

A thick black L-shaped frame is positioned around the text, with one corner at the top-left and the other at the bottom-right.

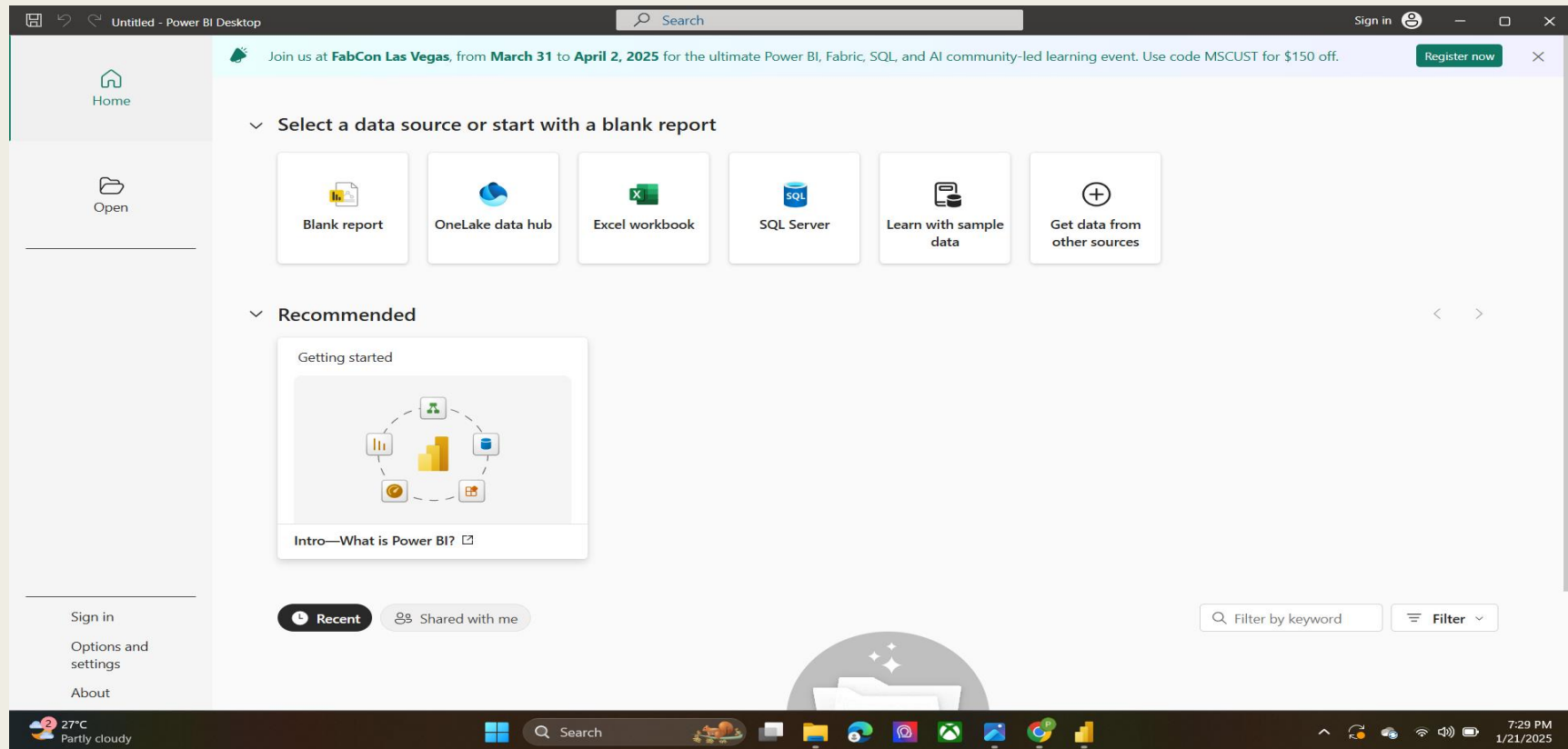
EXHAUSTIVE ANALYSIS OF INDIAN AGRICULTURE SECTOR USING POWER BI

INTRODUCTION

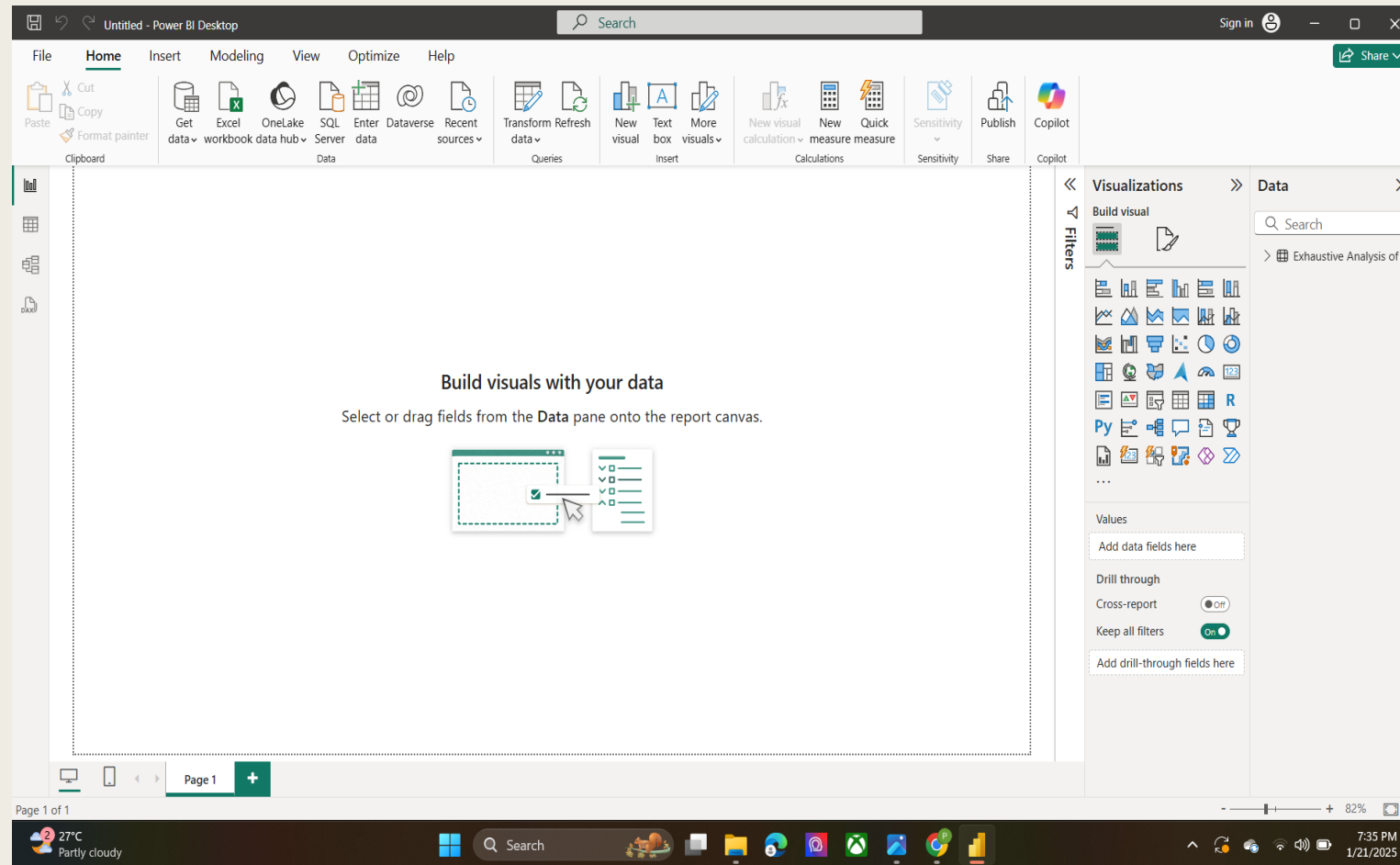
- Power BI is a **business intelligence** and **data visualization** tool developed by Microsoft.
- In Microsoft Power BI there are three view :
 - Report View:** Visualize the data using charts and graphs.
 - Table View:** Examine raw data in tabular format.
 - Model View:** Establish relationships among data for analysis.
- Then we have to know the three terms **ETL (Extract-Transform-Load)**
- **Extract:** Pull data from a data source, such as an Excel file.
- **Transform:** Process and clean the extracted data to ensure consistency, accuracy, and usability.
- **Load:** Save the transformed data into a target format, such as a CSV or database file, for analysis.

- Firstly install the Microsoft Power BI.

