
PROJECT

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18583

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1. Dataset

Tax Directory of Pakistan 2018:

<https://download1.fbr.gov.pk/Docs/TaxpayersDirectory2018.zip>

1.1 Data Description

The dataset includes data of 2.743 million tax filers of Pakistan who paid their income tax returns for the year 2018. Granular data includes:

- **Sr**: serial number of the rows
- **TaxpayerName**: name of the taxpayer
- **RegistrationNo**: registration number of the taxpayer
- **TaxPaid**: the amount of tax paid by taxpayer
- **TaxPaid_n**: tax class/bin the taxpayer belongs to. Eight classes.
- **Province**: eight provinces(according to the dataset)
- **Division**: thirty divisions
- **District**: ninety-eight districts
- **Gender**: male or female
- **zones_20**: twenty-two zones
- **Regions_8**: nine regions
- **Regions_12**: fourteen regions

2. Problem Statement

This analysis is to learn about the details of income tax paid by Pakistanis in the year 2018 based on their gender, geographic and demographic information.

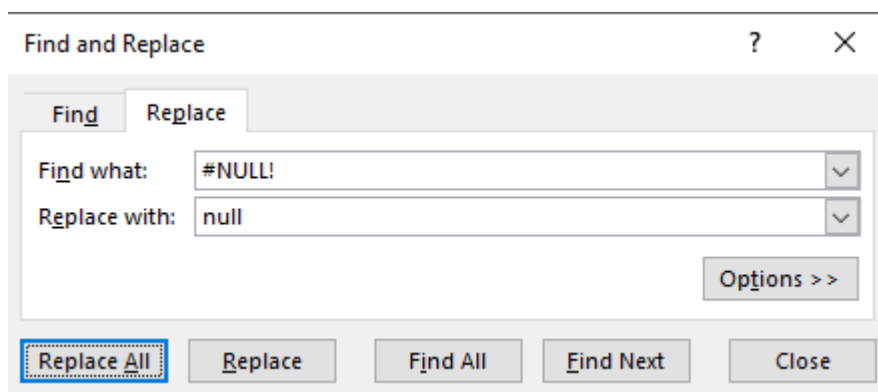
Identify which provinces, divisions and districts paid the highest amount of tax, had the highest amount of registered tax filers, and had the highest amount of tax evaders.

3. Data Wrangling

(Done in Power Query Editor)

3.1 Dealing with missing values

- 'TaxPaid' column has some missing values which MS Excel show as '#NULL!'. If the dataset is imported in Power BI with these values, it produces an error since it can't recognize the value as a datatype. So, replace '#NULL!' with 'null' in MS Excel before importing the data in Power BI.



- After the dataset has been imported in Power BI, we can replace these 'null' values with '0' because if 'TaxPaid' column has a null value that means the amount of tax paid is zero. Also, TaxPaid is a numerical field so we can't have a string as a value.

3.2 Data Transformation

- There are three sheets in the excel file that are supposed to be appended (sheet 3 appended to sheet 2 and sheet 2 appended to sheet1). So, I have appended the tables in the order mentioned above (tables/queries in Power BI are the same as sheets in MS Excel).

Append

Concatenate rows from three or more tables into a single table.

☐ Two tables ☒ Three or more tables

Available tables

Tax Directory 2018_1
Tax Directory 2018_2
Tax Directory 2018_3

Tables to append

Tax Directory 2018_1
Tax Directory 2018_2
Tax Directory 2018_3

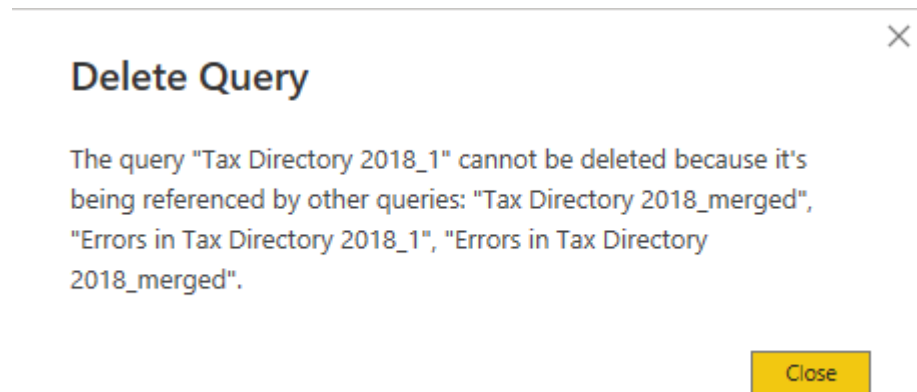
- Remove 'TaxPayerName' column as it serves no purpose in our analysis.
- Remove 'RegistrationNo' column as it serves no purpose in our analysis.
- Rename the 'zones_20' column to 'zones'.
- There are two columns 'Regions_8' and 'Regions_12' that tell the same thing with only difference being Regions_12 has four more regions than the Regions_8 column. So, remove the 'Regions_8' column.
- Rename 'Regions_12' column to 'Regions'.
- 'Sr' column is the serial number of the rows. Sr can be used to sum, count, and average the number of tax filers and hence can be used as a KPI. So, I will keep this column but change the datatype of Sr from 'number' to 'text' since it isn't a numerical field, just a count.

3.3 Error Detection and Correction

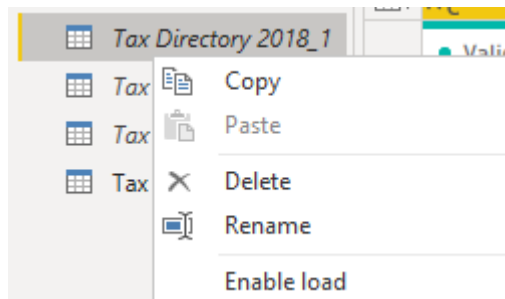
- There exists an error in the dataset which may be data entry error. The zone 'Zone-1 Azad Jammu and Kashmir' and all the divisions and districts that fall under this zone are listed in 'Gilgit-Baltistan' region and the zone 'Zone 2-Gilgit-Baltistan' and all the divisions and districts that fall under this zone are listen in 'Azad Jammu and Kashmir' region. The regions need to be swapped. To do this, I replaced Azad Jammu and Kashmir in Regions column with 'temp' (a temporary value). Then I replaced Gilgit-Baltistan with Azad Jammu and Kashmir. And finally, I replaced temp with Gilgit-Baltistan. The error has been eliminated and now all zones, divisions and districts belong to right regions.

4. Data Loading

Now, there are four tables in total after we appended the three tables into a new one. I can't delete the three tables/queries because the new appended table is using the data from those three tables.



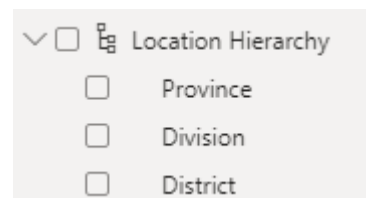
But when loading the data in Power BI, I just need the appended table and not the other ones, so I disabled the load for those three tables.



(Enable load not selected/checked)

Once this is done load the dataset in Power BI Desktop. Since we have the geographic information of the tax filers, we can create a location hierarchy:

- Location Hierarchy
 - Province
 - Division
 - District



5. Dimensions

- Analysis across location hierarchy:
 - Province
 - Division
 - District
- Gender
- Regions
- Zones
- TaxPaid_n

6. KPIs

- Sr (count, total, average)
 - TaxPaid
-

7. Questions

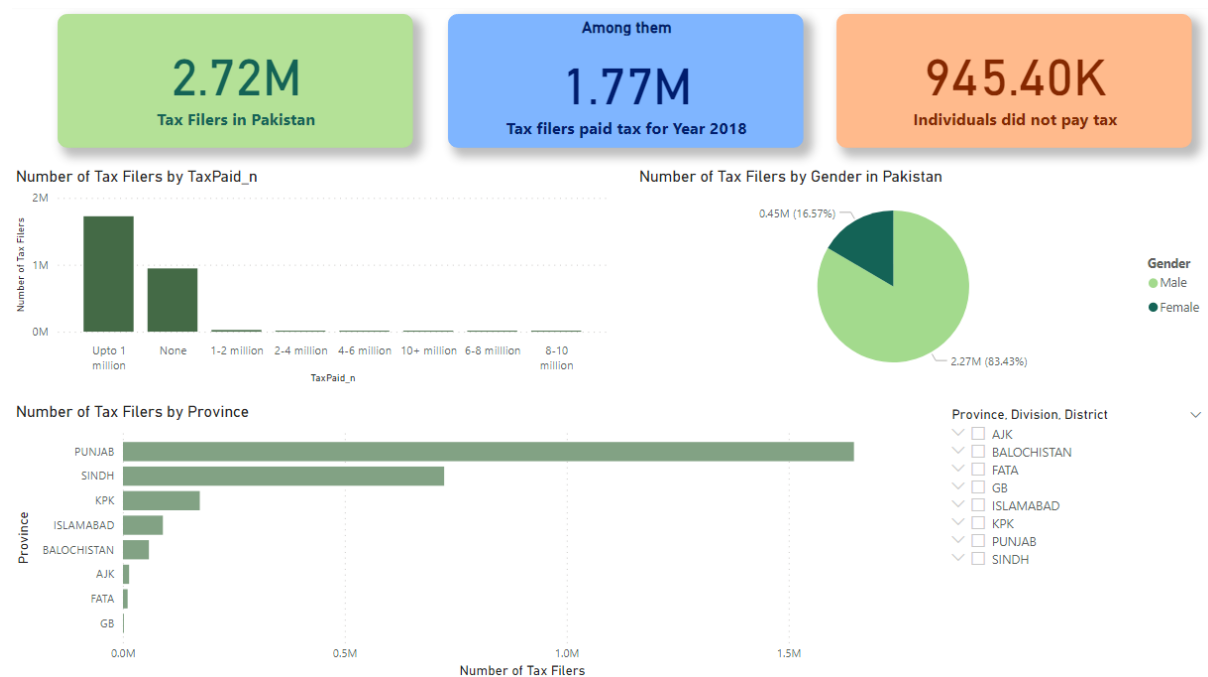
- How many registered tax filers are there in Pakistan?
 - How many registered tax filers are there by gender in Pakistan?
 - How many registered tax filers are there by tax classes/bins in Pakistan?
 - How many registered tax filers paid their tax for the year 2018 in Pakistan?
 - How many registered tax filers did not pay their tax for the year 2018 in Pakistan?
 - What is the total and average tax collected in Pakistan?
 - How much tax was not paid in Pakistan(an estimate based on average)?
 - What is the total and average tax collected by gender in Pakistan?
 - What is total and average tax collected by tax classes/bins in Pakistan?
 - How many registered tax filers are there in each province, regions, zones, division, and district?
 - How many registered tax filers are there by gender in each province, regions, zones, division, and district?
 - How many registered tax filers are there by tax classes/bins in each province, regions, zones, division, and district?
 - How many registered tax filers paid their tax for the year 2018 in each province, regions, zones, division, district?
 - How many registered tax filers did not pay their tax for the year 2018 in each province, regions, zones, division, district?
 - What is the total and average tax collected in each province, regions, zones, division, and district?
 - How much tax was not paid in each province, regions, zones, division, and district(an estimate based on average)?
 - What is the total and average tax collected by gender in each province, division, regions, zones, and district?
 - What is the total and average tax collected by tax classes/bins in each province, regions, zones, division, and district?
-

- How many registered tax filers are there by gender separated by tax classes/bins in each province, region, zone, division, and district?
 - What is the total and average tax collected by gender separated by tax classes/bins in each province, region, zone, division, and district?
-

8. Analysis_(answers)

(My analysis includes the answers to my questions from the Power BI visuals as well as tax statistics from the press releases by FBR and Gallup Pakistan analysis on FBR tax directory. Links to all the resources given under 'Reference'.)

8.1 Who are the tax filers?



(‘aboutTaxFilers’ page from Power BI report)

Analysis of the data reveals that there are 2.72 million tax filers in Pakistan. Out of these, 1.77 million paid their tax for the year ending 2018. 34.8% did not file a tax return for 2018. To give an idea of the magnitude in comparison with other similar numbers, there are almost 32 million households in Pakistan so approximately 10% households are paying income tax.

Looking at these numbers from a provincial breakdown, we see that the highest number of filers were from Punjab (1 646 915 filers), followed by Sindh (723 762 filers). Punjab makes up more than half (60%) of the total number of filers in Pakistan. Sindh makes up 26%, KPK 6% and capital territory 3%. Balochistan has 58 557 tax filers, making up 2.1% of the total tax filers in Pakistan. AJK makes up 0.5%, FATA 0.4% of tax filers while GB only has 2 250 tax filers. In terms of tax filers, the share of provinces vis a vis their population

share is quite proportionate. However, KP and Balochistan have lower representation among filers population than their population share.

Among the 2.72 million tax filers in Pakistan, 2.27 million (83%) of the tax filers were male and 0.45 million (16.6%) were female. 63% of the tax filers fall in the 'Upto 1 million' tax class/bin.



(*'TaxFilers_treemap'* page from Power BI report)

This tree map is a very easy and convenient way to navigate around the provinces, regions, divisions, and districts of Pakistan to find out the number of tax filers in that specified area which can be difficult to do on charts. As shown above, the district of Shigar in the Baltistan division of GB province has only 1 (one) tax filer.

Income Tax Returns Tax Year 2018		
Type	# of Filers	Filers (%)
Companies	44,609	1.56
AOPs	64,336	2.26
Non-Salaried Individuals	1,542,088	54.06
Salaried Individuals	1,201,316	42.12

Source: Gallup Pakistan Report based on Data Analytics on FBR 2018 data

As can be expected from the 2.72 million tax filers, the largest single chunk is non-salaried individuals which essentially in local terms is the sole proprietor businessman or woman. There are about 1.5 million of these businesses in the tax net. According to economic census of 2005, there were around 3 million businesses in Pakistan and using growth rate projections, the number may now be close to 5 million. If this is correct, less than half of the businesses are registered or filing a return.

The second largest group is of salaried individuals, of which there are 1.2 million in the tax directory. The third and fourth largest group is of SECP registered firms (Ltd liability firms of various forms) and AOPs (or partnerships as they are called locally). These together account for another 100,000 tax filers. It is no surprise that formally registered firms with real corporate credentials make up a small portion of the total tax body in Pakistan.

Which income bracket contains the highest number of tax filers? Data on individual filers as per income slabs reveals that 37% of filers are those with an income of Rs. 400,000 and below (which is below the taxable limit in Pakistan). This is followed by 16% of salaried individuals with an income between Rs. 500,001 and Rs. 750,000. Individuals with an income between Rs. 4,000,001

and Rs. 6,000,000 make up less than 1% of total individual filers. 7% of filers are those with a final/fixed tax regime which in recent times has been abolished.

Number of Tax Filers by District

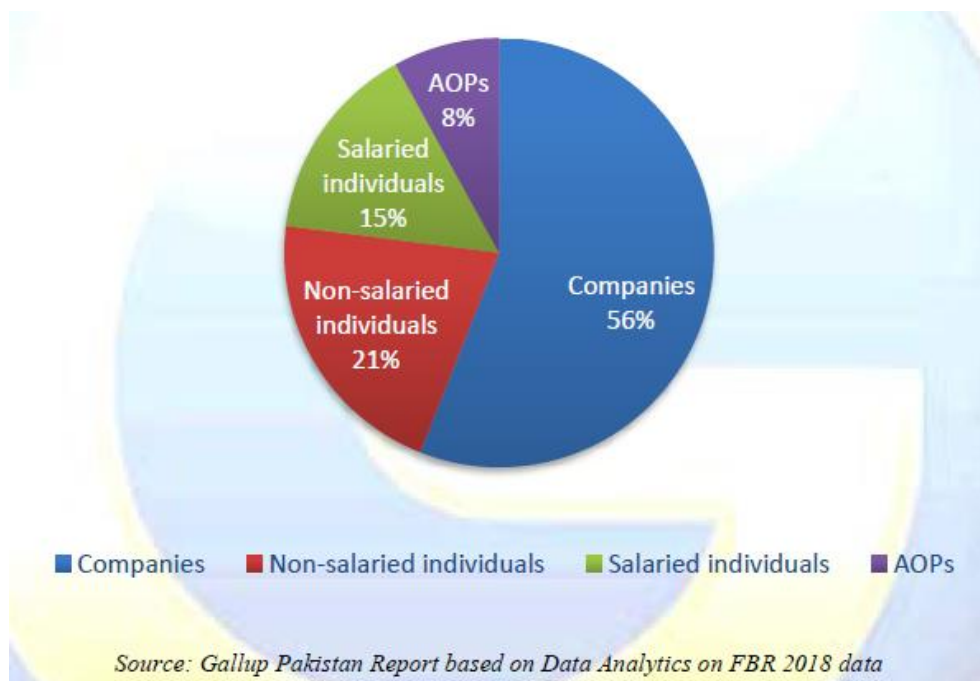


(*'TaxFilers_map'* page from Power BI report)

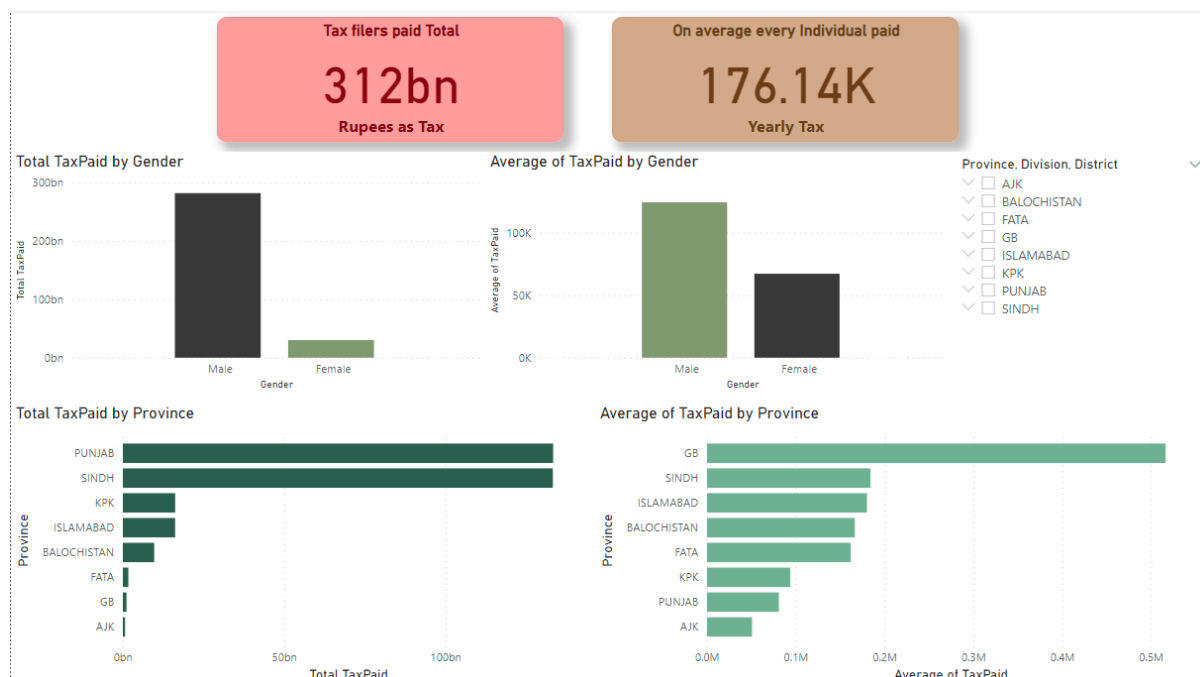
This map is a visual representation of the number of tax filers distributed across Pakistan according to districts. Size of bubbles is proportionate to the number of tax filers. Bigger the bubble, higher the number of tax filers in that district.

8.2 Who paid the most income tax?

Contrary to popular belief, only 15% of the income tax collected in year 2018 was paid by salaried individuals; formalized sector consisting of SECP registered firms paid more than half (64%) of all income tax. Companies and AOPs together represent only 3% of the total taxpayers but together paid 64% of the income tax collected.



