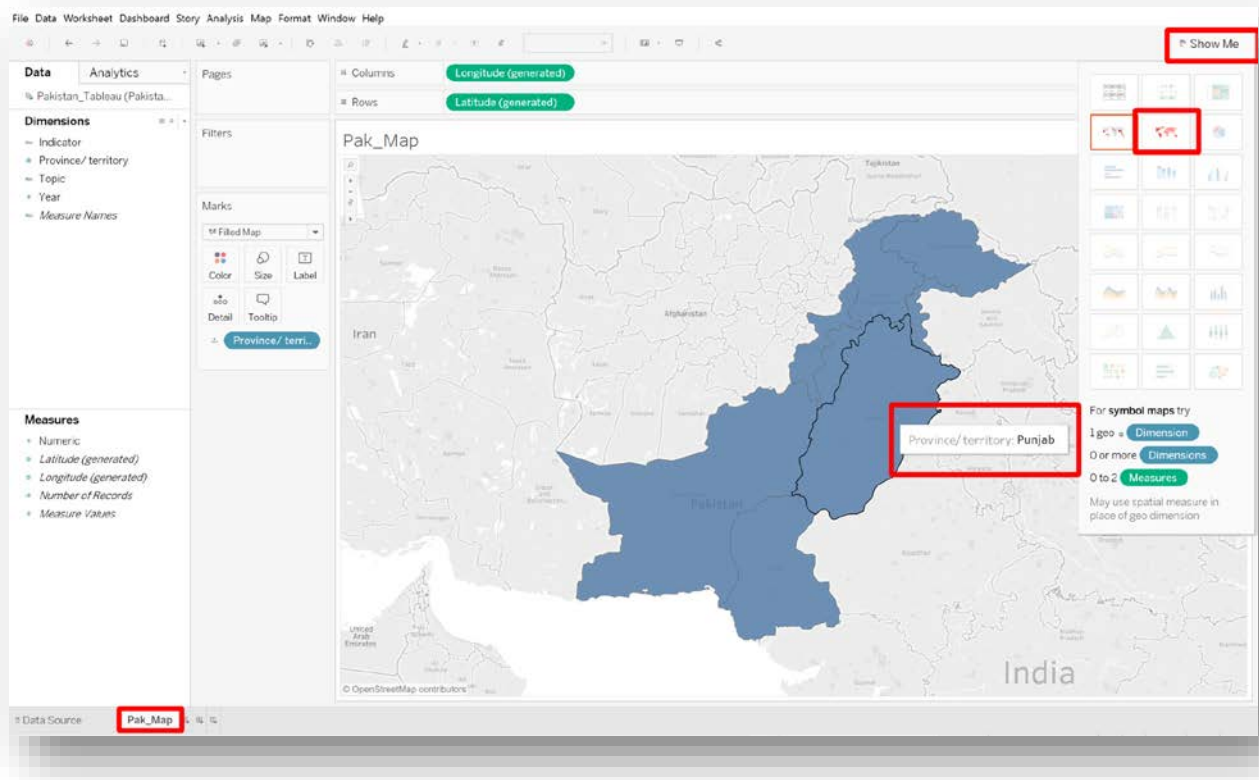
State/Province:

Match values to locations

State/Province	Your Data	Matching Location
AJK		Azad Kashmir
Balochistan		Baluchistan
GB		Gilgit-Baltistan
ICT		F.C.T.
KP		Khyber Pakhtunkhwa
FATA		F.A.T.A.
Punjab		Punjab
Sindh		Sindh