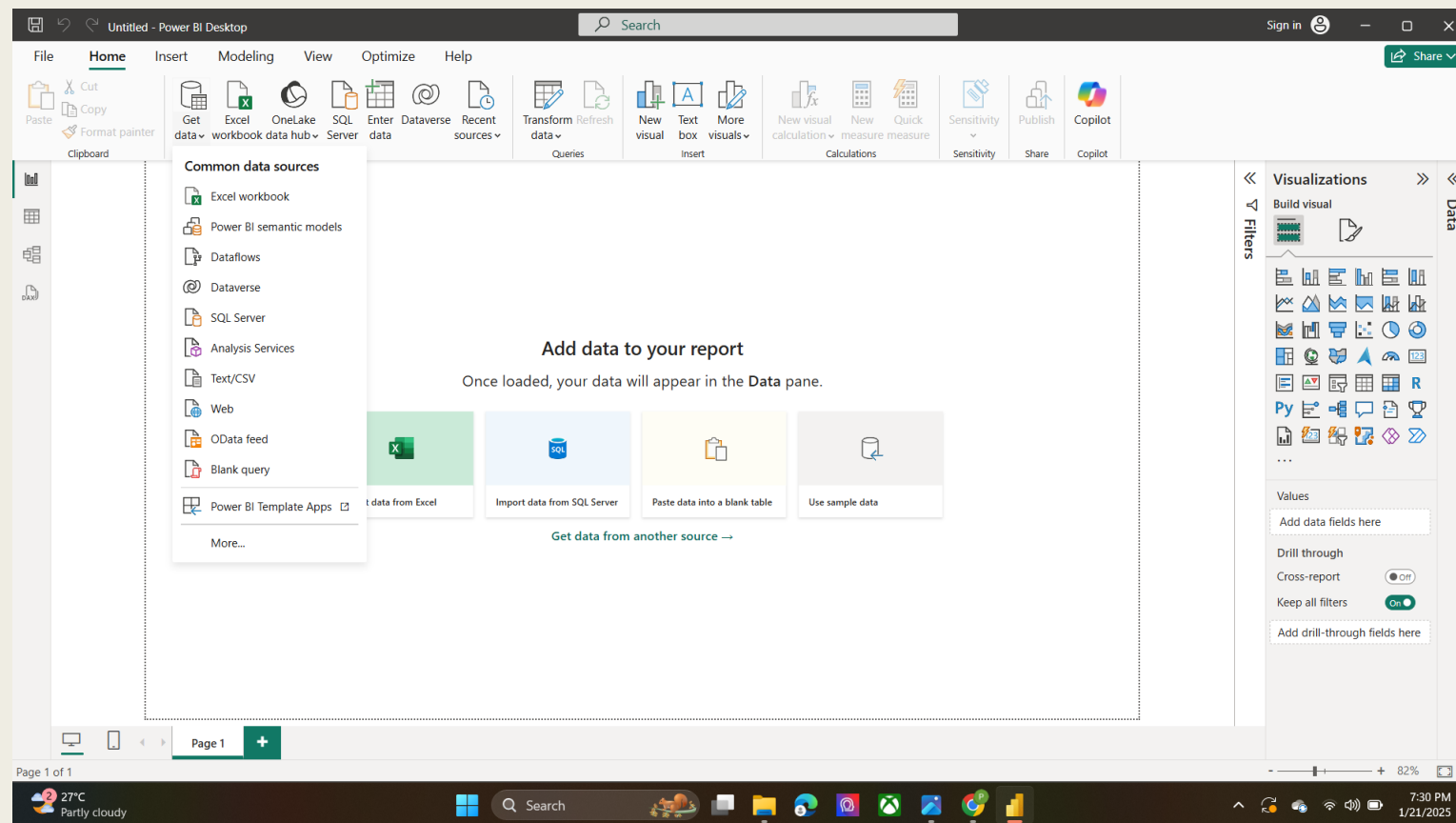
Select the data source or start with a blank report.



Then the Power BI Desktop will be display as below.



We have to import the any data format (cleaned or not cleaned data). We can click on Get data from the top of the desktop. In that we choose what type of your data format is.



Then the data can be imported.