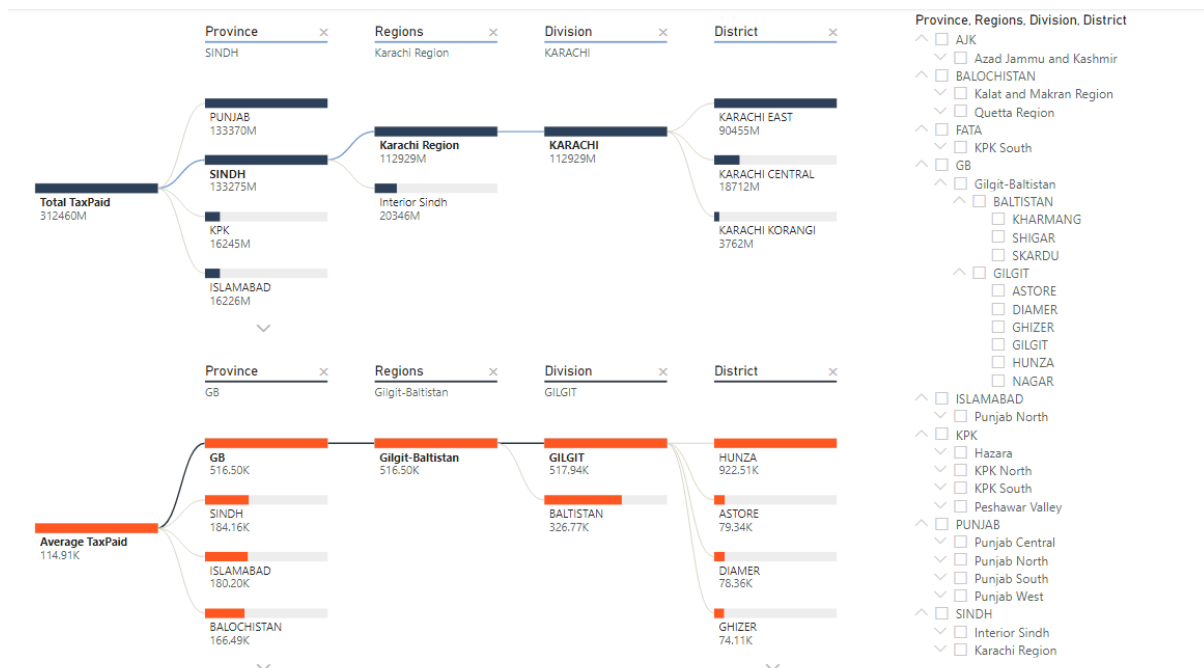
It is obvious from the above landscape that corporatization in Pakistan in terms of registering formally with a centralized body such as SECP is only being done by larger revenue firms (who are in turn paying more taxes as well). Moreover, the data busts the myth that is seldom repeated that income tax is majorly contributed by salaried class in Pakistan. This is true in terms of total numbers but not in terms of the tax this class contributes. Lastly, the informal business which represents the largest segment of businesses in Pakistan is still largely outside the tax net and those within the tax net are able to avoid at least the income tax.



('tot_avg_TaxPaid' page from Power BI report)

Total tax paid by 1.77 million filers adds up to 312 billion rupees. It can be estimated that on average every individual contributed Rs. 176.14K for yearly tax returns of 2018. Based on this average, it can be estimated that about 166 billion rupees of tax was not paid in Pakistan. About 86% of tax filers are from Punjab and Sindh and they contribute to more than 85% of the total tax collected. Alternatively, while tax filers in Islamabad make up 3% of the total tax filers, they contribute to 5% of the total tax collected. KPK paid 5.2%, Balochistan paid 3.1%, FATA 0.5%, GB 0.37%, and AJK 0.2% of the total tax collected.

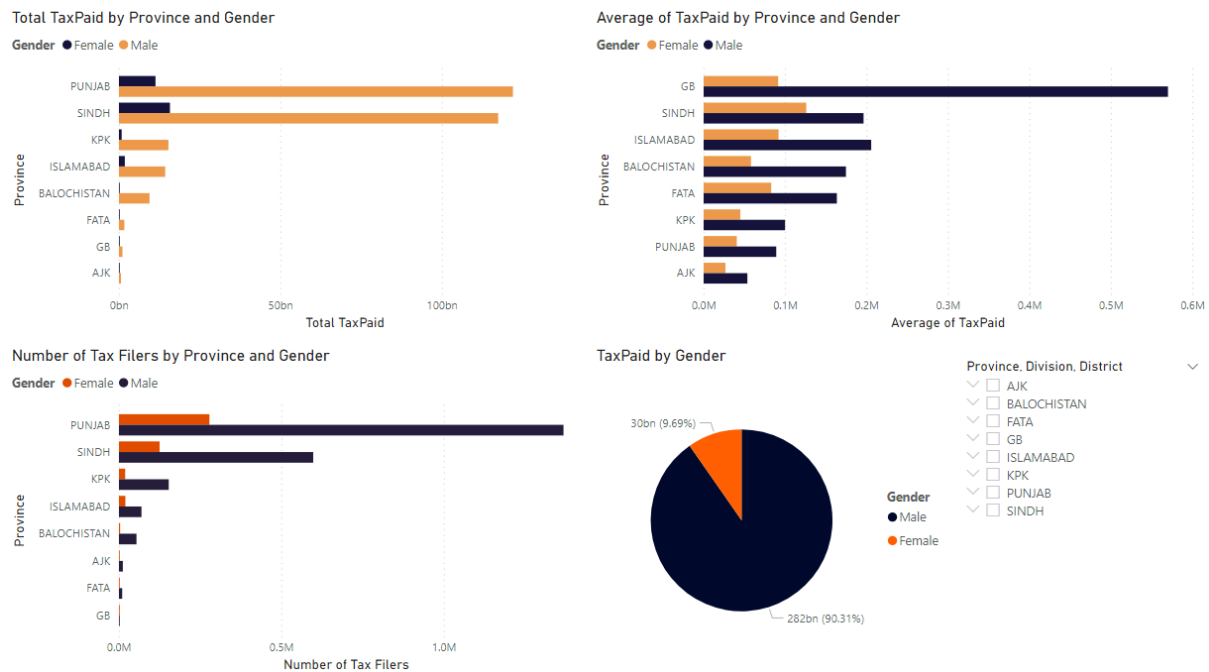
Although, Punjab has 60% of the tax filers while Sindh only has 26%, total tax collected from both provinces is almost the same. When looked at the average tax collected, the results are surprising. Average tax collected in GB is significantly more than the other provinces and this difference is quite huge. Next province is Sindh followed by Islamabad, Balochistan, FATA and KPK. While Punjab is the most densely populated province of Pakistan, it is second last in terms of average tax collected. Least amount of average tax was collected from AJK. This finding just highlights the immense economic role played by Sindh.



('TaxPaid_treemap' page from Power BI report)

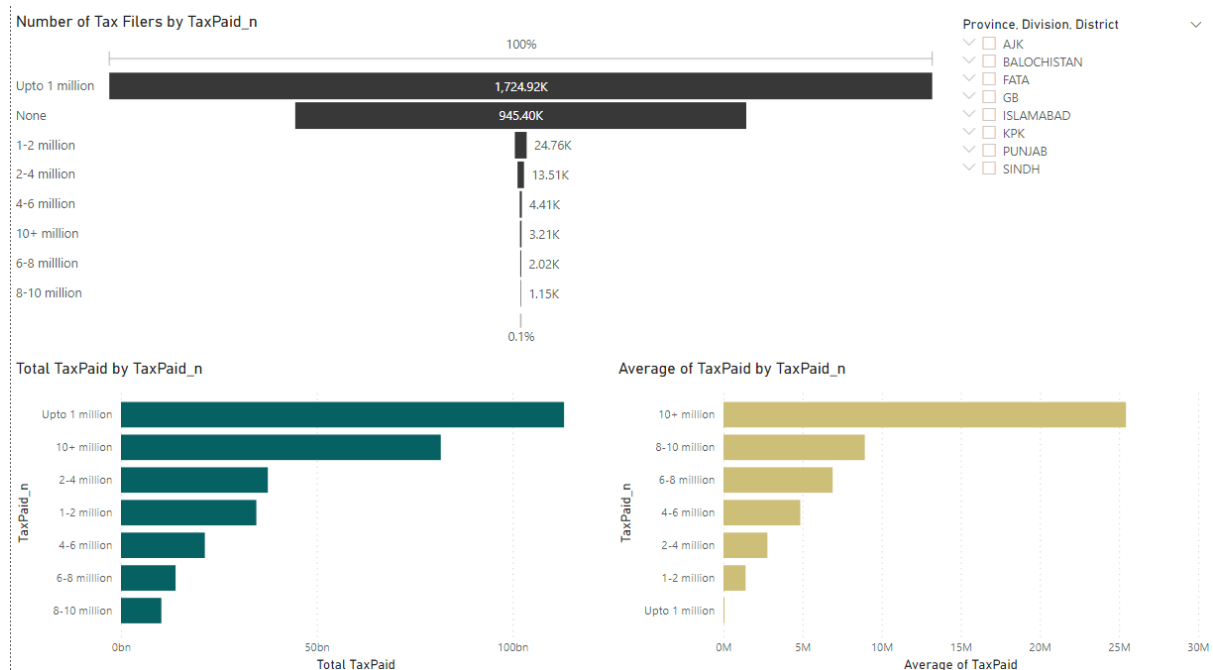
This tree map is a very easy and convenient way to navigate around the provinces, regions, divisions, and districts of Pakistan to find out the total tax collected (top) and average tax paid per individual (bottom) in that specified area which can be difficult to do on charts. As shown above in the top tree map, region of Karachi paid the most tax in Sindh. The highest amount of tax was collected from the district of Karachi East (90 455 million rupees).

From the bottom tree map we find that although on average every individual paid on average Rs. 176.13K in tax returns in Pakistan, but in the district of Hunza in Gilgit-Baltistan, on average every individual paid Rs. 1 524.93K in annual tax returns for the year 2018. This is the highest average tax of all the districts in Pakistan.



(**'Gender'** page from Power BI report)

Total tax paid by male taxpayers was 282 billion Rupees and 30 billion Rupees was paid by female taxpayers. Which means 90.3% of the total tax paid was by male taxpayers while 9.7% of the total tax was paid by female taxpayers. On average every male taxpayer contributed Rs. 190.50K in annual tax returns and on average every female contributed Rs. 103.4K in annual tax returns.

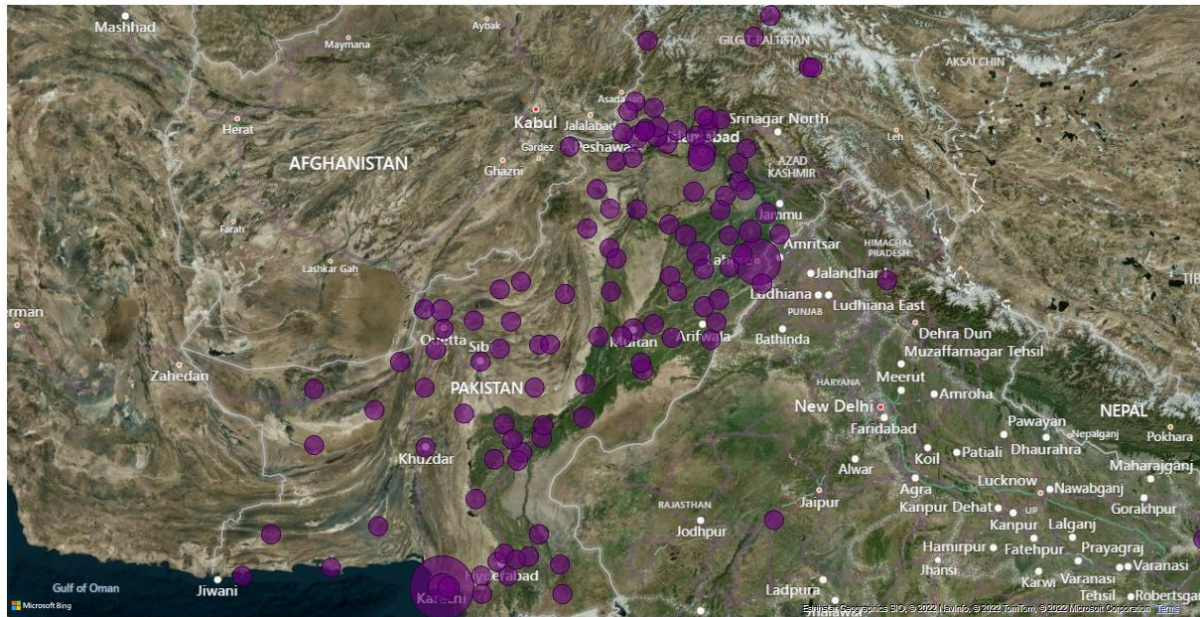


('TaxPaid_n' page from Power BI report)

63.4% of the tax filers belong to 'Upto 1 million' tax class/bin which means that 63.4% of the tax filers paid up to one million rupees tax followed by 34.8% tax filers who did not file tax return for the year 2018. The remaining 1.2% of tax filers make up all the other tax classes/bins.

The amount of tax paid up to 1 million rupees makes up 36% of the total tax collected, followed by 10+ million rupees tax which is 26% of the total tax collected. When looking at the average tax collected per tax class/bin, 10+ million tax class/bin has the highest average by a significant difference. Every tax filer in 10+ million tax class/bin paid on average 25 million rupees in annual tax returns while every filer in Upto 1 million tax class paid on average 65.5K rupees tax.

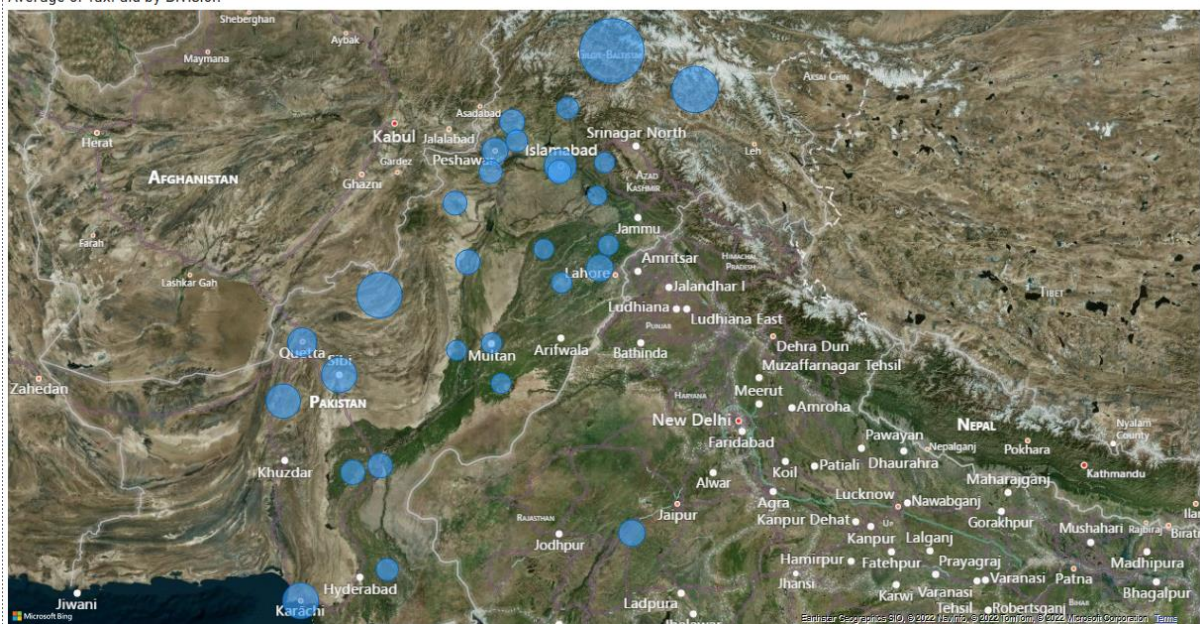
Total TaxPaid by District



('TaxPaid_map' page from Power BI report)

This map is a visual representation of the total amount of tax paid across districts of Pakistan. Size of bubbles is proportionate to the total amount of tax paid. Bigger the bubble, higher the amount of tax paid in that district.

Average of TaxPaid by Division



('TaxPaid_map' page from Power BI report)

This map is a visual representation of the average amount of tax paid per individual across divisions of Pakistan. Size of bubbles is proportionate to the average amount of tax paid per individual. Bigger the bubble, higher the amount of tax paid per individual in that division.

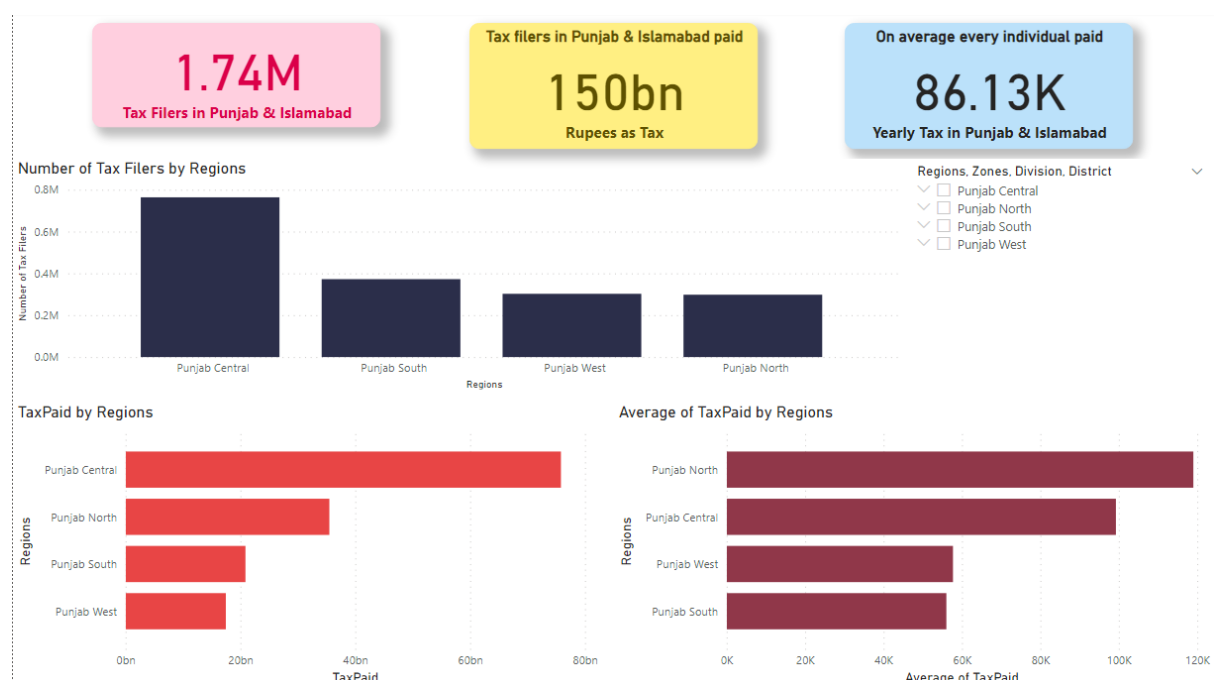
8.3 Tax story of Punjab and Islamabad

Districts in Punjab Central: Gujranwala, Gujrat, Hafizabad, Mandi Baha Uddin, Narowal, Sialkot

Districts in Punjab North: Islamabad, Attock, Chakwal, Jhelum, Rawalpindi

Districts in Punjab South: Multan, Khanewal, Lodhran, Pakpattan, Sahiwal, Vehari, Dera Ghazi Khan, Layyah, Muzaffargarh, Rajanpur, Bahawalpur, Bahawalnagar, Rahim Yar Khan

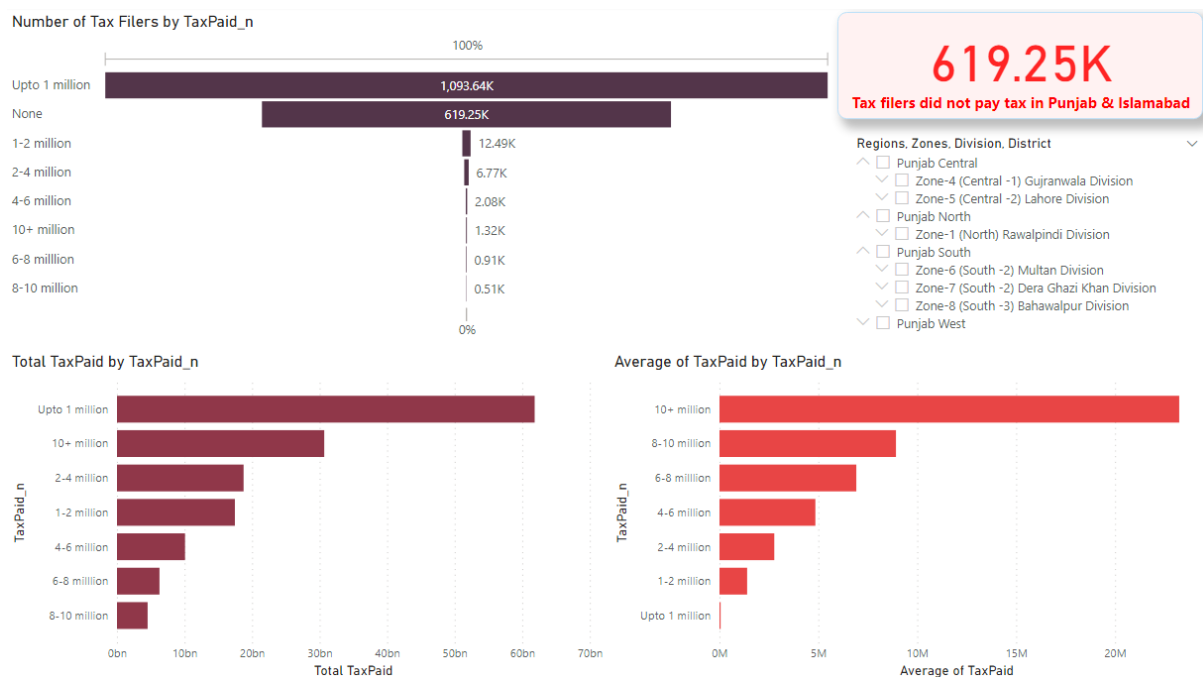
Districts in Punjab West: Sarghoda, Bhakkar, Khushab, Mianwali, Chiniot, Faisalabad, Jhang, Toba Tek Singh



(*'Punjab-Isb_TaxPaid'* page from Power BI report)

1.74 million tax filers paid 150 billion rupees tax in Punjab and Islamabad. On average every individual paid Rs. 86.13K in annual tax returns. Punjab Central region has 43% (763K tax filers), followed by Punjab South which has 21% (372K tax filers), Punjab West which has 17% (302K tax filers), and Punjab North which has 17% (298K tax filers) of the total tax filers in Punjab and Islamabad.