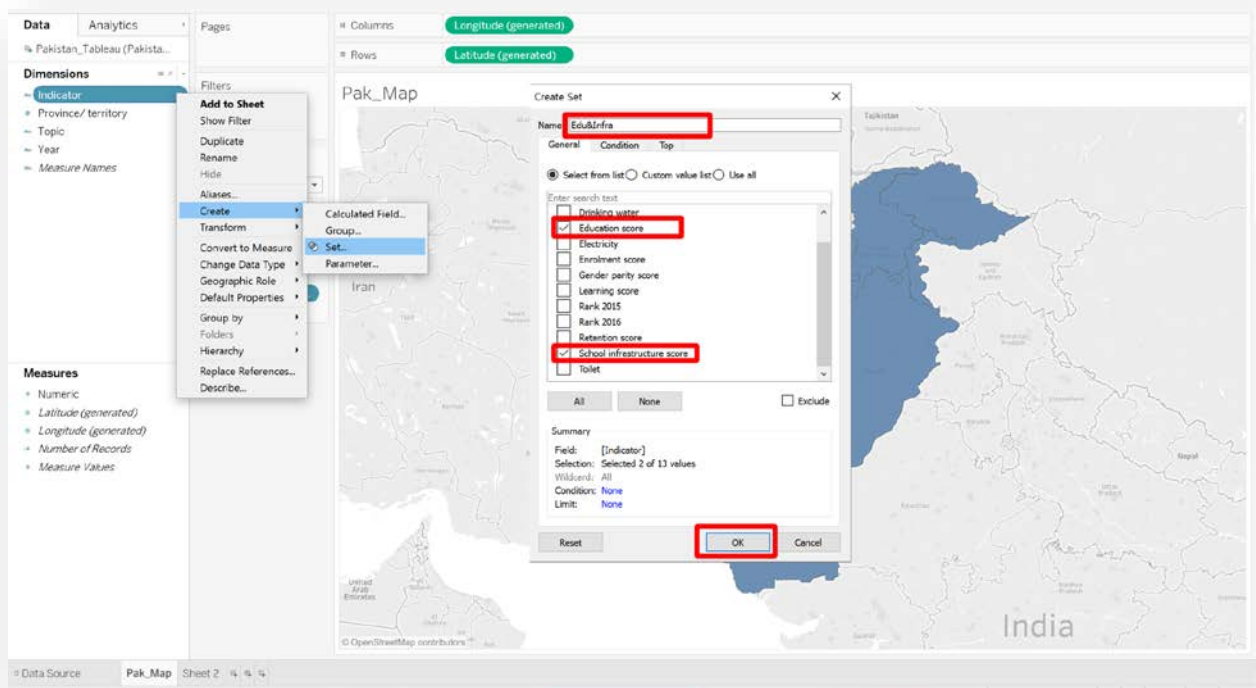
☐ Show only unmatched locations in drop down list