Exhaustive Analysis of Indian Agriculture.csv.csv

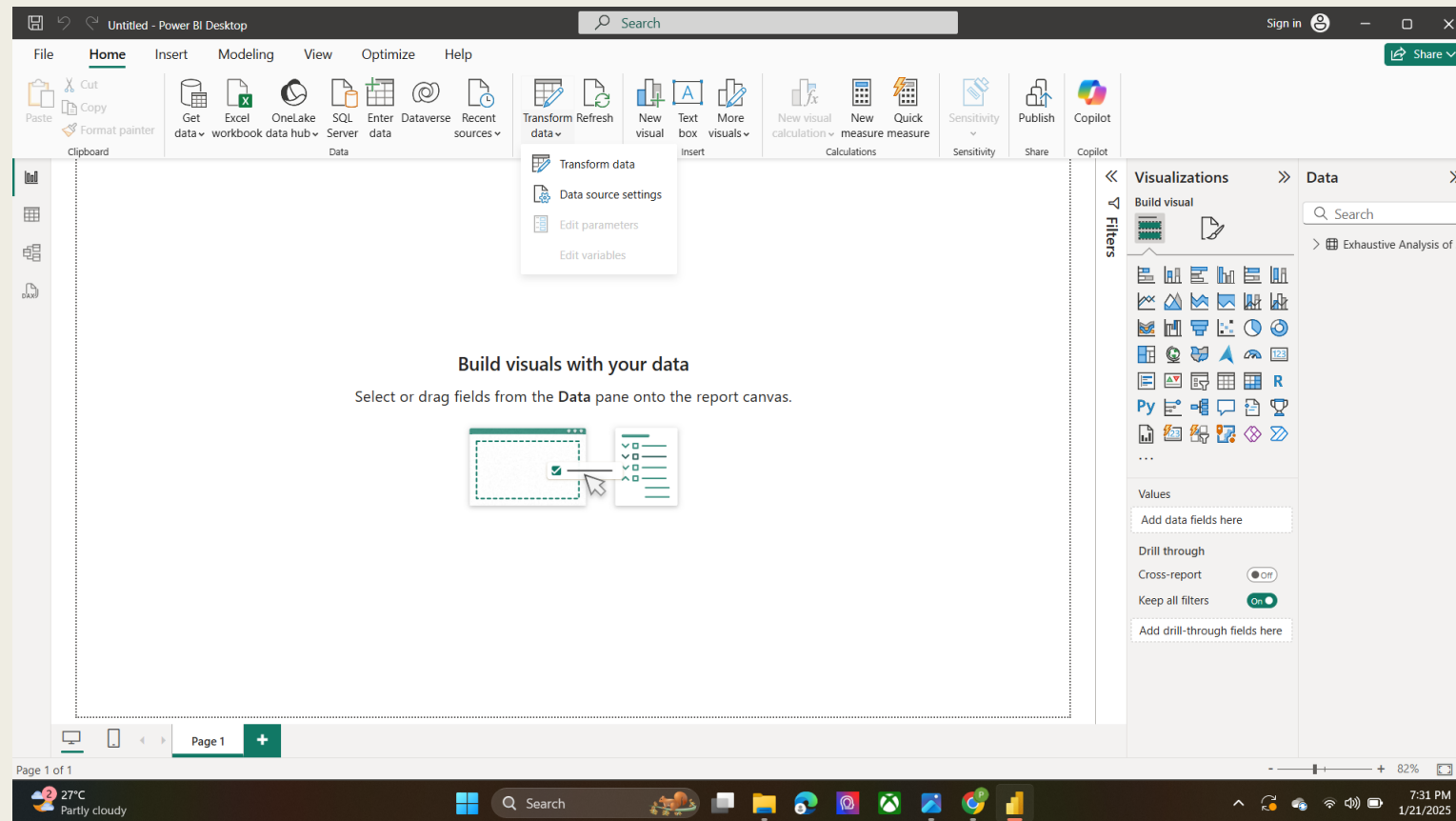
File Origin: 1252: Western European (Windows) | Delimiter: Comma | Data Type Detection: Based on first 200 rows