Tax collected in Punjab Central adds up 50% of the total tax paid in Punjab and Islamabad. Punjab North paid 23.6%, Punjab South 13%, and Punjab West 11.6% of the total tax collected in Punjab and Islamabad. On average, every individual in Punjab North paid the most tax which is 118K rupees, followed by Punjab Central (99K rupees), Punjab West (57K rupees) and Punjab South (56K rupees).

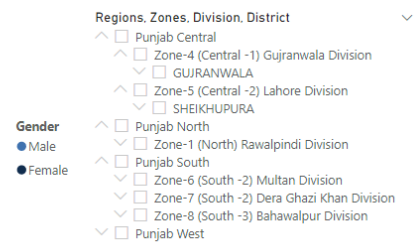
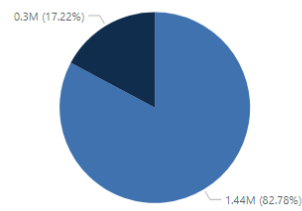


('Punjab-Isb_TaxPaid_n' page from Power BI report)

619.25K tax filers (35.6%) did not pay their taxes for the year 2018 in Punjab and Islamabad. It can be estimated based on the average that 53 billion rupees tax was not paid in Punjab and Islamabad.

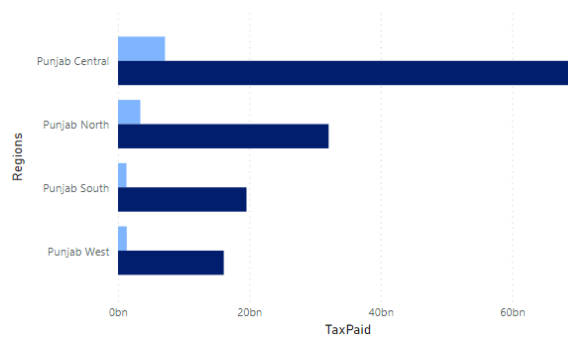
Upto 1 million tax class has the highest number of tax filers (1 093.64K) in Punjab and Islamabad and the highest total tax paid was also by the upto 1 million tax class. On average, tax filers who paid 10+ million rupees as tax paid the highest amount of taxes. On average every individual who paid more than 10 million rupees in taxes paid 23 million rupees as their annual tax returns in Punjab and Islamabad.

Number of Tax Filers by Gender



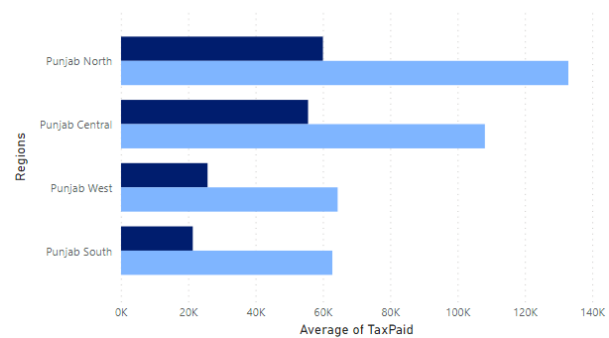
TaxPaid by Regions and Gender

Gender ● Female ● Male



Average of TaxPaid by Regions and Gender

Gender ● Female ● Male



('Punjab-Isb_Gender' page from Power BI report)

Among the 1.74 million tax filers in Punjab and Islamabad, 1.44 million (82.78%) of the tax filers were male and 0.3 million (17.22%) were female. Total tax paid by male taxpayers was 136 billion Rupees and 13 billion Rupees was paid by female taxpayers. Which means 91.16% of the total tax paid was by male taxpayers while 8.84% of the total tax was paid by female taxpayers.

On average every male taxpayer contributed Rs. 205.7K in annual tax returns and on average every female contributed Rs. 92K in annual tax returns in Islamabad. On average every male taxpayer contributed Rs. 89K in annual tax returns and on average every female contributed Rs. 40K in annual tax returns in Punjab. Male taxpayers paid more taxes than female taxpayers in total and on average in all Punjab regions.



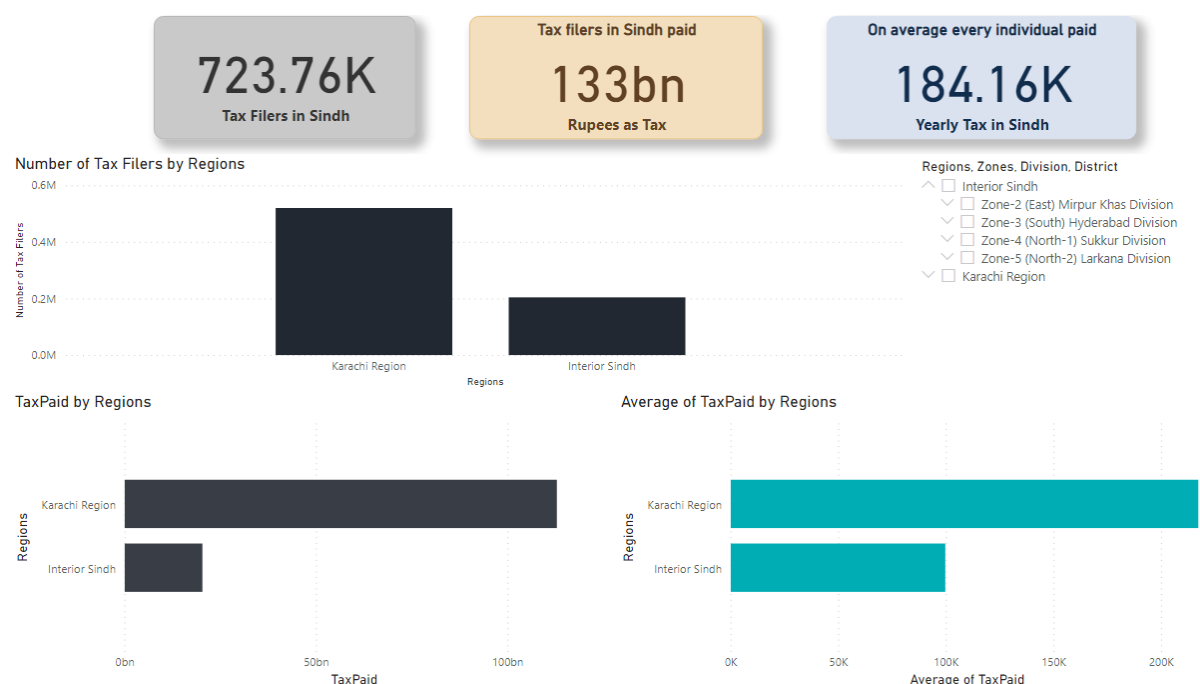
(' Punjab-Isb_Gender_TaxPaid_n' page from Power BI report)

If we look at the genders divided into tax classes for Punjab and Islamabad, we find that total tax paid by males for each tax class is significantly higher than that for females. But on average every female paid the almost the same tax as every male for each tax class. For 8-10 million tax class, every female (9 million rupees) paid on average 26.7K more tax than every male (8.9 million rupees).

8.4 Tax story of Sindh

Districts in Karachi region: Karachi Central, Karachi East, Karachi Korangi

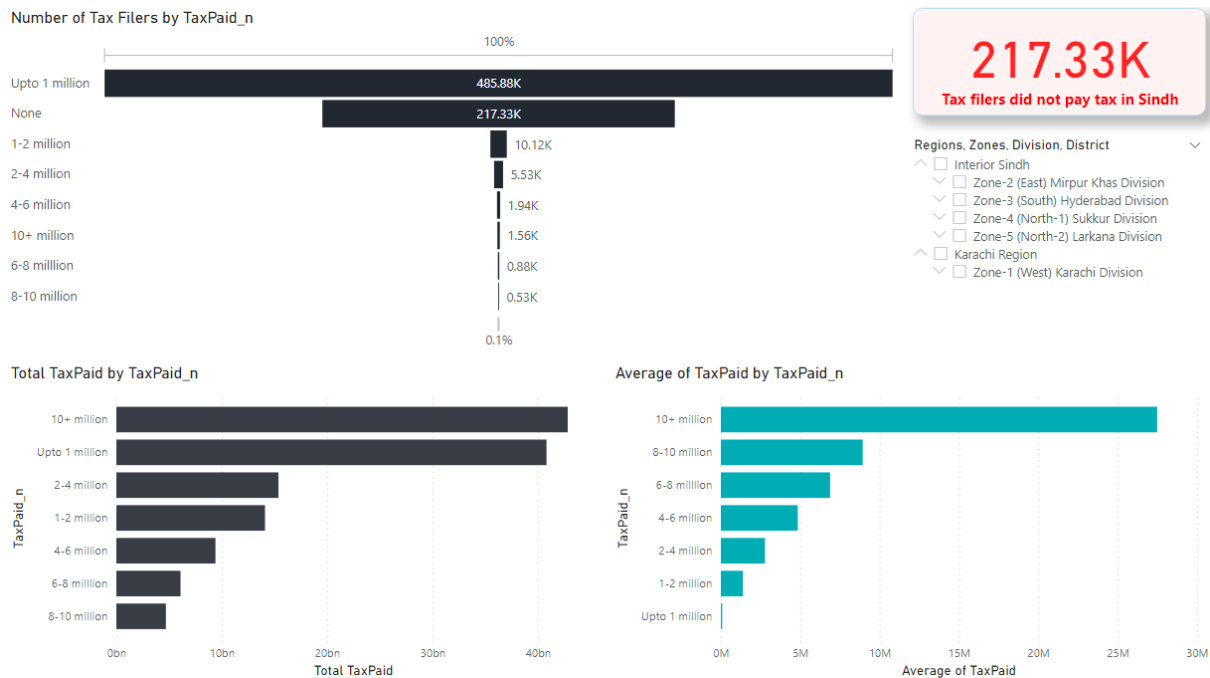
Districts in Interior Sindh: Mirpur Khas, Sanghar, Umerkot, Badin, Dadu, Hyderabad, Jamshoro, Matiari, Tando Allah Yar, Tando Muhammad Khan, Thatta, Benazir Abad, Ghotki, Khairpur, Sukkur, Tharparkar, Jacobabad, Larkana, Qamber Shahdadt, Shikarpur



(*'Sindh_TaxPaid'* page from Power BI report)

723.76K tax filers paid 133 billion rupees tax in Sindh. On average every individual paid Rs. 184.16K in annual tax returns. Karachi region has 71.8% (519K tax filers) while Interior Sindh has 28% (203.9K tax filers) of the total tax filers in Sindh.

Tax collected in Karachi region adds up to 112 billion rupees which is 84% of the total collected in Sindh. 20.3 billion rupees tax was collected from Interior Sindh which makes up 15% of the total tax collected from Sindh. On average, every individual paid Rs. 217K tax in Karachi region and Rs. 99.7K tax in Interior Sindh.



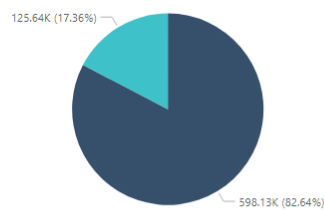
(*'Sindh_TaxPaid_n'* page from Power BI report)

217.33K tax filers (30%) did not pay their taxes for the year 2018 in Sindh. It can be estimated based on the average that 40 billion rupees tax was not paid in Sindh.

Upto 1 million tax class has the highest number of tax filers (458.88K) in Sindh. Although the 10+ million tax class only has 0.2% (1.5K tax filers) of the tax filers in Sindh but the highest total tax paid was by the 10+ million tax class (42.8 billion rupees) followed by the upto 1 million tax class (40 billion rupees).

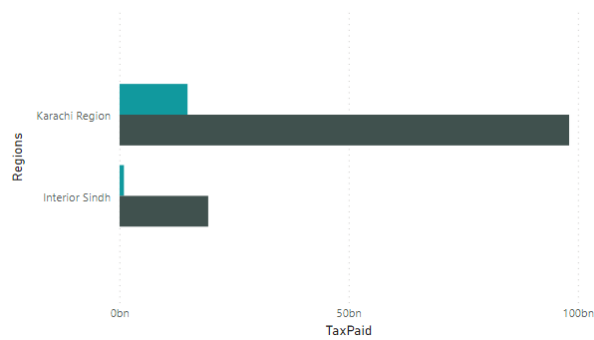
On average, tax filers who paid 10+ million rupees as tax paid the highest amount of taxes. On average every individual who paid more than 10 million rupees in taxes paid 27 million rupees as their annual tax returns in Sindh. On average, least amount of tax was paid by the upto 1 million tax class (83.9K rupees).

Number of Tax Filers by Gender



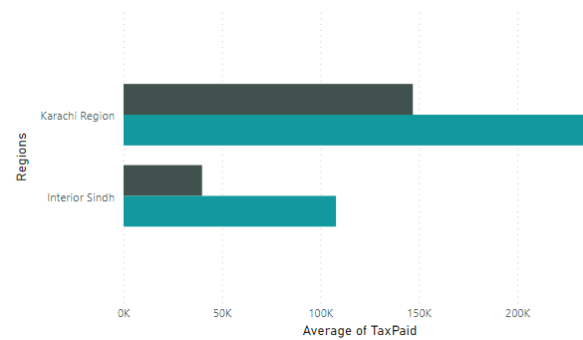
TaxPaid by Regions and Gender

Gender ● Female ● Male



Average of TaxPaid by Regions and Gender

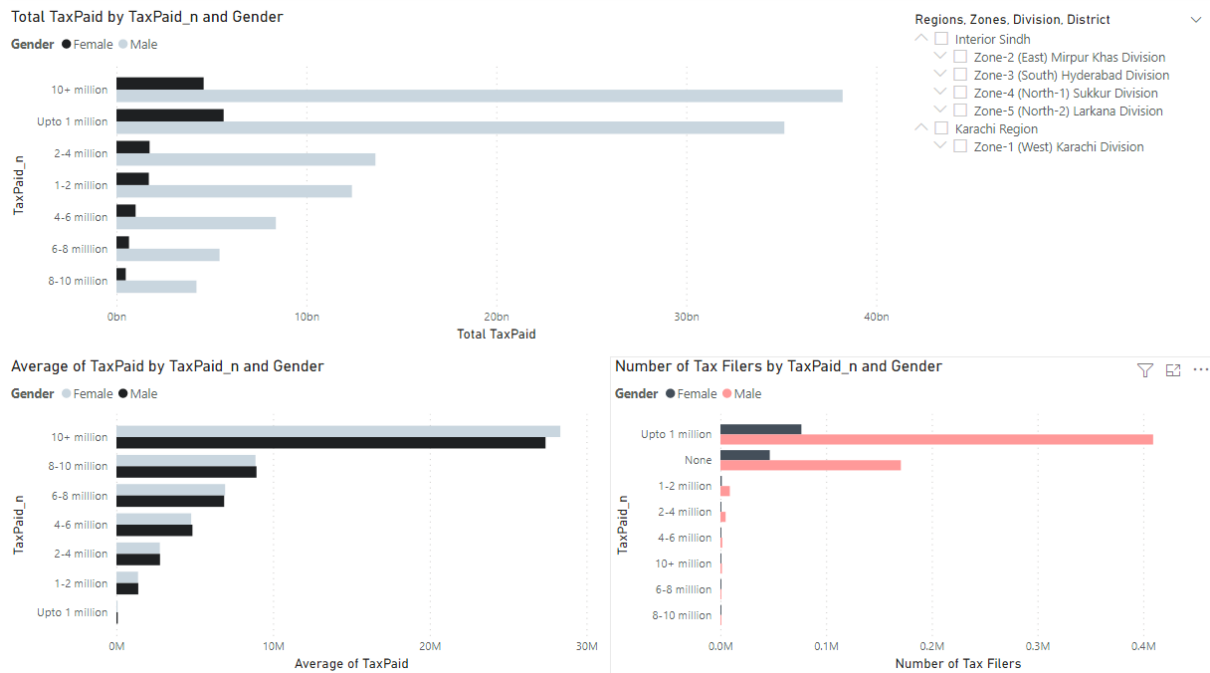
Gender ● Female ● Male



('Sindh_Gender' page from Power BI report)

Among the 723.76K tax filers in Sindh, 598.13K (82.64%) of the tax filers were male and 125.64K (17.36%) were female. Total tax paid by male taxpayers was 117 billion Rupees and 16 billion Rupees was paid by female taxpayers. Which means, in Sindh, 88.12% of the total tax paid was by male taxpayers while 11.88% of the total tax was paid by female taxpayers.

On average every male taxpayer contributed Rs. 196K in annual tax returns and on average every female contributed Rs. 126K in annual tax returns in Sindh. Male taxpayers paid more taxes than female taxpayers in total and on average in all Sindh regions.



(' Sindh_Gender_TaxPaid_n' page from Power BI report)

If we look at the genders divided into tax classes for Sindh, we find that total tax paid by males for each tax class is significantly higher than that for females. But on average every female paid the almost the same tax as every male for each tax class. For 10+ million tax class, every female (28 million rupees) paid on average 94.5K more tax than every male (27 million rupees).