18. Now go to the Show Me panel and click on filled map and now we have a filled shape map.

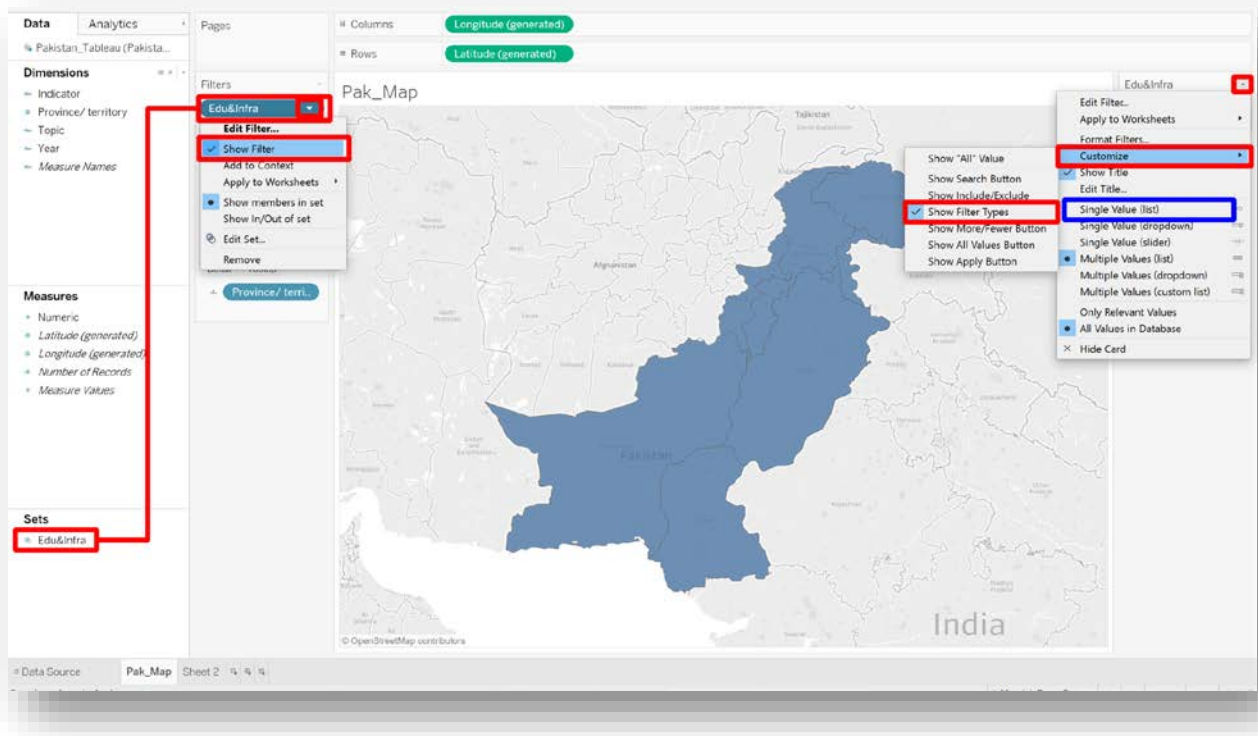


## ADDING ANALYSIS AND VISUALIZATIONS IN TABLEAU

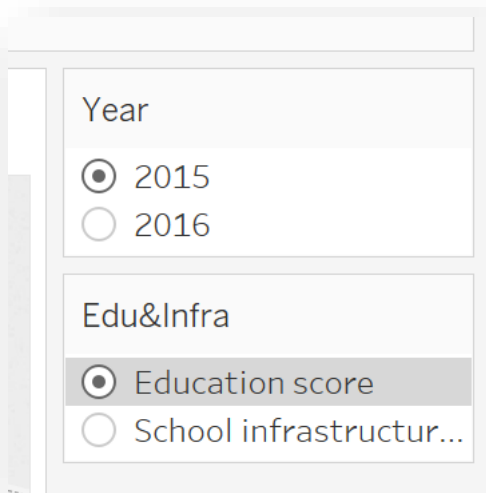
19. Click on the Indicator – Dimension and select Create – Set. Select in Create Set window: Education Score and School Infrastructure score and name it as Edu&Infra. Here we have created a set that is going to include just the Education Score and School Infrastructure score data. It is not a filter because filters are used for visualization rather than analysis.



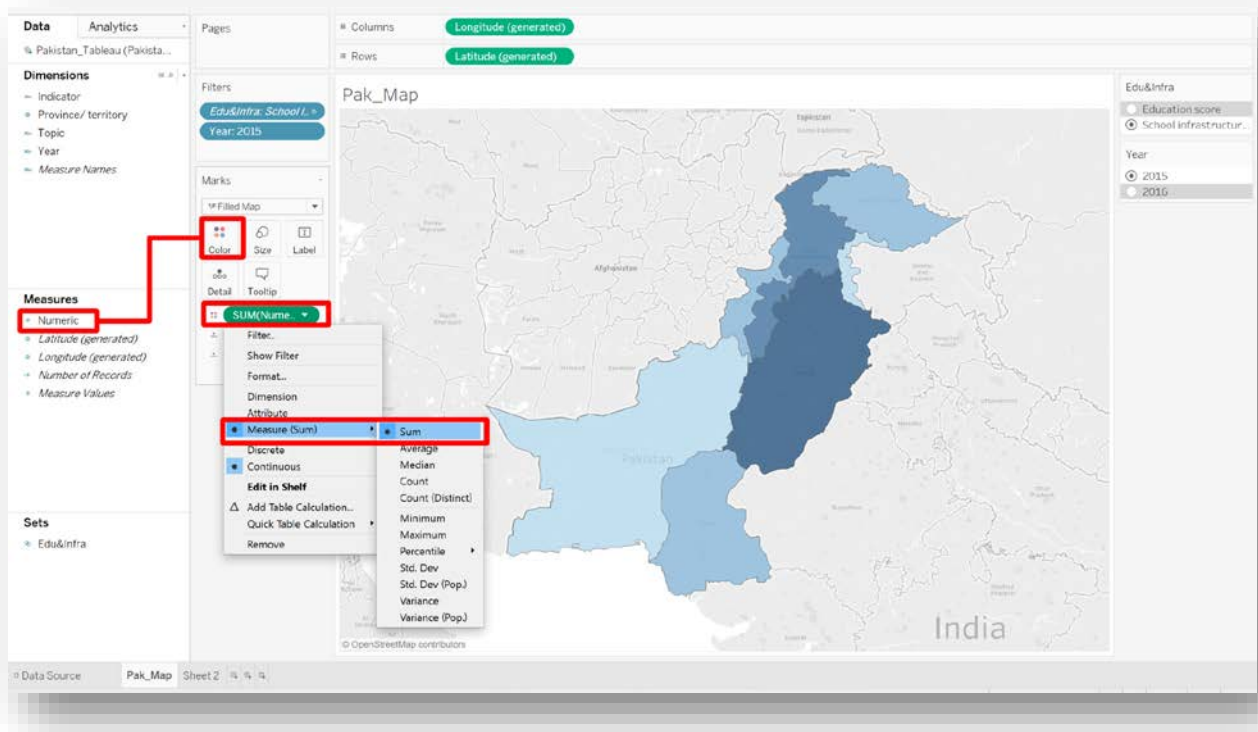
20. Now we have another panel called Set, put Edu&Infra in the Filters panel and click on Show Filter. In the filter select Customize and deselect all in “show” except for Filter type. The goal is make the filter as simple is possible for the final user. In the same Edu&Infra filter options select Single Value (list).