RowID	State_Name	District_Name	Crop_Year	Season	Crop	Area	Production	_1	_2
0	Bihar	NALANDA	2005	Rabi	Wheat	81934	160425		
1	Assam	KARBI ANGLONG	2019	Whole Year	Onion	257	514		
2	Gujarat	ANAND	2020	Summer	Maize	100	100	Total production	A
3	Karnataka	UTTAR KANNAD	2013	Rabi	Groundnut	2872	4572	45168275000	8
4	Uttar Pradesh	JAUHPUR	2016	Rabi	Onion	110	1290		
5	Assam	MARIGAON	2014	Rabi	Rapeseed & Mustard	6535	2719		
6	Odisha	SONEPUR	2006	Winter	Rapeseed & Mustard	91	6		
7	Rajasthan	DHOLPUR	2017	Whole Year	Garlic	1	1		
8	Karnataka	BELGAUM	2018	Whole Year	Coconut	336	3212		
9	Bihar	MUNGER	2020	Summer	Moong(Green Gram)	125	78		
10	Chhattisgarh	JANIGIR-CHAMPA	2013	Kharif	Other Kharif pulses	223	107		
11	Assam	KARBI ANGLONG	2019	Rabi	Rapeseed & Mustard	19337	8652		
12	Uttar Pradesh	SHRAVASTI	2005	Kharif	Groundnut	72	58		
13	Gujarat	PATAN	2019	Kharif	Moong(Green Gram)	9100	3300		
14	Tamil Nadu	KARUR	2008	Whole Year	Sweet potato	20	309		
15	Uttar Pradesh	KASGANJ	2019	Rabi	Tobacco	5247	28554		
16	Haryana	MAHENDRAGARH	2006	Rabi	Wheat	45074	186000		
17	Assam	DHEMAJI	2017	Whole Year	Turmeric	321	211		
18	Assam	BAKSA	2015	Kharif	Small millets	284	127		
19	Kerala	PATHANAMTHITTA	2008	Whole Year	Sugarcane	224	10950		

Extract Table Using Examples | Load | Transform Data | Cancel

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Some data are not cleaned so we have to clean the data. By clicking on transform data icon from top of the desktop. Then click transform data.



We need to select the unwanted columns from our dataset.
In this we need to select the columns and top of the desktop we see the remove columns.

The screenshot shows the Power Query Editor interface. The ribbon at the top includes tabs for File, Home, Transform, Add Column, View, Tools, and Help. The 'Transform' tab is active, and the 'Remove Columns' button is highlighted with a red box. Below the ribbon, the main area displays a table with the following columns: RowID, State_Name, District_Name, Crop_Year, Season, Crop, and Area. The table contains 27 rows of data. The right sidebar shows the 'Query Settings' panel with the 'Properties' section expanded, showing the query name 'Exhaustive Analysis of Indian Agriculture'. The 'Applied Steps' section shows a list of steps: Source, Promoted Headers, and Changed Type.

RowID	State_Name	District_Name	Crop_Year	Season	Crop	Area
0	Bihar	NALANDA	2005	Rabi	Wheat	
1	Assam	KARBI ANGLONG	2019	Whole Year	Onion	
2	Gujarat	ANAND	2020	Summer	Maize	
3	Karnataka	UTTAR KANNAD	2013	Rabi	Groundnut	
4	Uttar Pradesh	JAUNPUR	2016	Rabi	Onion	
5	Assam	MARIGAON	2014	Rabi	Rapeseed & Mustard	
6	Odisha	SONEPUR	2006	Winter	Rapeseed & Mustard	
7	Rajasthan	DHOLPUR	2017	Whole Year	Garlic	
8	Karnataka	BELGAUM	2018	Whole Year	Coconut	
9	Bihar	MUNGER	2020	Summer	Moong(Green Gram)	
10	Chhattisgarh	JANJIR-CHAMPA	2013	Kharif	Other Kharif pulses	
11	Assam	KARBI ANGLONG	2019	Rabi	Rapeseed & Mustard	
12	Uttar Pradesh	SHRAVASTI	2005	Kharif	Groundnut	
13	Gujarat	PATAN	2019	Kharif	Moong(Green Gram)	
14	Tamil Nadu	KARUR	2008	Whole Year	Sweet potato	
15	Uttar Pradesh	KASGANJ	2019	Rabi	Tobacco	
16	Haryana	MAHENDRAGARH	2006	Rabi	Wheat	
17	Assam	DHEMAJI	2017	Whole Year	Turmeric	
18	Assam	BAKSA	2015	Kharif	Small millets	
19	Kerala	PATHANAMTHITTA	2008	Whole Year	Sugarcane	
20	Chhattisgarh	JANJIR-CHAMPA	2018	Rabi	Linseed	
21	Chhattisgarh	DHAMTARI	2020	Whole Year	Banana	
22	Karnataka	BELLARY	2016	Rabi	Maize	
23	Assam	TINSUKIA	2020	Autumn	Rice	
24	Uttar Pradesh	RAE BARELI	2016	Kharif	Maize	
25	Karnataka	KOLAR	2020	Rabi	Cowpea(Lobia)	
26	Madhya Pradesh	NEEMUCH	2019	Whole Year	Sesamum	

If we want to undo the deleted columns. By clicking on removed columns from right hand side of the table.