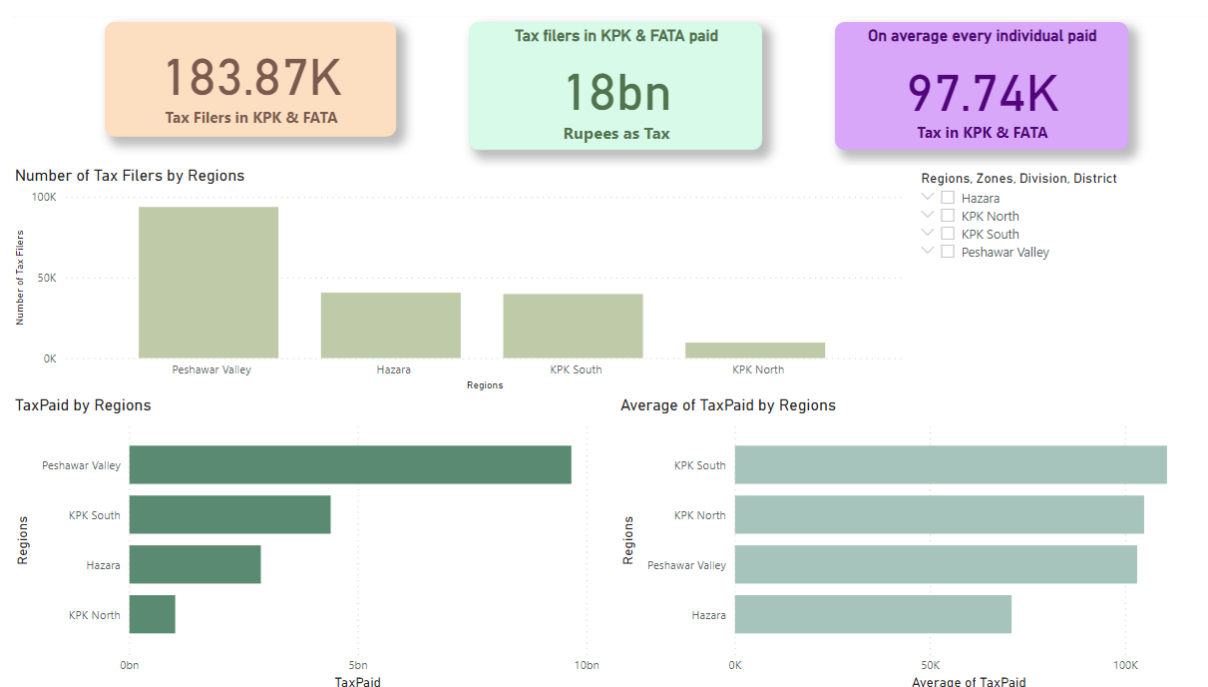
8.5 Tax story of KPK and FATA

Districts in Hazara: Abbottabad, Batagram, Haripur, Kohistan, Mansehra

Districts in KPK North: Baner, Chitral, Dir, Malakand, Shangla, Swat

Districts in KPK South: Bannu, Lakki Marwat, Dera Ismail Khan, Tank, Hangu, Karak, Kohat, Bajaur Agency, Khyber Agency, Kurram Agency, Mohmand Agency, North Waziristan Agency, Orakzai Agency, South, Waziristan Agency

Districts in Peshawar Valley: Mardan, Swabi, Charsadda, Nowshera, Peshawar

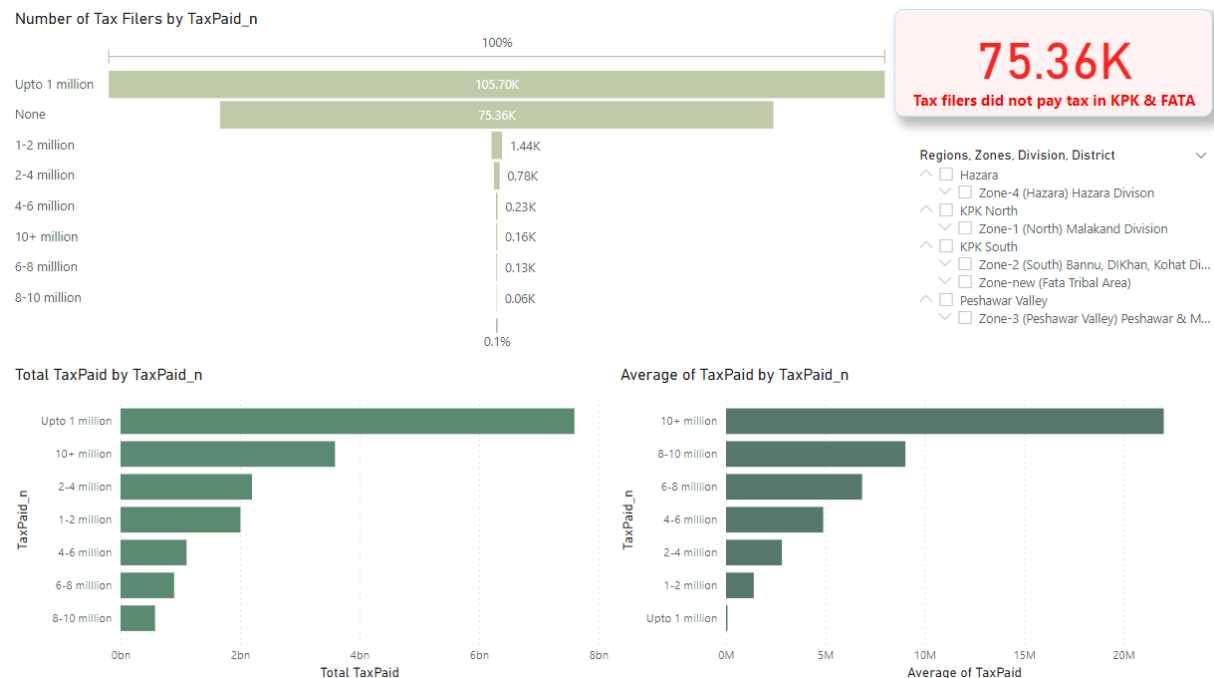


(‘KPK-FATA_TaxPaid’ page from Power BI report)

183.87K tax filers paid 18 billion rupees tax in KPK and FATA. On average every individual paid Rs. 97.74K in annual tax returns. Peshawar Valley has 51% (93.8K tax filers), Hazara has 22% (40.6K tax filers), KPK South has 21.6% (39.8K tax filers), and KPK North has 5.2% (9.6K tax filers) of the total tax filers in KPK and FATA.

Tax collected in Peshawar Valley adds up to 9.6 billion rupees which is 53.7% of the total tax collected in KPK and FATA. KPK South paid 4.4 billion rupees in taxes (24.4%), Hazara paid 2.8 billion rupees in taxes (16%), and KPK North paid 1 billion rupees (5.59%) out of the total tax collected in KPK and FATA. On

average, every individual in in KPK South paid the most tax which is 110K rupees, followed by KPK North (104.8K rupees), Peshawar Valley (103K rupees) and Hazara (70.9K rupees).

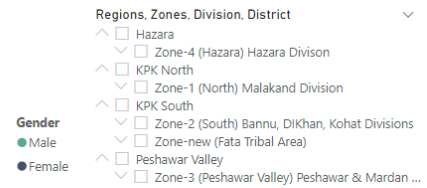
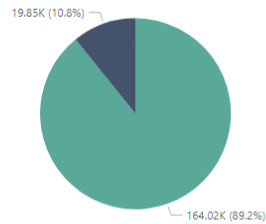


(*'KPK-FATA_TaxPaid_n'* page from Power BI report)

75.36K tax filers (35.6%) did not pay their taxes for the year 2018 in KPK and FATA. It can estimated based on the average that 7.3 billion rupees tax was not paid in KPK and FATA.

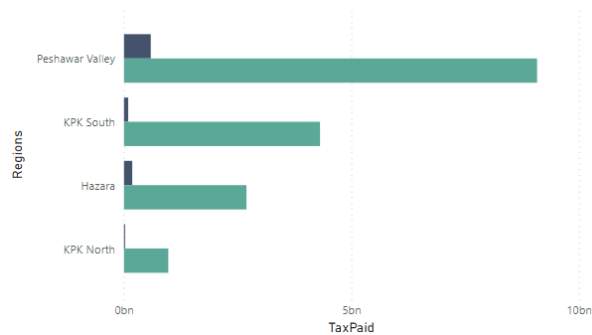
Upto 1 million tax class has the highest number of tax filers (105.70K) in KPK and FATA and the highest total tax paid was also by the upto 1 million tax class which is 7.5 billion rupees or 42.2% of the total tax collected. On average, tax filers who paid 10+ million rupees as tax paid the highest amount of taxes. On average every individual who paid more than 10 million rupees in taxes paid 22 million rupees as their annual tax returns in KPK and FATA.

Number of Tax Filers by Gender



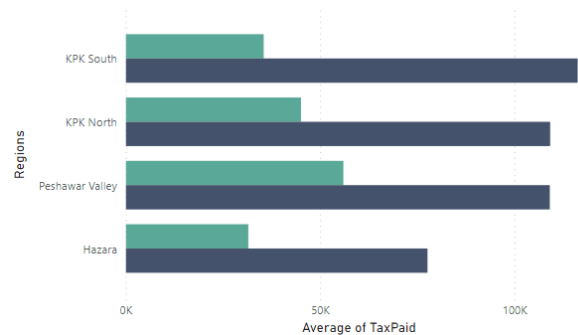
TaxPaid by Regions and Gender

Gender ● Female ● Male



Average of TaxPaid by Regions and Gender

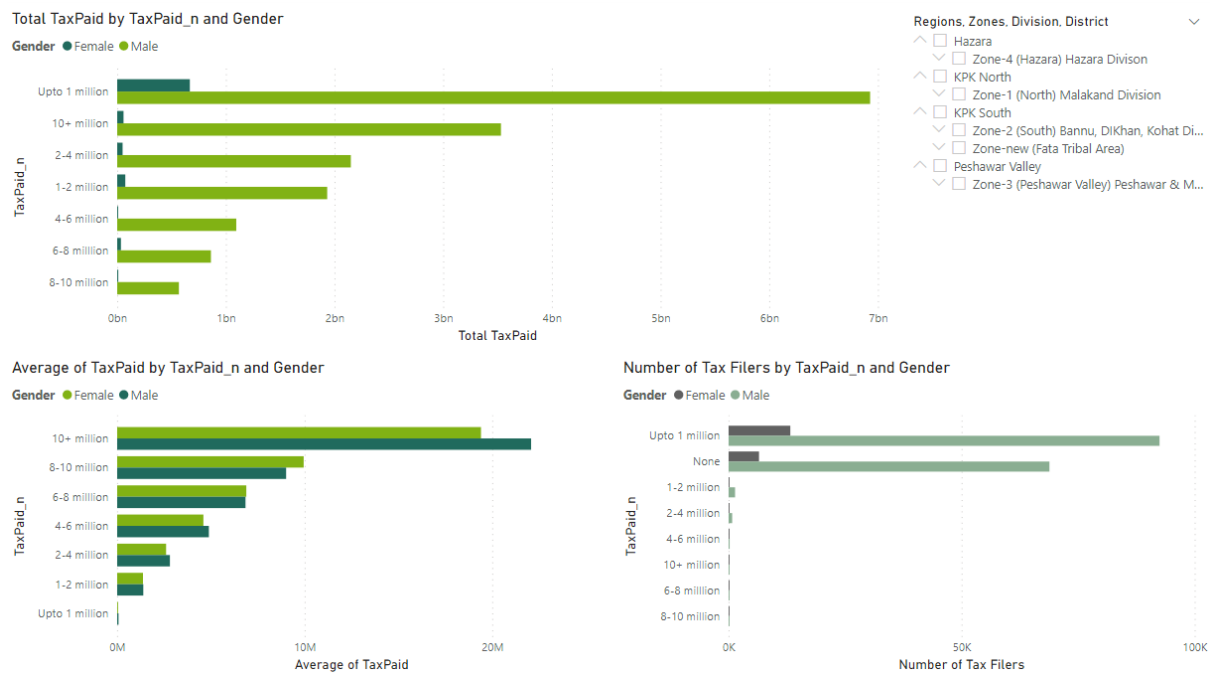
Gender ● Female ● Male



('KPK-FATA_Gender' page from Power BI report)

Among the 183.87K tax filers in KPK and FATA, 164K (89.2%) of the tax filers were male and 19.85K (10.8%) were female. Total tax paid by male taxpayers was 17 billion Rupees and 1 billion Rupees was paid by female taxpayers. Which means 94.97% of the total tax paid was by male taxpayers while 5.03% of the total tax was paid by female taxpayers.

On average every male taxpayer contributed Rs. 100K in annual tax returns and on average every female contributed Rs. 45.1K in annual tax returns in KPK. On average every male taxpayer contributed Rs. 163.6K in annual tax returns and on average every female contributed Rs. 83K in annual tax returns in FATA. Male taxpayers paid more taxes than female taxpayers in total and on average in all KPK and FATA regions.



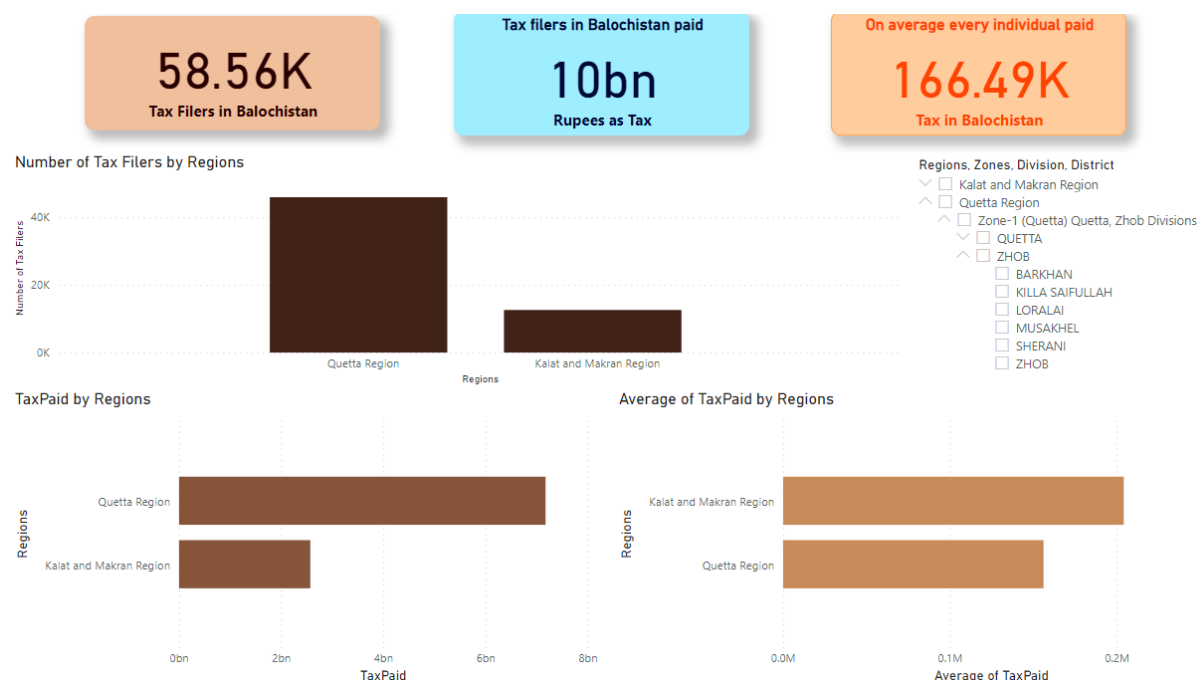
(**'KPK-FATA_Gender_TaxPaid_n'** page from Power BI report)

If we look at the genders divided into tax classes for KPK and FATA, we find that total tax paid by males for each tax class is significantly higher than that for females. But on average every female paid the almost the same tax as every male for each tax class. For 8-10 million tax class, every female (9.9 million rupees) paid on average 93.5K more tax than every male (9 million rupees).

8.6 Tax Story of Balochistan

Districts in Kalat and Makran Region: Awaran, Kalat, Kharan, Khuzdar, Lasbela, Mastung, Washuk, Gwadar, Kech, Mand, Panjgur, Jaffar Abad, Jhal Magsi, Kachhi, Lehri, Nasir Abad, Dera Bugti, Harnai, Kohlu, Sibi, Ziarat

Districts in Quetta Region: Chagai, Killa Abdullah, Nushki, Pishin, Quetta, Barkhan, Killa Saifullah, Loralai, Musa Khel, Sherani, Zhob

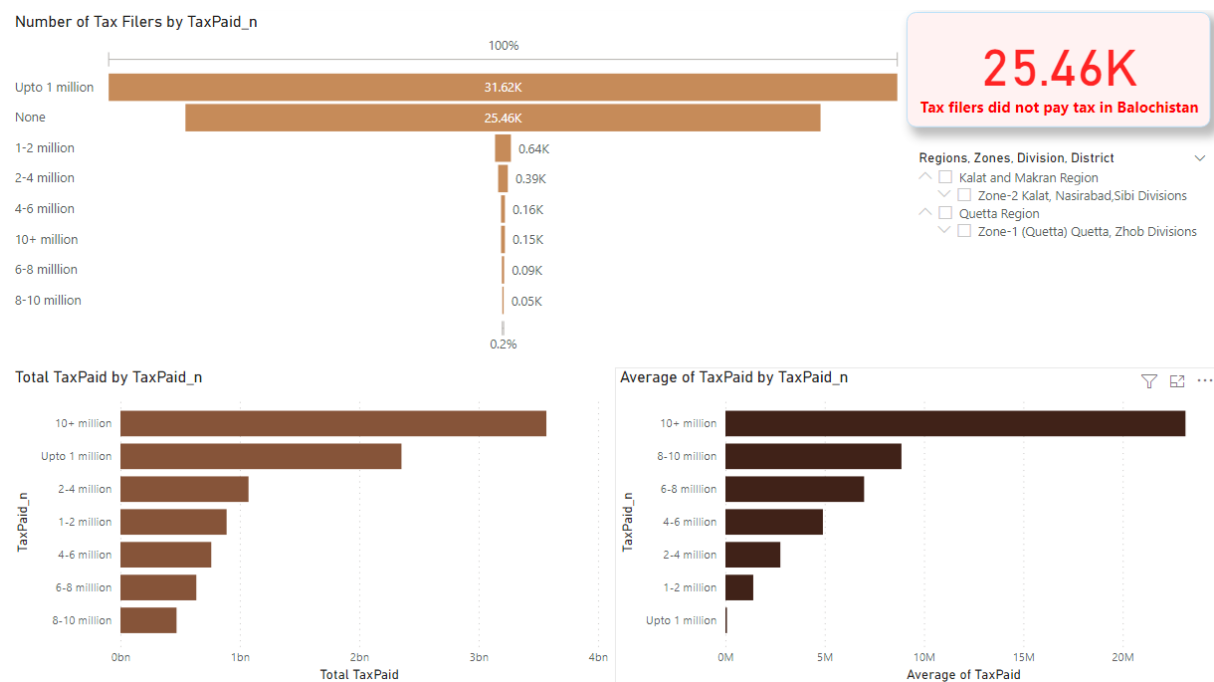


(*'Balochistan_TaxPaid'* page from Power BI report)

58.56K tax filers paid a total of 10 billion rupees tax in Balochistan. On average every individual paid Rs. 166.49K in annual tax returns. Quetta Region has 78.4% (45.9K filers) while Kalat and Makran Region has 21.5% (12.5K filers) of the total tax filers in Balochistan.

Tax collected in Quetta Region adds up to 7.17 billion rupees which is 71% of the total collected in Balochistan. 2.5 billion rupees tax was collected from Kalat and Makran Region which makes up 25.7% of the total tax collected from

Balochistan. On average, every individual paid Rs. 204K tax in Kalat and Makran Region and Rs. 156K tax in Quetta region. Although, the total tax collected is higher for Quetta region but each individual on average paid Rs. 48K more in taxes in Kalat and Makran Region than in Quetta Region.



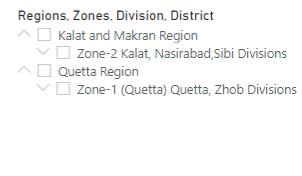
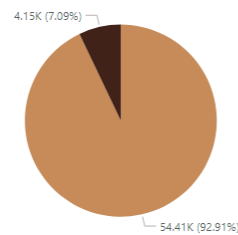
(*'Balochistan_TaxPaid_n'* page from Power BI report)

25.46K tax filers (43%) did not pay their taxes for the year 2018 in Balochistan. It can estimated based on the average that 4.2 billion rupees tax was not paid in Balochistan.

Upto 1 million tax class has the highest number of tax filers (31.62K) in Balochistan. Although the 10+ million tax class only has 0.2% (0.15K tax filers) of the tax filers in Balochistan but the highest total tax paid was by the 10+ million tax class (3.5 billion rupees) followed by the upto 1 million tax class (2.3 billion rupees).

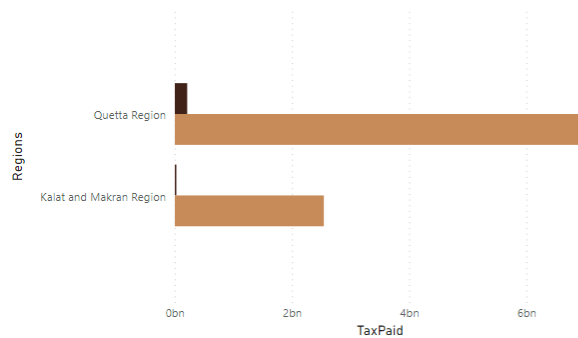
On average, tax filers who paid 10+ million rupees as tax paid the highest amount of taxes. On average every individual who paid more than 10 million rupees in taxes paid 23 million rupees as their annual tax returns in Balochistan. On average, least amount of tax was paid by the upto 1 million tax class (74.4K rupees).