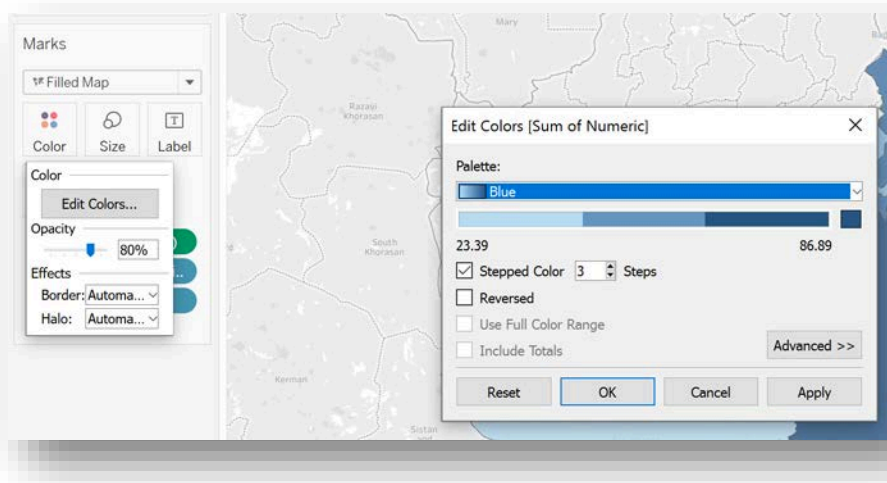
21. Put Year – Dimension in Filters panel and customized as number 20. (If year is read for Tableau as a number changed as a string with Year – Options – Change Data Type – String)



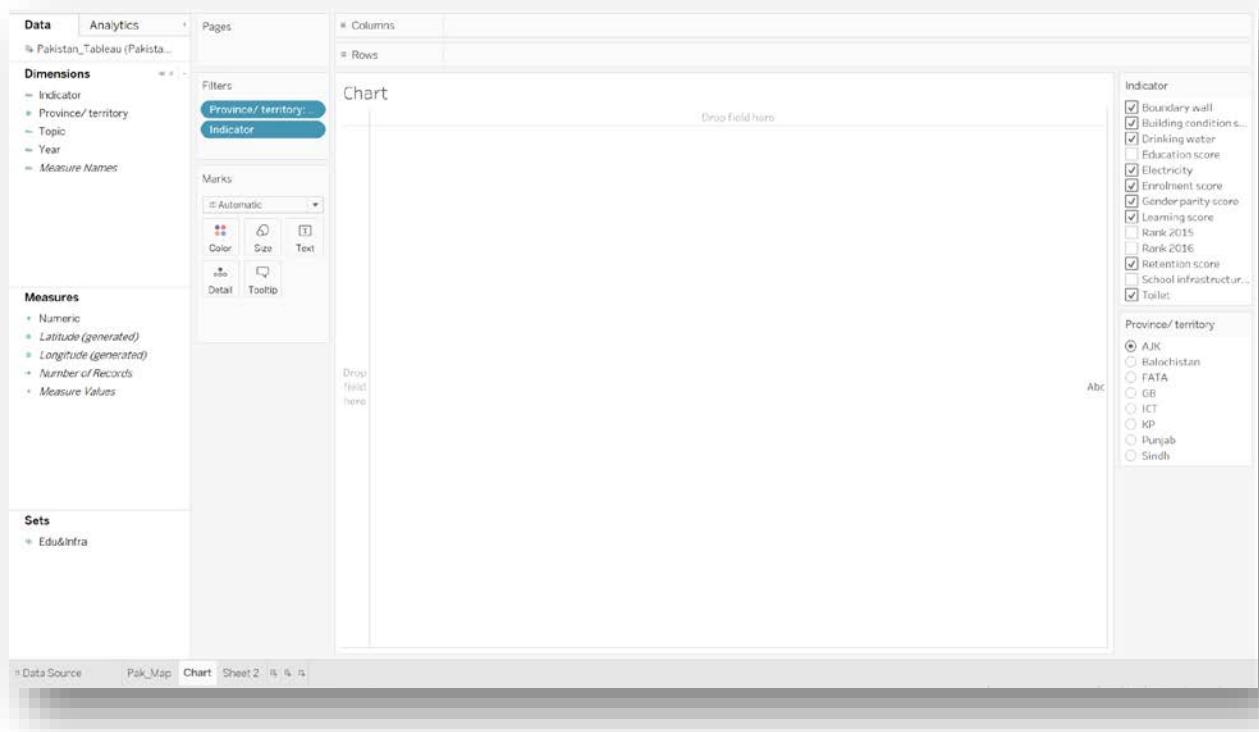
22. Move Numeric – Measures to Color – Mark panel and in the option menu change Measure to Sum.