Number of Tax Filers by Gender



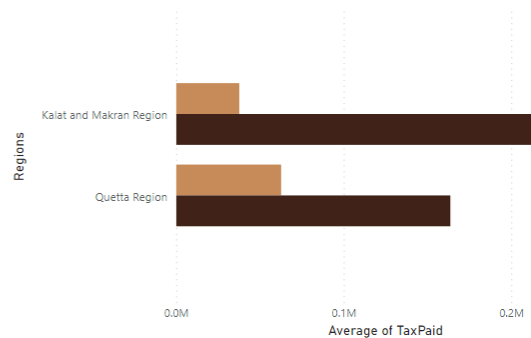
TaxPaid by Regions and Gender

Gender ● Female ● Male



Average of TaxPaid by Regions and Gender

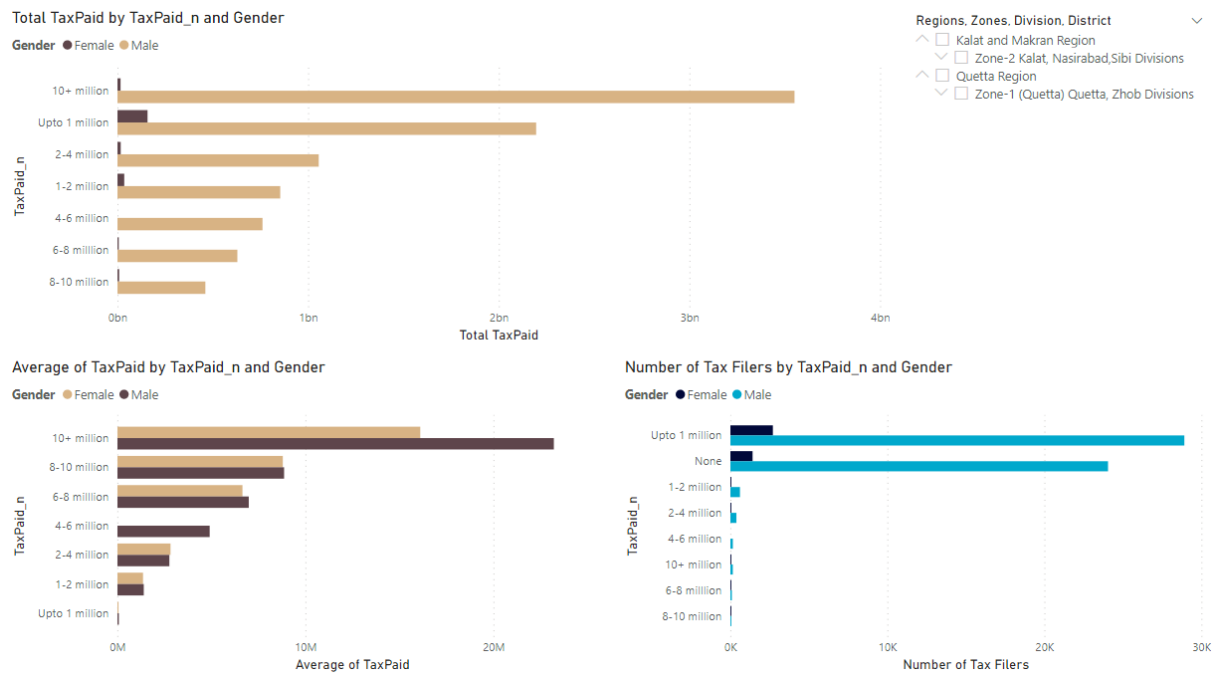
Gender ● Female ● Male



(**'Balochistan_Gender'** page from Power BI report)

Among the 58.56K tax filers in Balochistan, 54.41K (92.91%) of the tax filers were male and 4.15K (7.09%) were female. Total tax paid by male taxpayers was 9.5 billion Rupees and 241 million Rupees was paid by female taxpayers. Which means, in Balochistan, 97.52% of the total tax paid was by male taxpayers while 2.48% of the total tax was paid by female taxpayers.

On average every male taxpayer contributed Rs. 214K in annual tax returns and on average every female contributed Rs. 37.6K in annual tax returns in Kalat and Makran Region. On average every male taxpayer contributed Rs. 163.6K in annual tax returns and on average every female contributed Rs. 62.6K in annual tax returns in Quetta Region. Male taxpayers paid more taxes than female taxpayers in total and on average in all Balochistan regions.



(**'Balochistan_Gender_TaxPaid_n'** page from Power BI report)

If we look at the genders divided into tax classes for Balochistan, we find that total tax paid by males for each tax class is significantly higher than that for females. But on average every female paid almost the same tax as every male for each tax class except the 10+ million tax class and 4-6 million tax class. There are zero female tax filers who paid 4-6 million rupees in income tax returns for the year 2018 in Balochistan.

8.7 Tax Story of GB

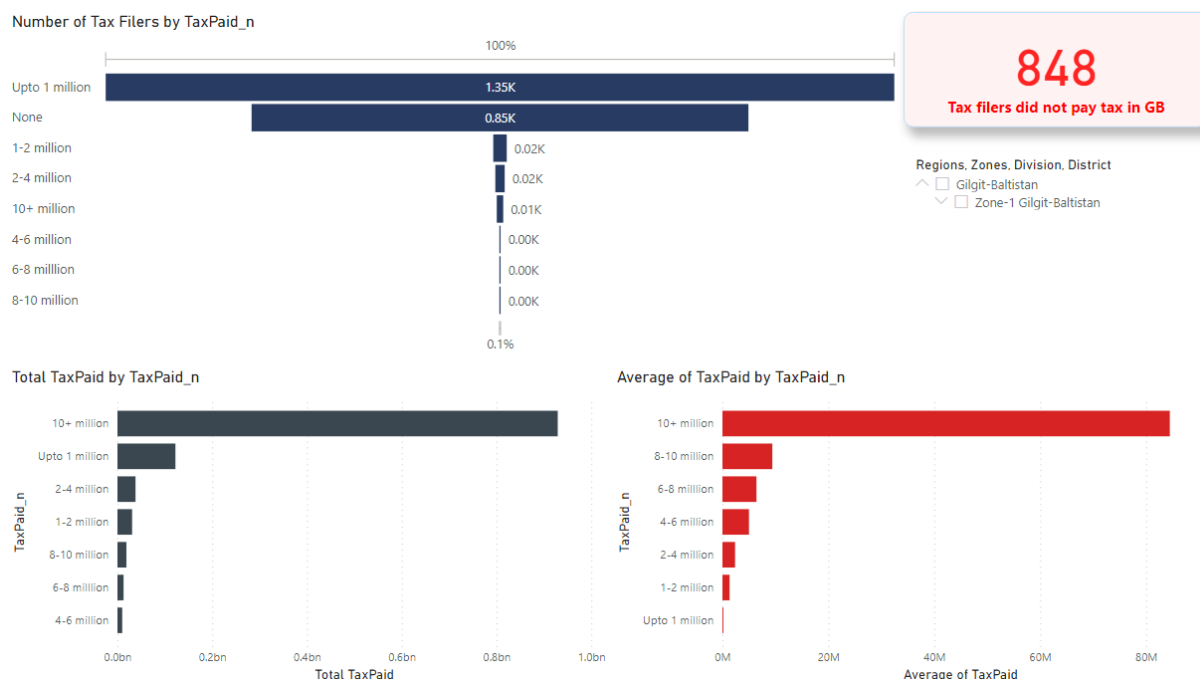
Districts in Gilgit-Baltistan: Kharmang, Shigar, Skardu, Astore, Diamer, Ghizer, Gilgit, Hunza, Nagar



(*'GB_TaxPaid'* page from Power BI report)

The province of Gilgit-Baltistan only has Gilgit-Baltistan region so I will be using the divisions 'Gilgit' and 'Baltistan' to analyze these charts. 2250 tax filers paid a total of 1.16 billion rupees tax in GB. On average every individual paid Rs. 516.50K in annual tax returns. 99.2% filers (2233 tax filers) belong to the Gilgit division while 0.75% filers (17 tax filers) belong to the Baltistan division in GB.

Tax collected in Gilgit adds up to 1.1 billion rupees which is 99.5% of the total collected in GB. 5.5 million rupees tax was collected from Baltistan which makes up 0.5% of the total tax collected from GB. On average, every individual paid Rs. 517K tax in Gilgit and Rs. 326.7K tax in Baltistan. This average tax paid by Gilgit is the highest for all the divisions in Pakistan and third highest by Baltistan. This means that every individual in Gilgit paid the highest amount of tax in Pakistan. And every individual in Baltistan paid the third highest amount of tax in Pakistan.

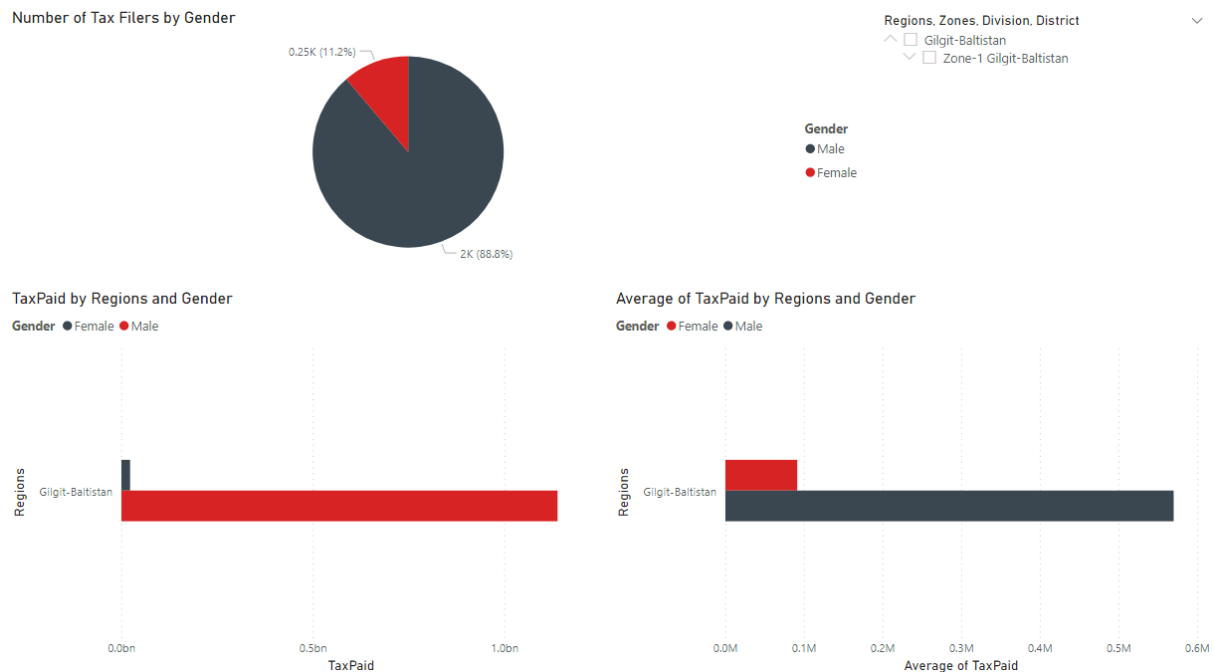


(‘GB_TaxPaid_n’ page from Power BI report)

848 tax filers (37.6%) did not pay their taxes for the year 2018 in GB. It can be estimated based on the average that 437 million rupees tax was not paid in GB.

Upto 1 million tax class has the highest number of tax filers (1.35K) in GB. Although the 10+ million tax class only has 0.48% (11 tax filers) of the tax filers in GB but the highest total tax paid was by the 10+ million tax class (929 million rupees) followed by the upto 1 million tax class (122 million rupees).

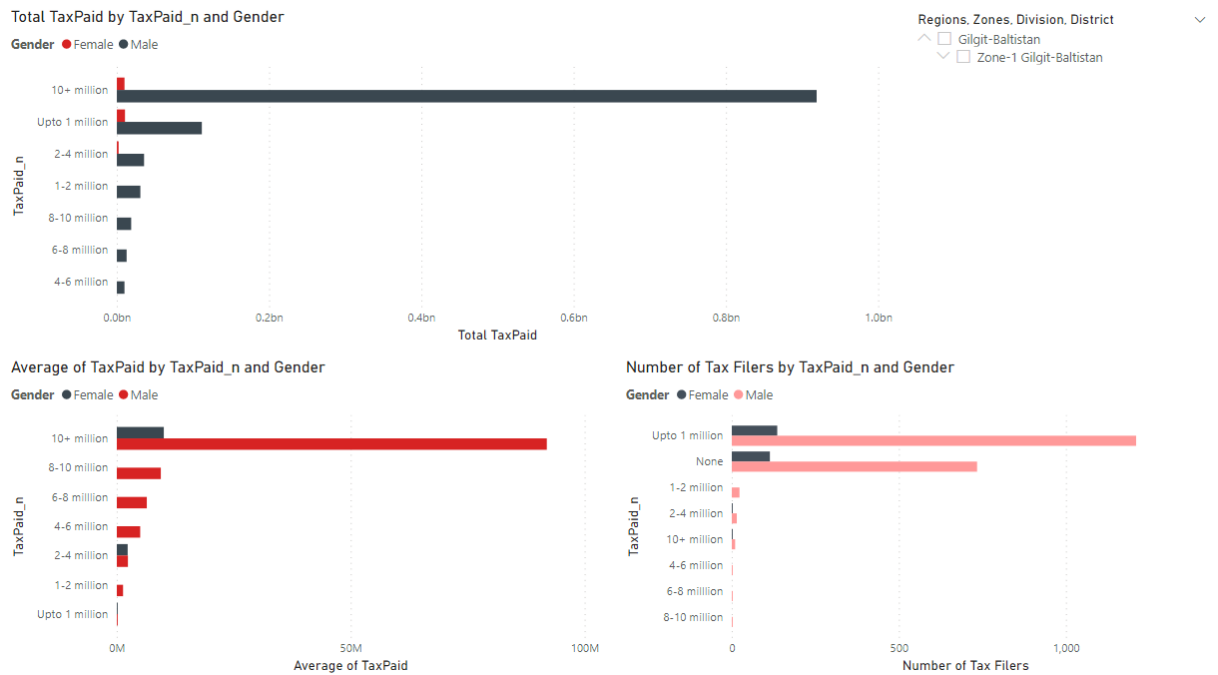
On average, tax filers who paid 10+ million rupees as tax paid the highest amount of taxes. On average every individual who paid more than 10 million rupees in taxes paid 84 million rupees as their annual tax returns in GB. On average, least amount of tax was paid by the upto 1 million tax class (90.8K rupees). This means that 11 people in GB paid an average of 48 million rupees in taxes for 2018 which contributes to 92.9% of the total tax collected in GB.



(‘GB_Gender’ page from Power BI Report)

Among the 2250 tax filers in GB, 2K (88.8%) of the tax filers were male and 0.25K (11.2%) were female. Total tax paid by male taxpayers was 1.1 billion Rupees and 23 million Rupees was paid by female taxpayers. Which means, in GB, 98.01% of the total tax paid was by male taxpayers while 1.99% of the total tax was paid by female taxpayers.

On average, every male taxpayer contributed Rs. 570K in annual tax returns and on average every female contributed Rs. 91.5K in annual tax returns in GB. Male taxpayers paid more taxes than female taxpayers in total and on average in all GB regions.



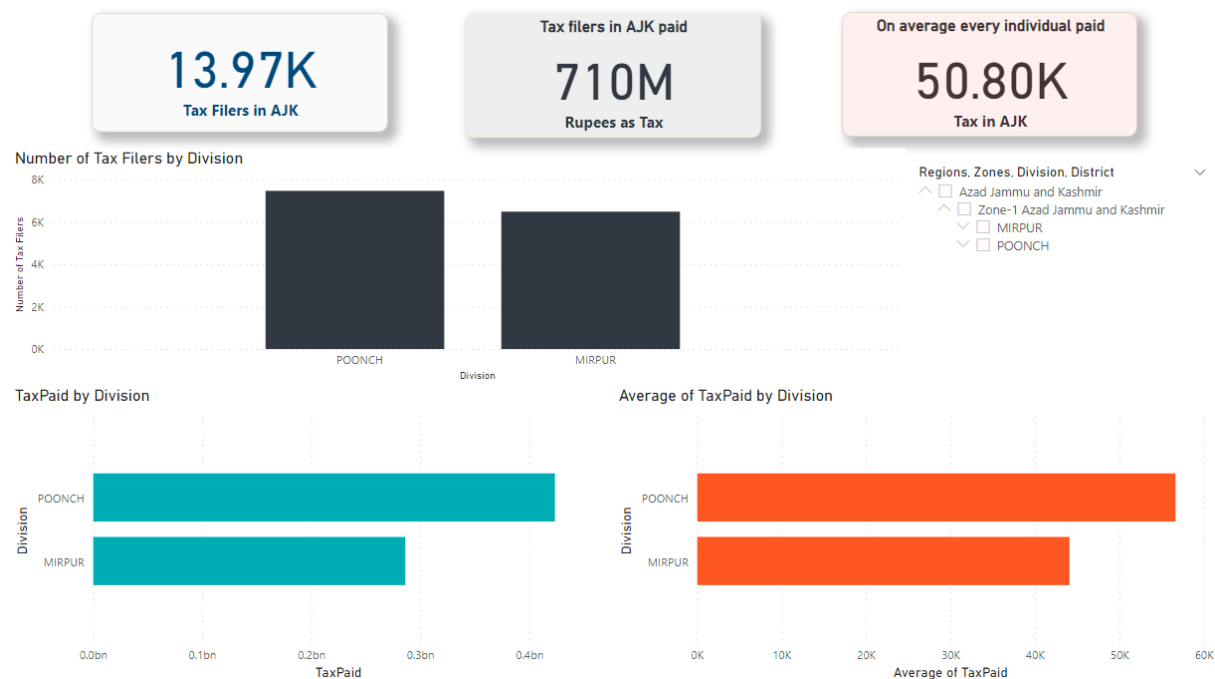
(**'GB_Gender_TaxPaid_n'** page from Power BI report)

If we look at the genders divided into tax classes for GB, we find that female tax filers only paid 10+ million tax, upto 1 million tax or 2-4 million rupees tax. Rest of the tax classes have zero female tax filers. Total tax paid by males for each tax class is very high compared to that of females.

Female taxpayers who paid 2-4 million rupees and upto 1 million rupees paid on average the same amount as male taxpayers.

8.8 Tax Story of AJK

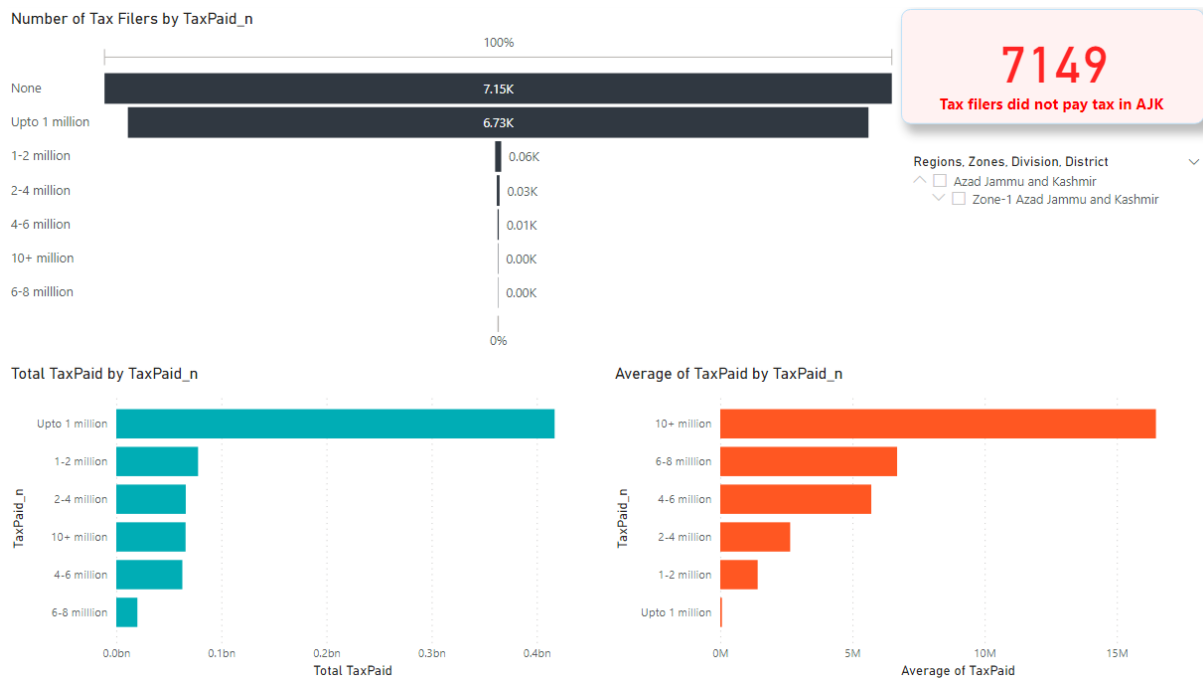
Districts in Azad Jammu and Kashmir: Bhimber, Kotli, Mirpur, Hattian Bala, Muzaffarabad, Poonch, Sudhanoti



(**'AJK_TaxPaid'** page from Power BI report)

The province of AJK only has Azad Jammu and Kashmir region so I will be using the divisions 'Mirpur' and 'Poonch' to analyze these charts. 13.97K tax filers paid a total of 710 million rupees tax in AJK. On average every individual paid Rs. 50.80K in annual tax returns. 53.5% filers (7478 tax filers) belong to the Poonch division while 46.4% filers (6494 tax filers) belong to the Mirpur division in AJK.