23. In Color – Mark – Edit Color change color and step color leave just three (that is because the data is just for 8 provinces).

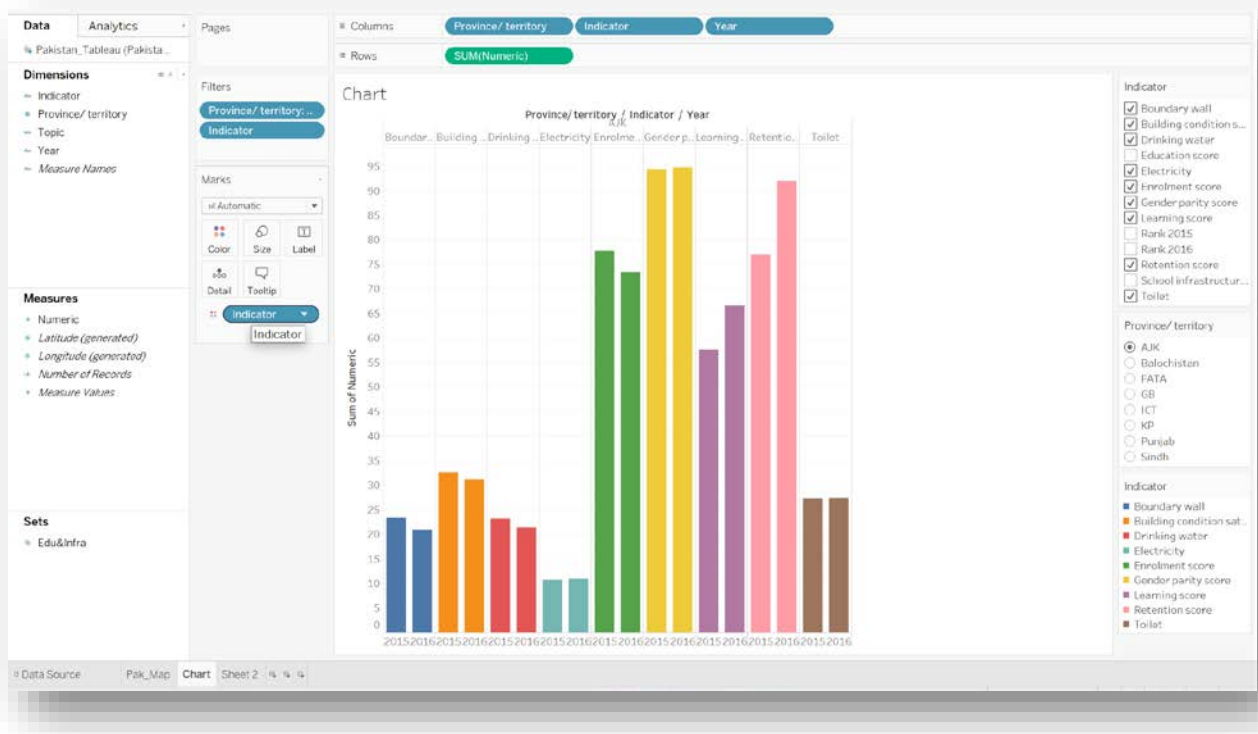


24. Add a New Worksheet and name it Chart. Put Province/Territory – Dimensions select all provinces use show filter and in options for this filter configure as number 20 and Single Value
25. Indicator – Dimensions in Filters panel select all except for Education Score, Rank 2015, Rank 2016, and School Infrastructure score. In options for this filter configure as number 20 and Multiple Values (list)