Tax collected in Poonch adds up to 423 million rupees which is 59.6% of the total tax collected in AJK. 286 million rupees tax was collected from Mirpur which makes up 40.3% of the total tax collected from AJK. On average, every individual paid Rs. 56.6K tax in Poonch and Rs. 44K tax in Mirpur.



(‘AJK_TaxPaid_n’ page from Power BI report)

7149 tax filers (51.1%) did not pay their taxes for the year 2018 in AJK. It can be estimated based on the average that 363 million rupees tax was not paid in AJK.

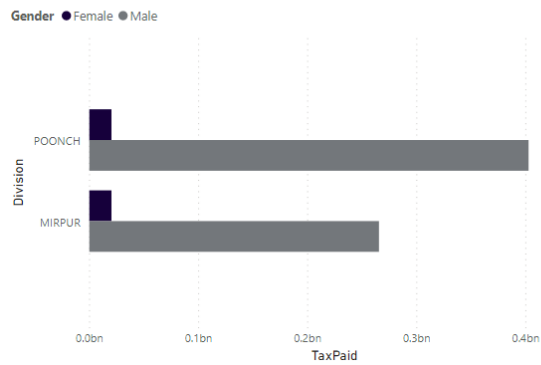
AJK is the only province where the number of tax filers who did not pay tax is higher than those who did. Upto 1 million tax class has the highest number of tax filers (6.73K) in AJK. The highest total tax was paid by upto 1 million tax class which is 416 million rupees or 58.7% of the total tax collected in AJK.

On average, tax filers who paid 10+ million rupees as tax paid the highest amount of taxes. On average every individual who paid more than 10 million rupees in taxes paid 16.4 million rupees as their annual tax returns in AJK. On average, least amount of tax was paid by the upto 1 million tax class (62K rupees).

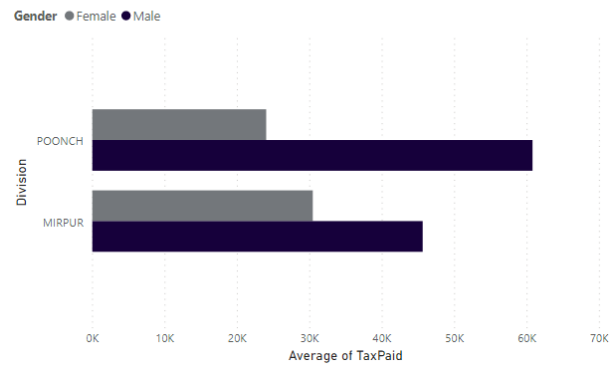
Number of Tax Filers by Gender



TaxPaid by Division and Gender



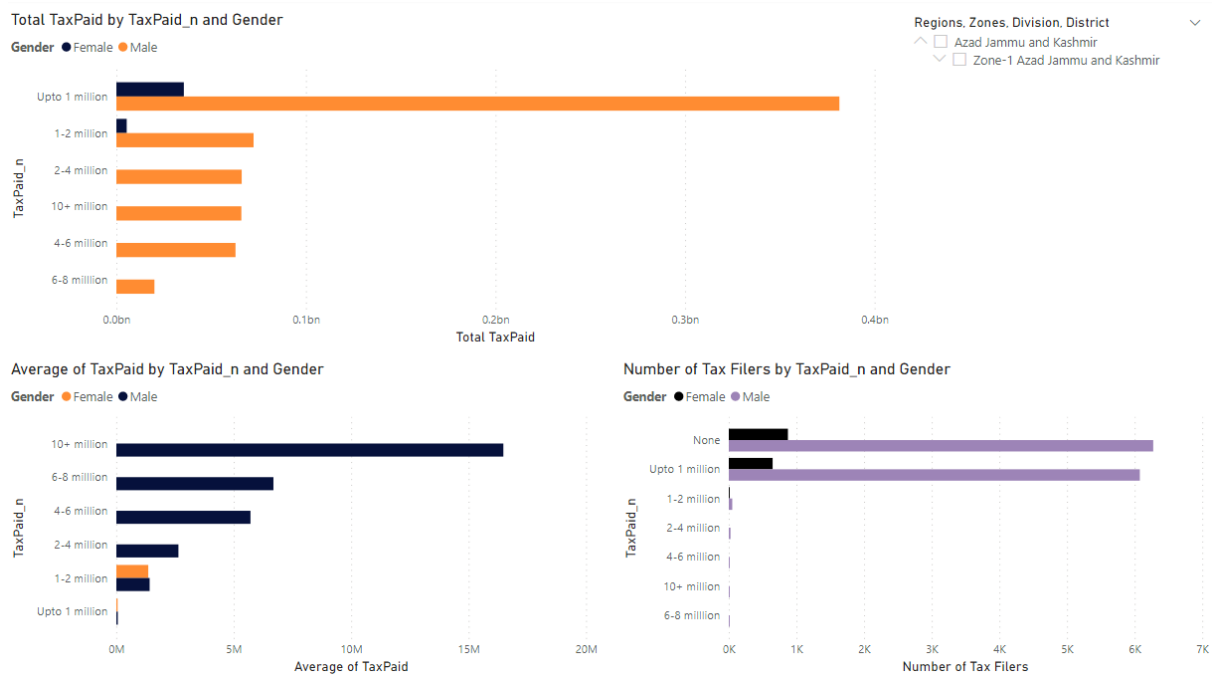
Average of TaxPaid by Division and Gender



(*'AJK_Gender'* page from Power BI report)

Among the 13.97K tax filers in AJK, 12.45K (89.08%) of the tax filers were male and 1.53K (10.92%) were female. Total tax paid by male taxpayers was 669 million Rupees and 41 million Rupees was paid by female taxpayers. Which means, in AJK, 94.22% of the total tax paid was by male taxpayers while 5.78% of the total tax was paid by female taxpayers.

On average, every male taxpayer contributed Rs. 53.7K in annual tax returns and on average every female contributed Rs. 26.8K in annual tax returns in AJK. Male taxpayers paid more taxes than female taxpayers in total and on average in all AJK regions.



(‘AJK_Gender_TaxPaid_n’ page from Power BI report)

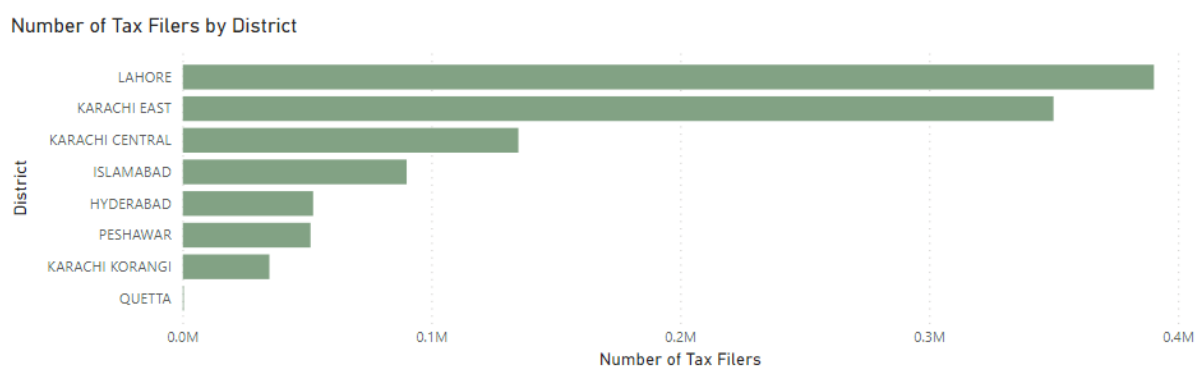
If we look at the genders divided into tax classes for AJK, we find that female tax filers only paid upto 1 million tax and 1-2 million rupees tax. Rest of the tax classes have zero female tax filers. Total tax paid by males for each tax class is very high compared to that of females.

Female taxpayers who paid 1-2 million rupees and upto 1 million rupees paid on average the same amount as male taxpayers.

8.9 Tax Story of the Major Cities of Pakistan

I have compared the tax statistics of the six major cities of Pakistan: Karachi (which is further divided into three districts), Lahore (which, according to the dataset, comes under Sheikhpura division), Islamabad, Hyderabad, Peshawar, and Quetta.

8.9.1 Tax filers and Tax Paid

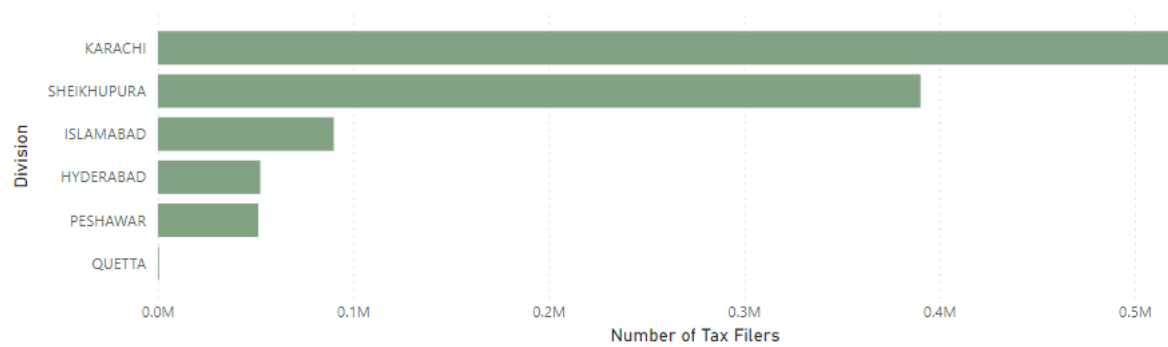


*(‘**aboutTaxFilers**’ page from Power BI report)*

When we look at the number of tax filers in by district, Lahore has the most: 390K filers followed by Karachi East 349.9K filers, Karachi Central 134.9K filers, Islamabad 90K filers, Hyderabad 52.4K filers, Peshawar 41.4K filers, Karachi Korangi 34.8K filers and Quetta with just 147 tax filers. It is important to note that even when Karachi is divided into three districts, those districts still have more number of tax filers than some many major cities of Pakistan.

Another interesting thing to note here is the number of tax filers in Quetta are surprisingly low given the fact that it is the provincial capital and largest city of Balochistan. It is also the 10th largest city in Pakistan with a population of about 1 million according to the census of 2017. This means that only 0.014% individuals of the total population in Quetta are tax filers.

Number of Tax Filers by Division



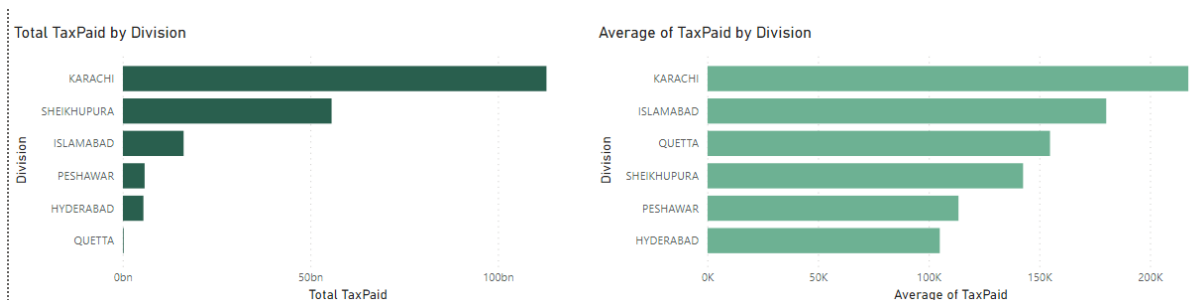
(*'aboutTaxFilers'* page from Power BI report)

When divided by division, Karachi has the highest number of tax filers with 519.7K filers.



(*'aboutTaxFilers'* page from Power BI report)

The number of tax filers in these major cities add up to 1.10 million which is 40% of the total number of tax filers in Pakistan. Out of 1.10 million tax filers, 735.50K (66%) paid their tax for the year 2018 while 368.71K (33%) did not.

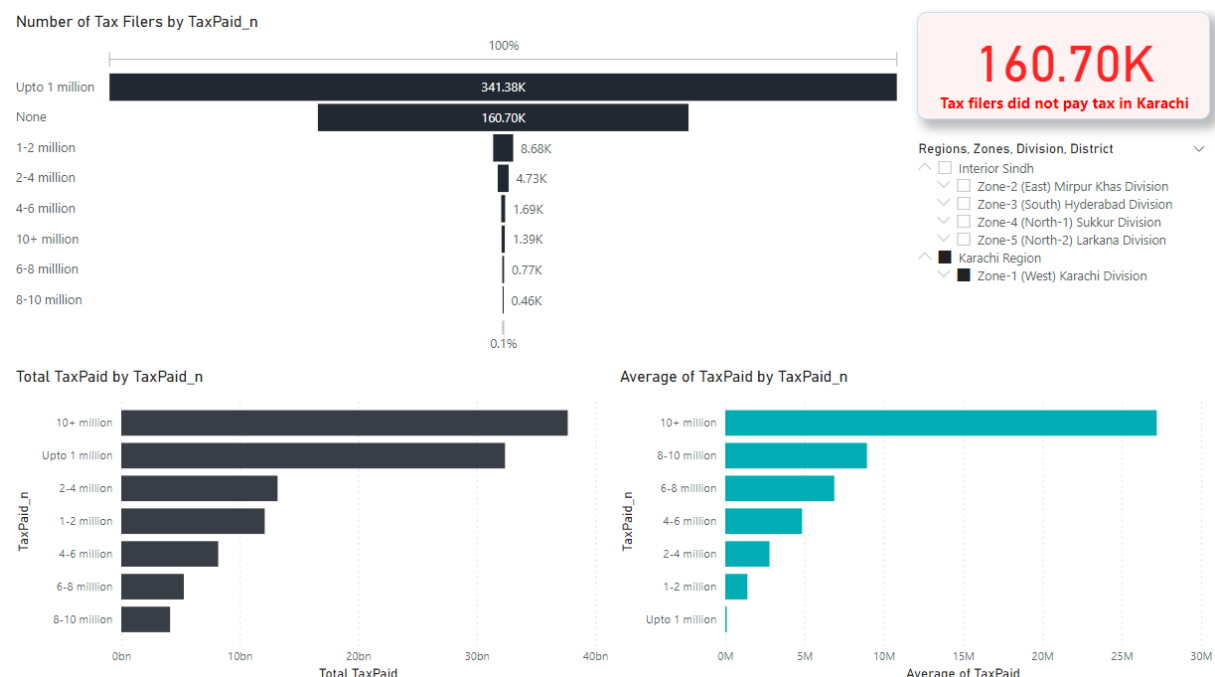


(*'tot_avg_TaxPaid'* page from Power BI report)

Total tax paid in these cities add up to 196 billion rupees which is 62.8% of the total tax paid in Pakistan. Karachi paid the highest total tax in Pakistan which is 112.9 billion rupees or 36.1% of the total tax collected in Pakistan. Lahore paid 55 billion rupees which is less than half of tax paid by Karachi. This finding shows that Karachi is well and truly the economic hub of Pakistan. 16.2 billion rupees tax was collected in Islamabad, 5.8 billion rupees tax collected in Peshawar, 5.5 billion rupees tax collected in Hyderabad and only 22 million rupees tax collected in Quetta.

On average, every individual in Karachi paid the highest tax compared to the other major cities of Pakistan. On average, every individual in Karachi contributed Rs. 217K in annual tax returns. In Islamabad every individual contributed Rs. 180K in annual tax returns, in Quetta Rs. 154K, in Lahore Rs. 142.6K, in Peshawar Rs. 113K, and in Hyderabad Rs. 104.9K.

8.9.2 Tax classes and Tax Not Paid

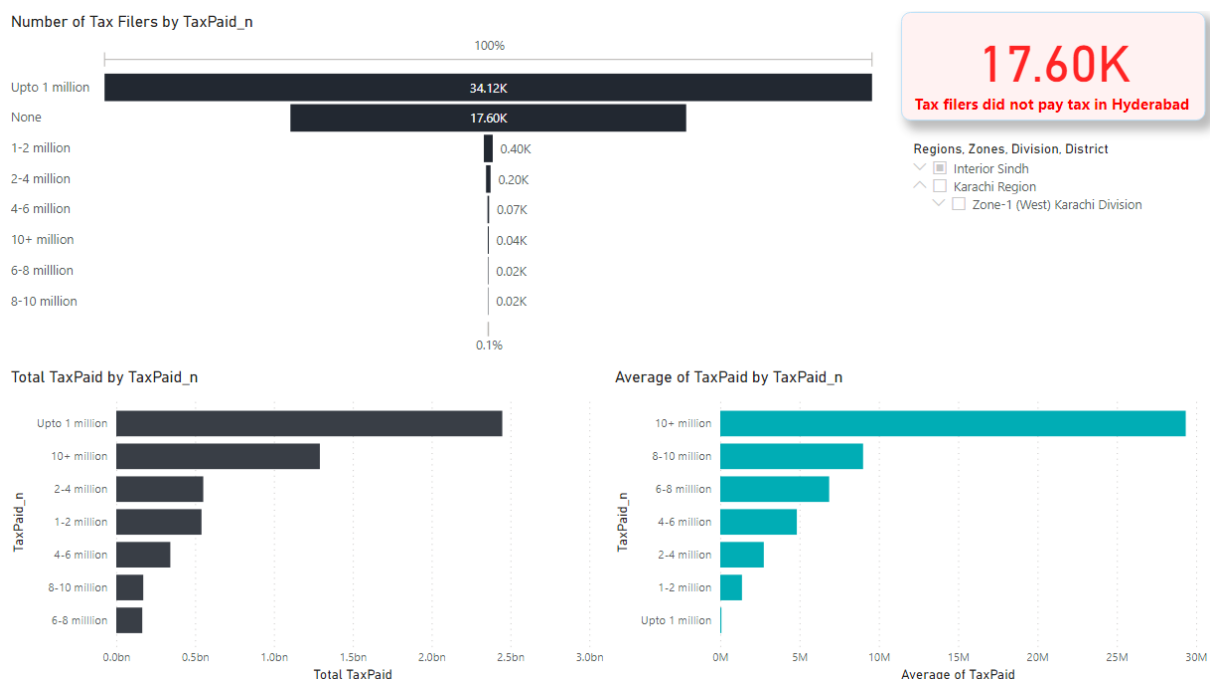


(*'Sindh_TaxPaid_n'* page from Power BI report)

160.70K tax filers (30.9%) did not pay their taxes for the year 2018 in Karachi. It can estimated based on the average that 34.9 billion rupees tax was not paid in Karachi.

Upto 1 million tax class has the highest number of tax filers (341.38K) in Karachi. Although the 10+ million tax class only has 0.2% (1.39K tax filers) of the tax filers in Karachi but the highest total tax paid was by the 10+ million tax class (37.6 billion rupees) followed by the upto 1 million tax class (32.3 billion rupees).

On average, tax filers who paid 10+ million rupees as tax paid the highest amount of taxes. On average every individual who paid more than 10 million rupees in taxes paid 27 million rupees as their annual tax returns in Karachi. On average, least amount of tax was paid by the upto 1 million tax class (94.8K rupees).

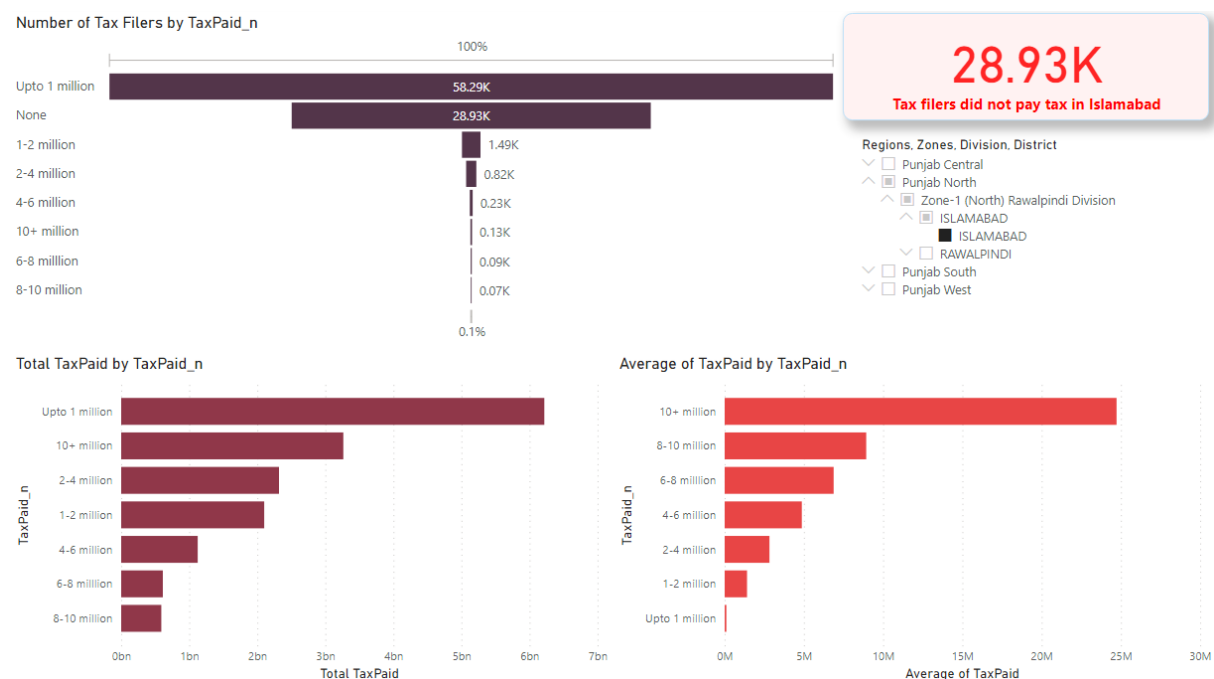


(*'Sindh_TaxPaid_n'* page from Power BI report)

17.60K tax filers (33.5%) did not pay their taxes for the year 2018 in Hyderabad. It can estimated based on the average that 1.8 billion rupees tax was not paid in Hyderabad.