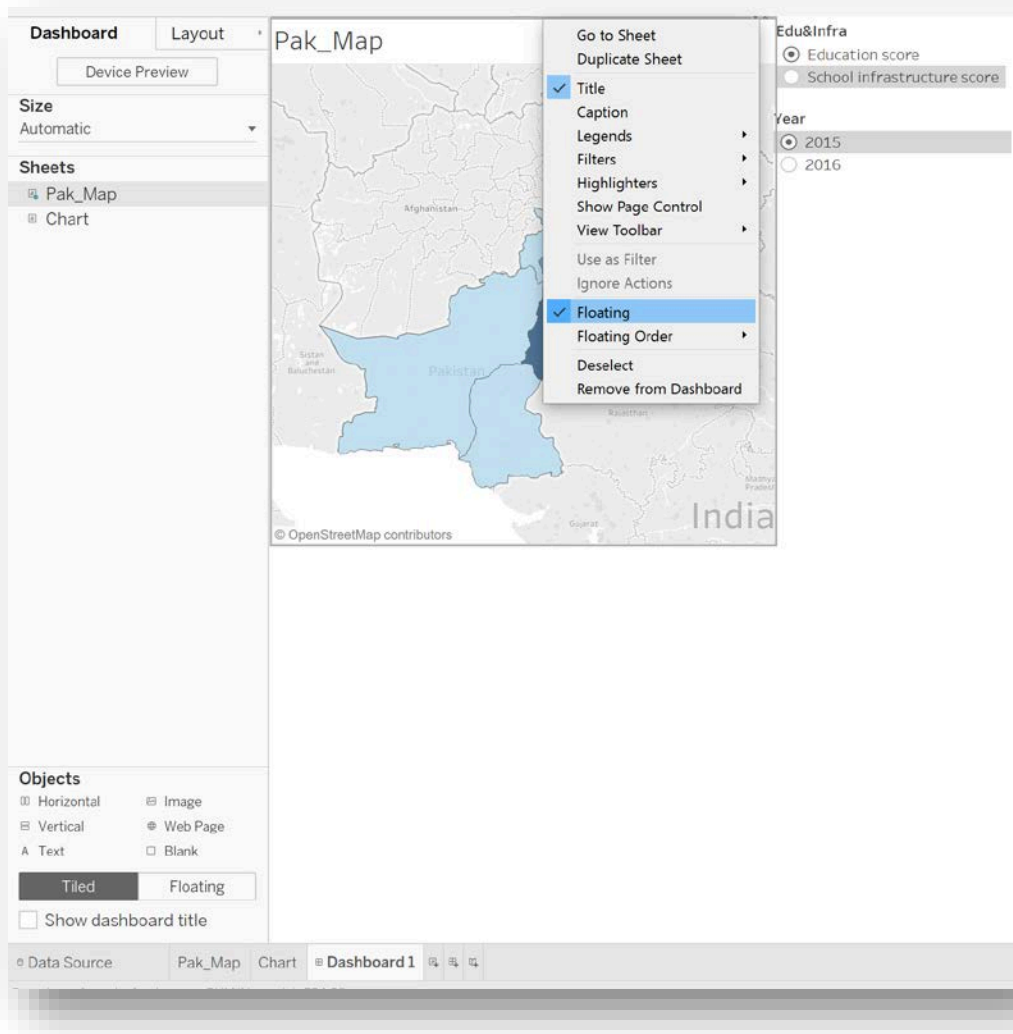


26. Now for the chart put Province/Territory, Indicator, and Year (In this order; which is first matters for side-by-side charts). Put numeric in rows and change Measure as a SUM. And put Indicator as a color (change colors if it necessary).

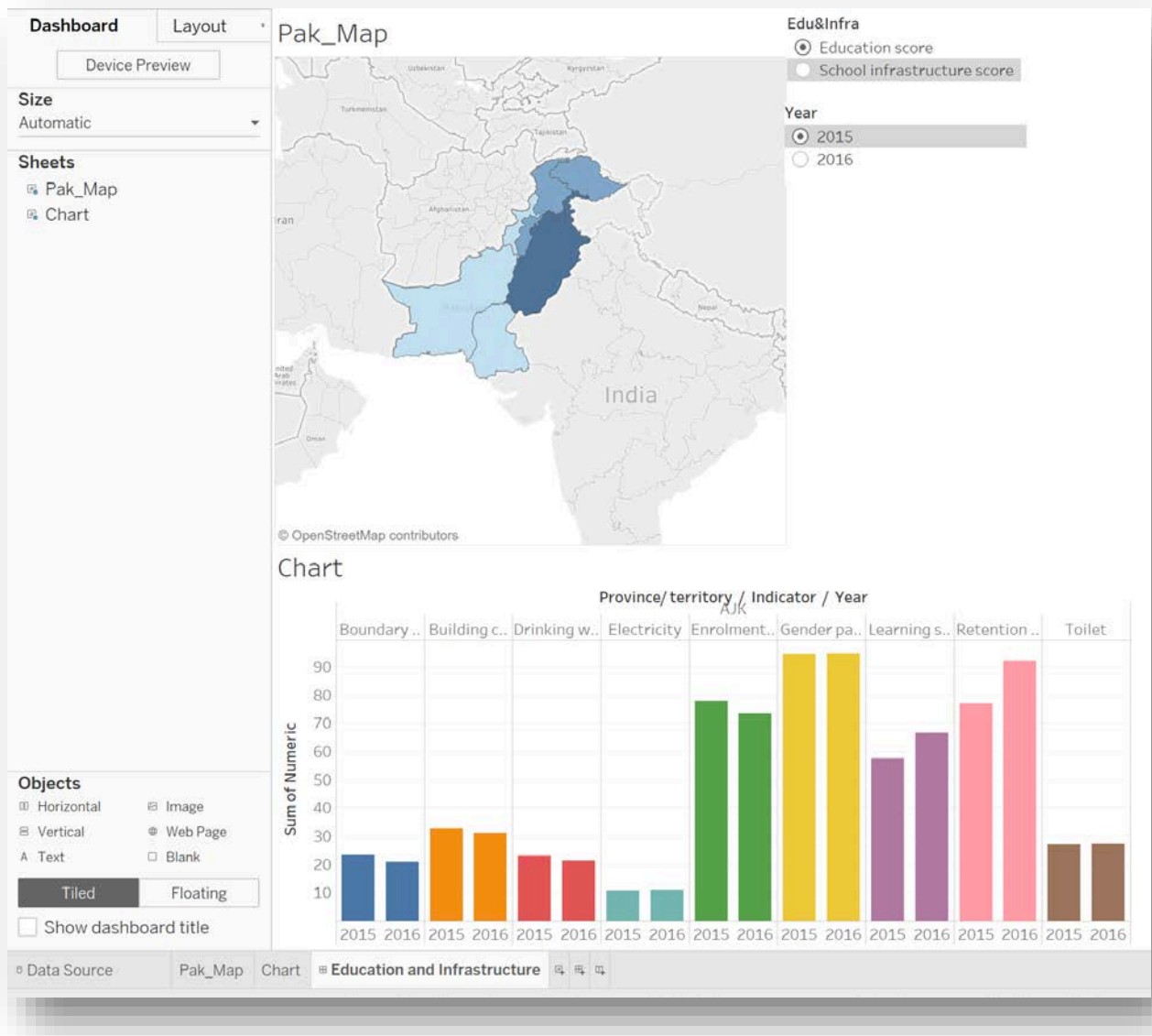




27. Add a New Dashboard and name it Education and Infrastructure. For now, leave Dashboard Size as Automatic. Move Pak\_Map sheet inside the dashboard, using the option for the map and filters select Floating and accommodate map and Filters



28. Add Chart sheet to the dashboard close any another reference different than the chart, mean the filter and color infowindow



29. Go to Dashboard – Actions and Add a New Action – Filter. Name as Filter Action Map, we are going to create an action from Pak\_Map that is going to affect Chart so in the Source sheet select Park\_Map and Select and in Target Sheets select Chart and leave the filter. The result is when the user select a province the chart will change by Education or Infrastructure information by province.

Tableau Public - Pakistan\_Lab13

File Data Worksheet Dashboard Story Map Format Window Help

Dashboard

Device Preset

Size

Automatic

Sheets

Pak Map

Actions

Connect sheets to external web resources using URL actions, or to other sheets in the same workbook using Filter actions and Highlight actions.

Name	Run On	Source	Fields
Filter action map	Select	Education and Infrastructu...	All

Add Action >

Show actions for all sheets in this workbook

OK Cancel

Objects

- Horizontal
- Vertical
- Text
- Image
- Web Page
- Blank

Tiled Floating

Show dashboard title

Add Filter Action

Name: Filter action map

Source Sheets:

- Education and Infra...
- Chart
- Pak\_Map

Run action on:

- Hover
- Select
- Menu

Target Sheets:

- Education and Infra...
- Chart
- Pak\_Map

Clearing the selection will:

- Leave the filter
- Show all values
- Exclude all values

Target Filters:

Selected Fields All Fields

Source Field	Target Field	Target Data Source
--------------	--------------	--------------------