Upto 1 million tax class has the highest number of tax filers (34.12K) in Hyderabad. The highest total tax was paid by upto 1 million tax class (2.4 billion rupees) followed by 10+ million tax class (1.2 billion rupees) despite having just 0.08% (44 tax filers) of the total tax filers in Hyderabad.

On average, tax filers who paid 10+ million rupees as tax paid the highest amount of taxes. On average every individual who paid more than 10 million rupees in taxes paid 29 million rupees as their annual tax returns in Hyderabad. On average, least amount of tax was paid by the upto 1 million tax class (71.7K rupees).

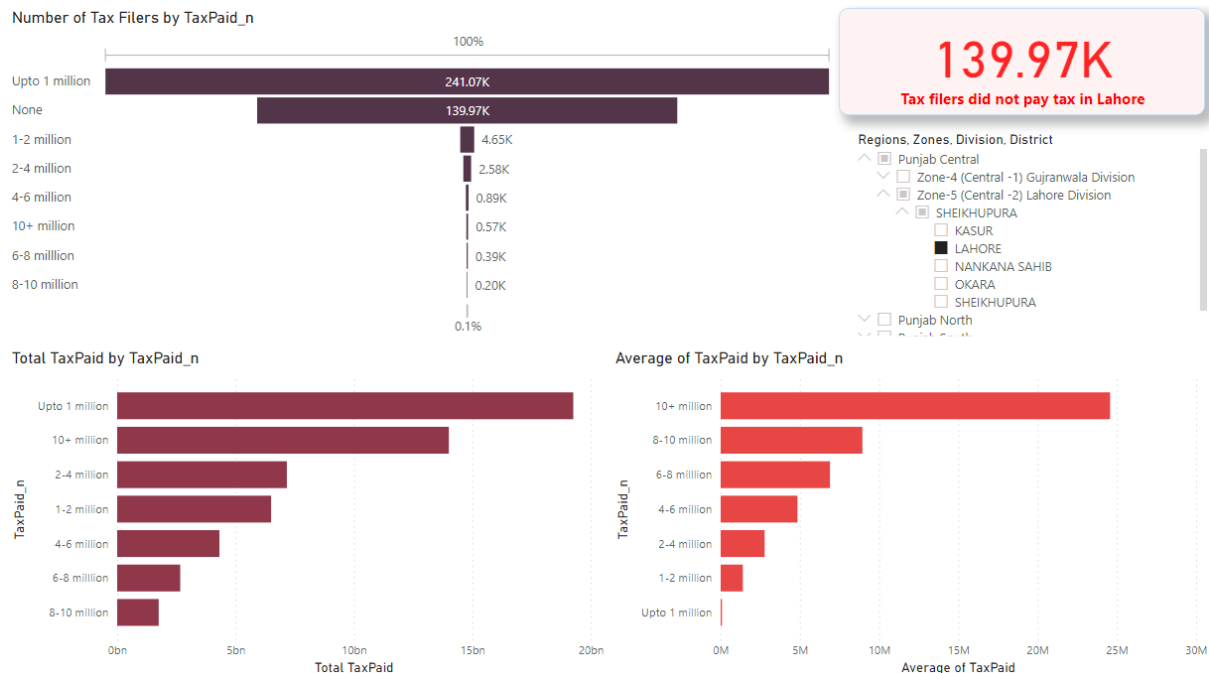


(*'Punjab-Isb_TaxPaid_n'* page from Power BI report)

28.93K tax filers (32%) did not pay their taxes for the year 2018 in Islamabad. It can be estimated based on the average that 5.2 billion rupees tax was not paid in Islamabad.

Upto 1 million tax class has the highest number of tax filers (58.29K) in Islamabad. The highest total tax was paid by upto 1 million tax class (6.2 billion rupees) followed by 10+ million tax class (3.2 billion rupees) despite having just 0.14% (132 tax filers) of the total tax filers in Islamabad.

On average, tax filers who paid 10+ million rupees as tax paid the highest amount of taxes. On average every individual who paid more than 10 million rupees in taxes paid 24.7 million rupees as their annual tax returns in Islamabad. On average, least amount of tax was paid by the upto 1 million tax class (106.6K rupees).



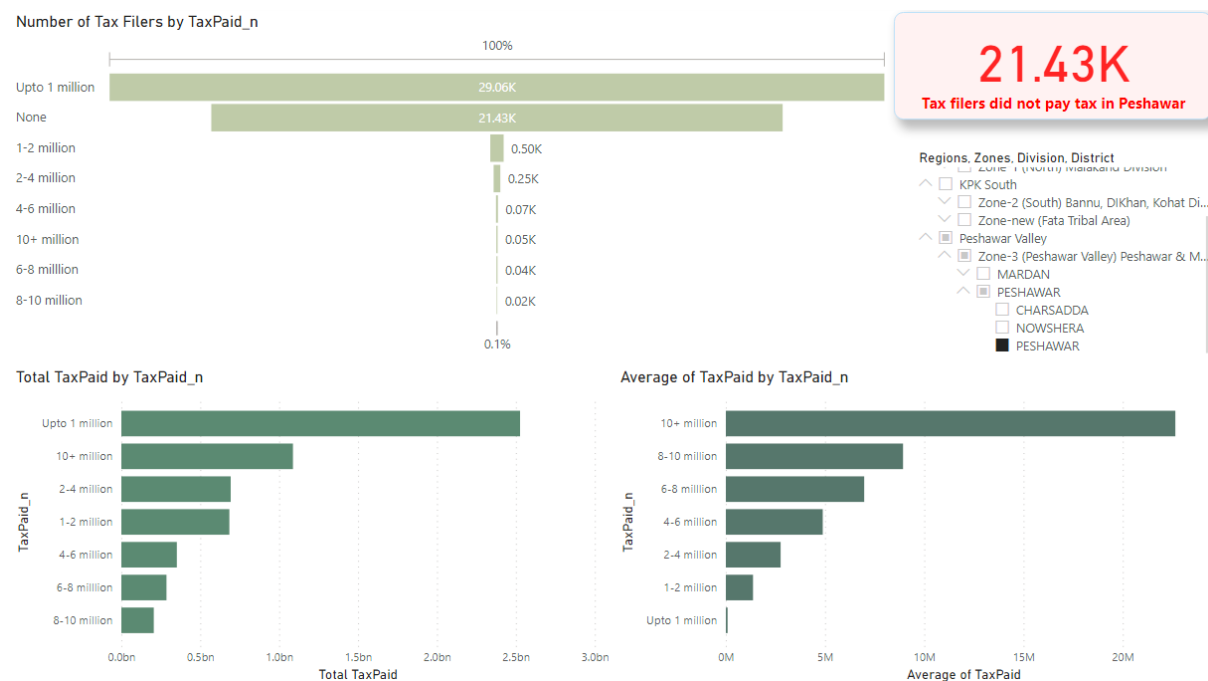
('Punjab-Isb_TaxPaid_n' page from Power BI report)

139.97K tax filers (35.9%) did not pay their taxes for the year 2018 in Lahore. It can be estimated based on the average that 19.9 billion rupees tax was not paid in Lahore.

Upto 1 million tax class has the highest number of tax filers (241.07K) in Lahore. The highest total tax was paid by upto 1 million tax class (19.2 billion rupees) followed by 10+ million tax class (14 billion rupees) despite having just 0.14% (570 tax filers) of the total tax filers in Lahore.

On average, tax filers who paid 10+ million rupees as tax paid the highest amount of taxes. On average, every individual who paid more than 10 million rupees in taxes paid 24.5 million rupees as their annual tax returns in Lahore.

On average, least amount of tax was paid by the upto 1 million tax class (79.8K rupees).

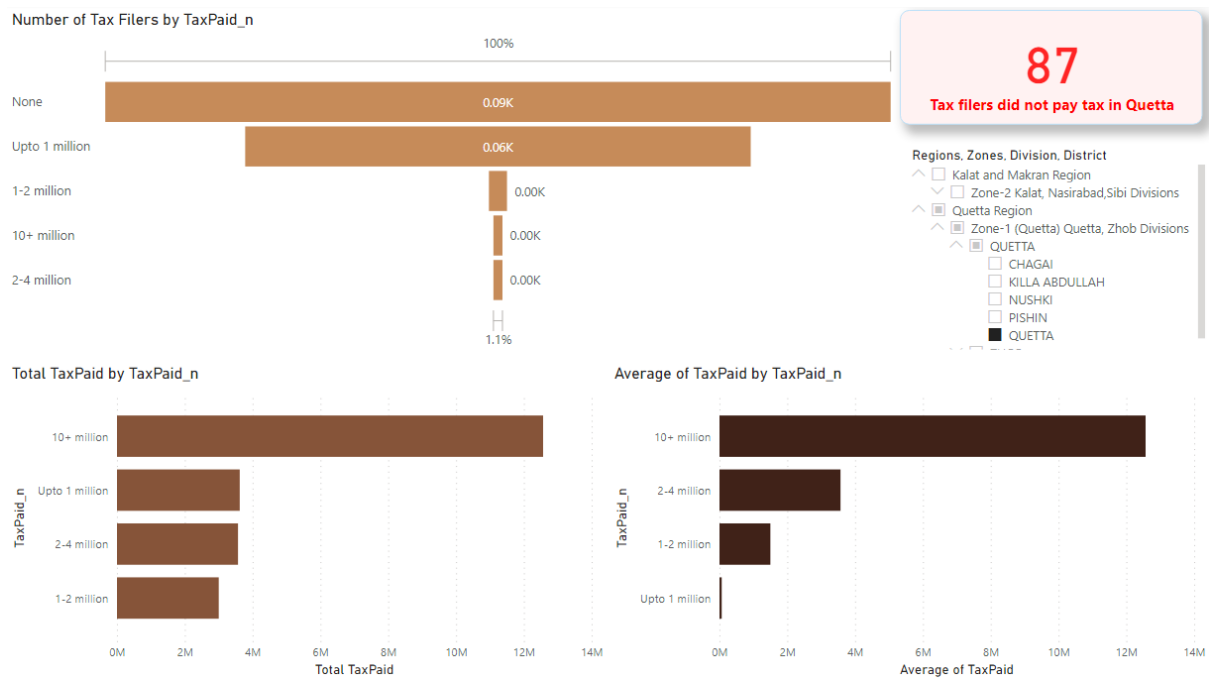


(*'KPK-FATA_TaxPaid_n'* page from Power BI report)

21.43K tax filers (41.6%) did not pay their taxes for the year 2018 in Peshawar. It can be estimated based on the average that 2.4 billion rupees tax was not paid in Peshawar.

Upto 1 million tax class has the highest number of tax filers (29.06K) in Peshawar. The highest total tax was paid by upto 1 million tax class (2.5 billion rupees) followed by 10+ million tax class (1 billion rupees) despite having just 0.09% (48 tax filers) of the total tax filers in Peshawar.

On average, tax filers who paid 10+ million rupees as tax paid the highest amount of taxes. On average, every individual who paid more than 10 million rupees in taxes paid 22.6 million rupees as their annual tax returns in Peshawar. On average, least amount of tax was paid by the upto 1 million tax class (86.9K rupees).



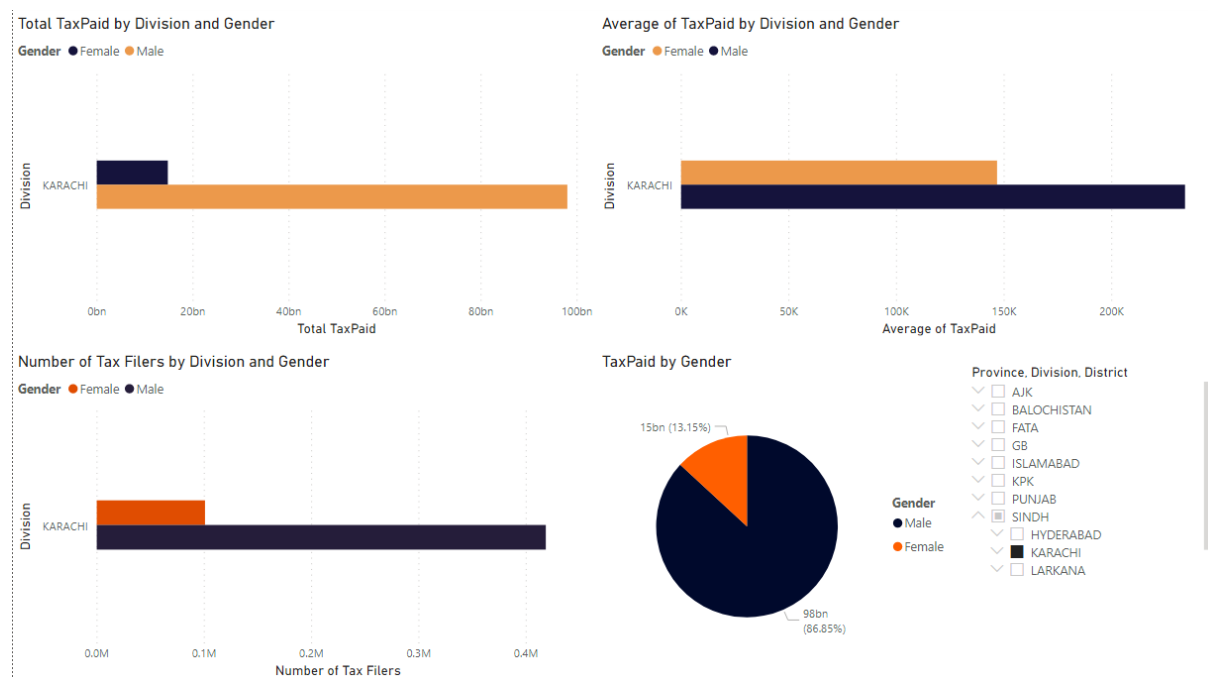
(*'Balochistan_TaxPaid_n'* page from Power BI report)

87 tax filers (59%) did not pay their taxes for the year 2018 in Quetta. It can be estimated based on the average that 13.4 million rupees tax was not paid in Quetta.

The number of tax filers who did not pay tax in Quetta is higher than those who did. Upto 1 million tax class has the highest number of tax filers (56) in Quetta. The highest total tax was paid by 10+ million tax class (12.5 million rupees) despite having just 0.6% (1 tax filer) of the total tax filers in Quetta. The rest of tax classes paid almost the same amount of taxes. This means that a single person in Quetta paid the highest tax of 12.5 million rupees which is more than the tax paid by other 59 people combined. The tax paid by that individual makes up 55.2% of the total tax collected in Quetta.

On average, tax filers who paid 10+ million rupees as tax paid the highest amount of taxes which is 12.5 million rupees and paid by a single person. On average, least amount of tax was paid by the upto 1 million tax class (64.6K rupees).

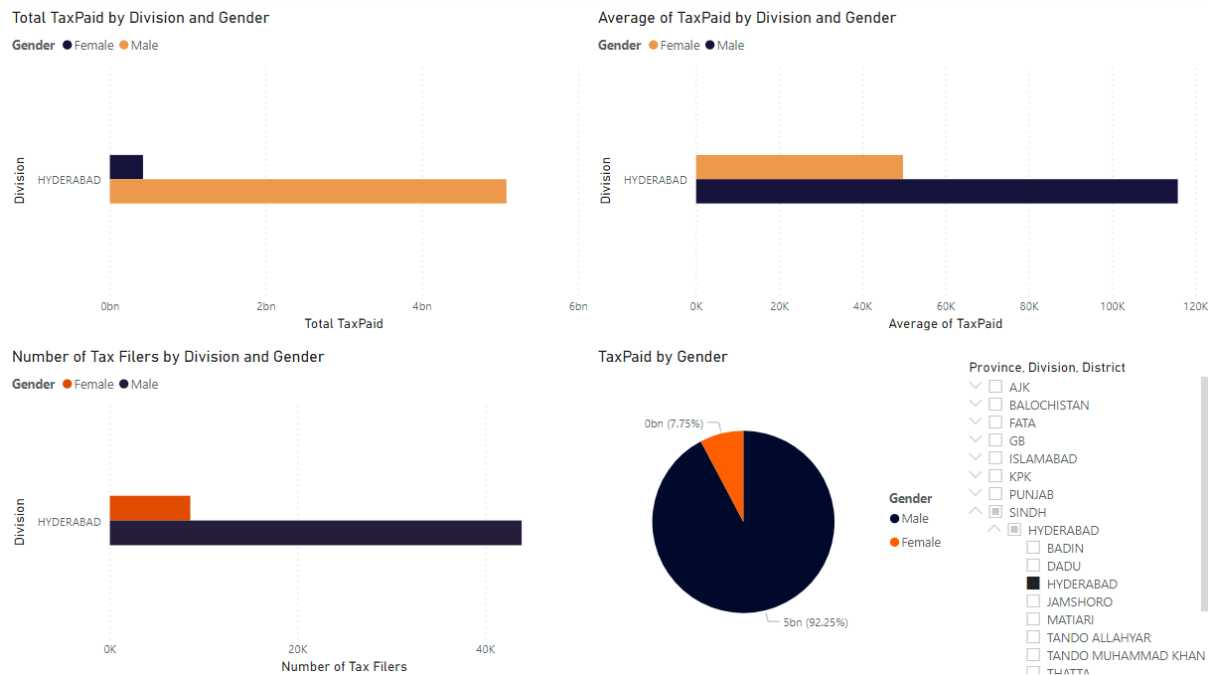
8.9.3 Tax filers and Tax Paid by Gender



(*'Gender' page from Power BI report*)

Among the 519.79K tax filers in Karachi, 418.71K (80.55%) of the tax filers were male and 101.09K (19.45%) were female. Total tax paid by male taxpayers was 98 billion Rupees and 15 billion Rupees was paid by female taxpayers. Which means 86.65% of the total tax paid was by male taxpayers while 13.15% of the total tax was paid by female taxpayers in Karachi.

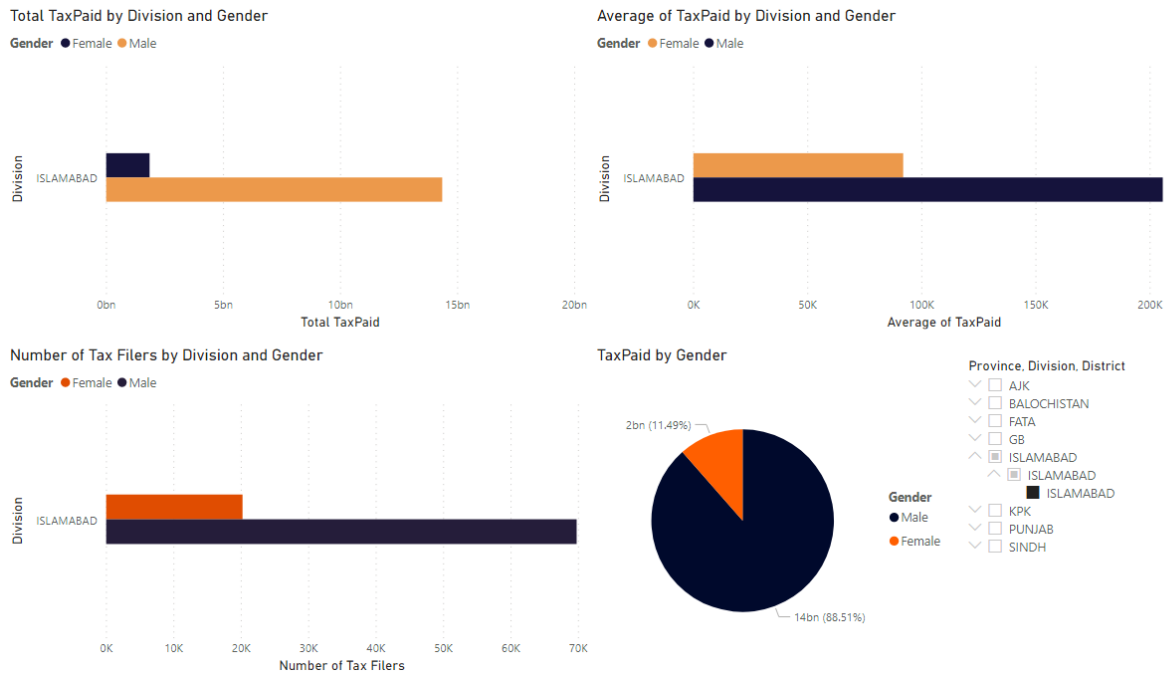
On average every male taxpayer contributed Rs. 234.2K in annual tax returns and on average every female contributed Rs. 146.9K in annual tax returns in Karachi. Male taxpayers paid more taxes than female taxpayers in total and on average in all Karachi districts.