Add Filter... Edit... Remove

OK Cancel

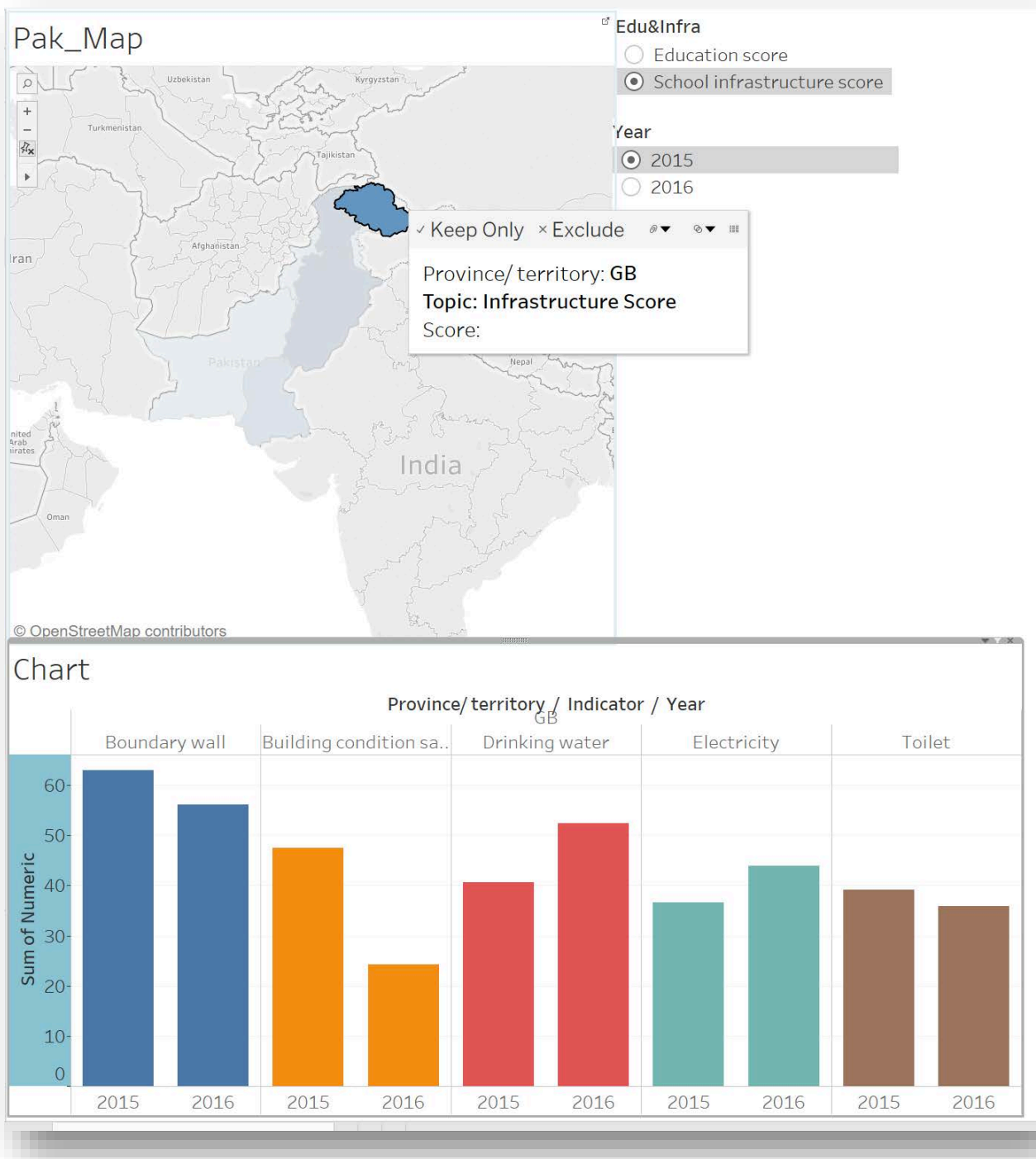
Indicator / Year

Gender pa...	Learning s...	Retention...	Toilet
2015	2015	2015	2015
2016	2016	2016	2016

Sum of Numeric

2015 2016 2015 2016 2015 2016 2015 2016 2015 2016 2015 2016 2015 2016 2015 2016 2015 2016

Data Source Pak\_Map Chart Education and Infrastructure



30. Finally, to change different information like title, x any axes title or provinces, or provinces names, just double click on them and an option will appear. Remember to save all the changes.
31. You can see final work on [https://public.tableau.com/views/Pakistan\\_Lab13/EducationandInfrastructure?:embed=y&:display\\_count=yes](https://public.tableau.com/views/Pakistan_Lab13/EducationandInfrastructure?:embed=y&:display_count=yes)