(**'Gender'** page from Power BI report)

Among the 52.48K tax filers in Hyderabad, 43.89K (83.64%) of the tax filers were male and 8.59K (16.36%) were female. Total tax paid by male taxpayers was 5 billion Rupees and 427 million Rupees was paid by female taxpayers. Which means 92.25% of the total tax paid was by male taxpayers while 7.75% of the total tax was paid by female taxpayers in Hyderabad.

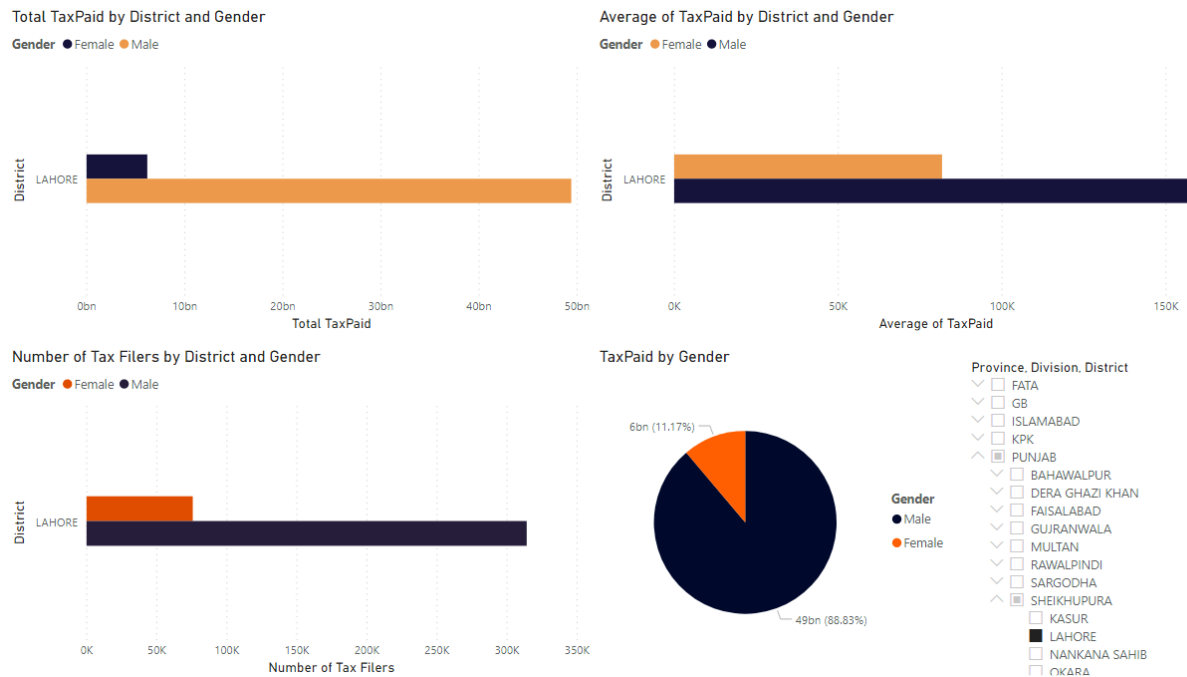
On average every male taxpayer contributed Rs. 115.8K in annual tax returns and on average every female contributed Rs. 49.7K in annual tax returns in Hyderabad.



(**'Gender'** page from Power BI report)

Among the 90.05K tax filers in Islamabad, 69.8K (77.51%) of the tax filers were male and 20.25K (22.49%) were female. Total tax paid by male taxpayers was 14 billion Rupees and 2 billion Rupees was paid by female taxpayers. Which means 88.51% of the total tax paid was by male taxpayers while 11.49% of the total tax was paid by female taxpayers in Islamabad.

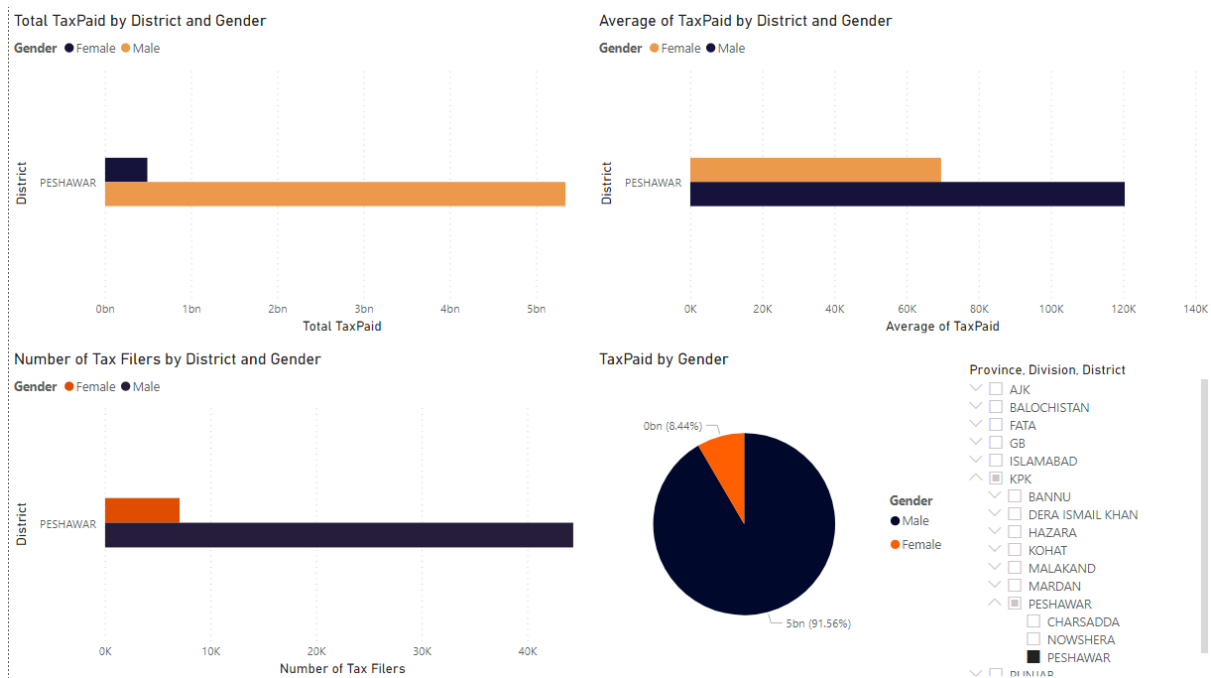
On average every male taxpayer contributed Rs. 205.7K in annual tax returns and on average every female contributed Rs. 92K in annual tax returns in Islamabad.



(‘Gender’ page from Power BI report)

Among the 390.31K tax filers in Lahore, 314.33K (80.53%) of the tax filers were male and 75.99K (19.47%) were female. Total tax paid by male taxpayers was 49 billion Rupees and 6 billion Rupees was paid by female taxpayers. Which means 88.83% of the total tax paid was by male taxpayers while 11.17% of the total tax was paid by female taxpayers in Lahore.

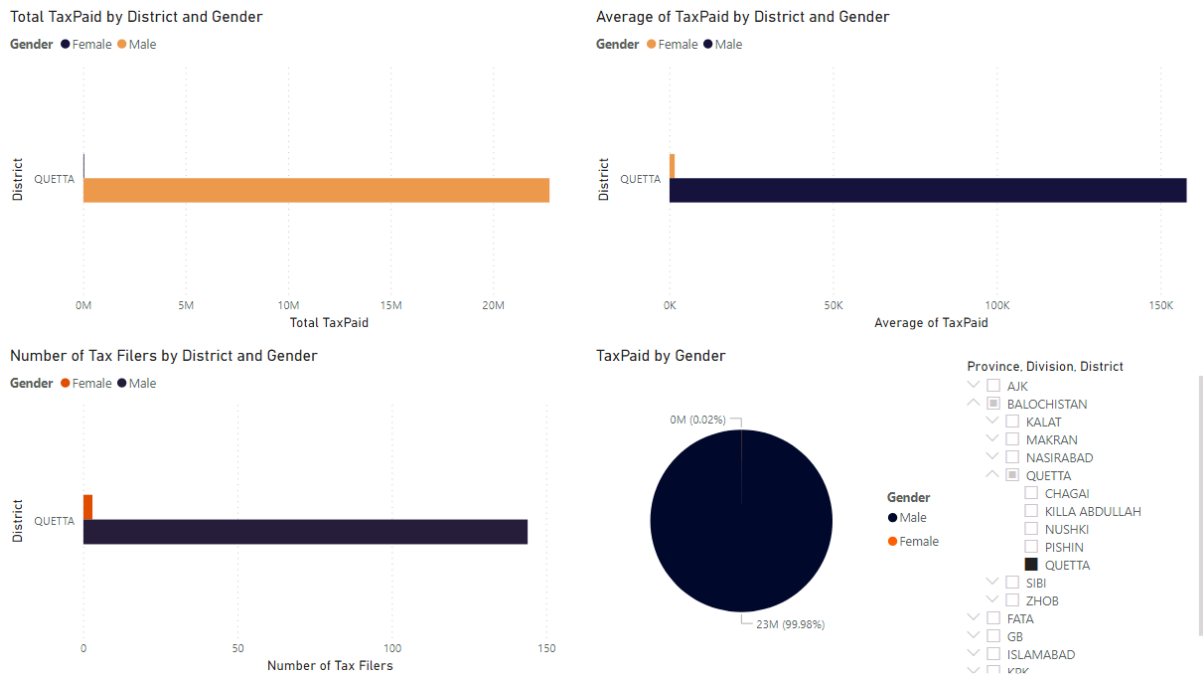
On average every male taxpayer contributed Rs. 157.3K in annual tax returns and on average every female contributed Rs. 81.8K in annual tax returns in Lahore.



(**'Gender'** page from Power BI report)

Among the 51.43K tax filers in Peshawar, 44.35K (86.24%) of the tax filers were male and 7.08K (13.76%) were female. Total tax paid by male taxpayers was 5 billion Rupees and 492 million Rupees was paid by female taxpayers. Which means 91.56% of the total tax paid was by male taxpayers while 8.44% of the total tax was paid by female taxpayers in Peshawar.

On average every male taxpayer contributed Rs. 120.4K in annual tax returns and on average every female contributed Rs. 69.5K in annual tax returns in Peshawar.



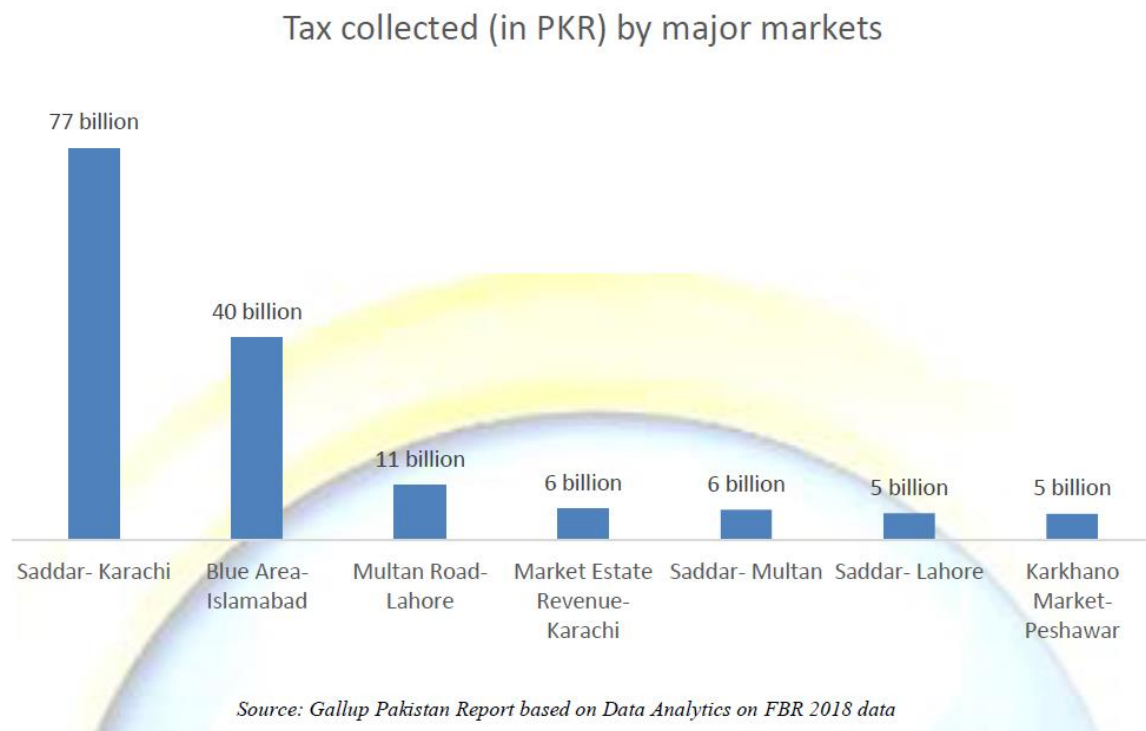
(‘Gender’ page from Power BI report)

Among the 147 tax filers in Quetta, 144 (97.96%) of the tax filers were male and 3 (2.04%) were female. Total tax paid by male taxpayers was 23 million Rupees and 4 853 Rupees was paid by female taxpayers. Which means 99.98% of the total tax paid was by male taxpayers while 0.02% of the total tax was paid by female taxpayers in Quetta.

On average every male taxpayer contributed Rs. 157.9K in annual tax returns and on average every female contributed Rs. 1 617 in annual tax returns in Quetta.

8.10 Which market pays the most income tax in Pakistan?

(The data for markets isn't in tax directory dataset. The analysis shared below is from the 'Gallup Pakistan Data Analytic Series: FBR Tax Directory 2018')

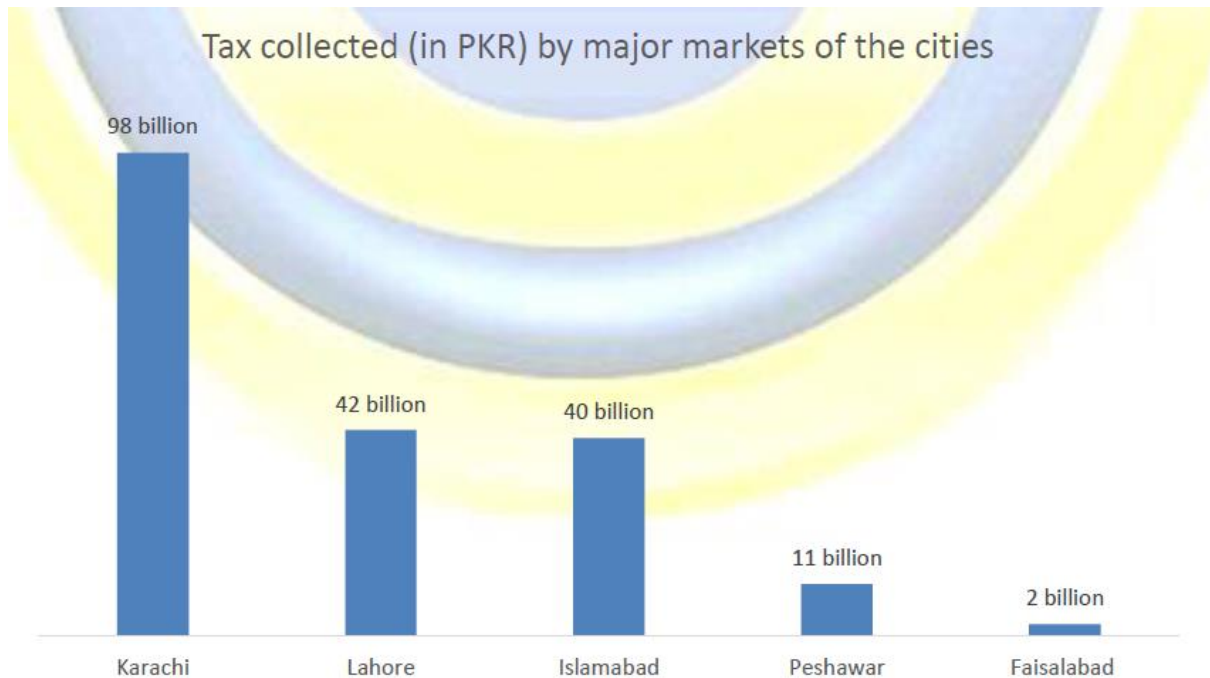


It is of critical importance to note that markets in Karachi pay more tax (PKR. 98 billion) than markets in Lahore and Islamabad combined (PKR 82 billion). These statistics lend merit to the fact that Karachi operates as the economic hub of the country.

FBR data on tax collection shows that out of all the major markets, the highest share of tax was collected from Saddar in Karachi. This is followed, although with a huge margin, by Blue Area in Islamabad. Multan Road in Lahore and Market Estate Avenue in Karachi are also among the highest tax-paying markets. Out of all major markets, the highest number of tax filers was also found in Saddar Karachi (72,339 filers), followed by Saddar Multan with 38,236 filers and Saddar Lahore with 19,521 filers.

Which city collects the most tax from its markets? FBR data reveals that the major markets of Karachi make up the largest chunk of taxpayers which contribute to the total tax collected in Pakistan. Markets in Karachi paid more than a staggering 98 billion rupees in income tax in 2018. Putting things in

perspective, Karachi markets paid more than twice the amount of income tax paid by markets in Lahore. This comes as a surprise considering that Lahore also has an abundance of huge retail centers.



The scale of the economic activity in Karachi can be assessed by the fact that two markets in Karachi namely Saddar market and Jodia Bazaar together pay 80.2 billion rupees in tax whereas, astoundingly, all the major markets in Lahore and Islamabad combined pay around 82 billion rupees. These disproportionate numbers do not reflect the state of development in the respective cities.

9. Reference

Federal Board of Revenue. (2020). *Tax Directory for Tax Year 2018*. Retrieved May 25, 2022, from FBR:

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10. Appendix

Project google drive link:

https://drive.google.com/drive/folders/1lOZhoFxFxWxjl8o9Fy_G7hA_KA5Hi9KrG?usp=sharing

About the Power BI Report

The report has a total of 33 pages. First page is the cover page. Any chart on pages 2 to 9 that shows a KPI against locations can be drilled down and up. These charts by default show value against 'Province'. Map on page 4 by default show value against 'District'. On page 7, top map is for 'District' and bottom one is for 'Division'. These charts and maps can be drilled down to Division (level 2) and District (level 3) and back up (Province is level 1).

Any chart on pages 10 to 33 that shows a KPI against locations can be drilled down and up. These charts by default show value against 'Regions' (level 1). They can be drilled down to Zones (level 2), Division (level 3), and District (level 4) and back up. Pages have been named based on the provinces they are showing data about. So, only those zones, divisions and districts will appear on the charts that are in that province.

Pages 2 to 9 have a slicer for the location hierarchy (except tree maps):

- Province
- Division
- District

Pages 10 to 33 have a slicer for the location hierarchy:

- Regions
- Zones
- Division
- District

Only those zones, divisions and districts will appear on the slicer that are in that province.

Maps also show bubbles that are not in Pakistan. This may be because the Bing search engine could not identify the location and marked it on the map where it wasn't supposed to be.

Sharable link for published Power BI report (only accessible with IBA email):

https://app.powerbi.com/links/Dx9WwqKzaD?ctid=fec3b916-01c1-4987-a646-e193432b9eaa&pbi_source=linkShare

If published report not accessible, then request for access with specified email.

Sharable link for this document (in google docs):

https://docs.google.com/document/d/1uQbvvdGDvT300Bd6xBU_3XuM7o1zZF9w_trgkyrgJuc/edit?usp=sharing