The screenshot shows the Power Query Editor interface. The main table has columns: Area, Production, and three removed columns (AR_c_1, AR_c_2, AR_c_3). The 'Removed Columns' step is highlighted in the 'APPLIED STEPS' pane on the right. An arrow points from the table to the 'Removed Columns' step.

Query: = Table.RemoveColumns(#"Changed Type",{"RowID"})

	Area	Production	AR_c_1	AR_c_2	AR_c_3
1		81934	160425		
2		257	514		
3		100	100	Total production	Average
4		2872	4572	45168275000	89488.975
5		110	1290		
6	rd	6535	2719		
7	rd	91	6		
8		1	1		
9		336	3212		
10	m)	125	78		
11	s	223	107		
12	rd	19337	8652		
13		72	58		
14	m)	9100	3300		
15		20	309		
16		5247	28554		
17		45074	186000		
18		321	211		
19		284	127		
20		224	10950		
21		2497	658		
22		46	1520		
23		3418	7487		
24		5806	7964		
25		11	13		
26		14	5		
27		780	456		

11 COLUMNS, 999+ ROWS Column profiling based on top 1000 rows

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We need to know how many empty value are they in our dataset. By clicking view tab from the top and select the column quality it will display. It will also show how many error values.

The screenshot displays the Microsoft Power Query Editor window. The 'View' tab is selected in the top ribbon, and the 'Column quality' checkbox is checked. The main data table is visible, showing columns for State_Name, District_Name, Crop_Year, Season, Crop, Area, and Production. The right-hand pane shows the 'Query Settings' for 'Exhaustive Analysis of Indian Agriculture', including the 'APPLIED STEPS' list which contains 'Removed Columns'.

7 COLUMNS, 999+ ROWS Column profiling based on top 1000 rows

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Then it will display as below.

Untitled - Power Query Editor

File Home Transform Add Column View Tools Help

Query Settings Layout Data Preview Columns Parameters Advanced Dependencies

Queries [1] Exhaustive Analysis of In...

fx = Table.RemoveColumns(#"Changed Type",{ "RowID", "", "_1", "_2", "_3" })

	State_Name	District_Name	Crop_Year	Season	Crop	Area	Production
1	Bihar	NALANDA	2005	Rabi	Wheat	81934	
2	Assam	KARBI ANGLONG	2019	Whole Year	Onion	257	
3	Gujarat	ANAND	2020	Summer	Maize	100	
4	Karnataka	UTTAR KANNAD	2013	Rabi	Groundnut	2872	
5	Uttar Pradesh	JAUNPUR	2016	Rabi	Onion	110	
6	Assam	MARIGAON	2014	Rabi	Rapeseed & Mustard	6535	
7	Odisha	SONEPUR	2006	Winter	Rapeseed & Mustard	91	
8	Rajasthan	DHOLPUR	2017	Whole Year	Garlic	1	
9	Karnataka	BELGAUM	2018	Whole Year	Coconut	336	
10	Bihar	MUNGER	2020	Summer	Moong(Green Gram)	125	
11	Chhattisgarh	JANJIGIR-CHAMPA	2013	Kharif	Other Kharif pulses	223	
12	Assam	KARBI ANGLONG	2019	Rabi	Rapeseed & Mustard	19337	
13	Uttar Pradesh	SHRAVASTI	2005	Kharif	Groundnut	72	
14	Gujarat	PATAN	2019	Kharif	Moong(Green Gram)	9100	
15	Tamil Nadu	KARUR	2008	Whole Year	Sweet potato	20	
16	Uttar Pradesh	KASGANJ	2019	Rabi	Tobacco	5247	
17	Haryana	MAHENDRAGARH	2006	Rabi	Wheat	45074	
18	Assam	DHEMAJI	2017	Whole Year	Turmeric	321	
19	Assam	BAKSA	2015	Kharif	Small millets	284	
20	Kerala	PATHANAMTHITTA	2008	Whole Year	Sugarcane	224	
21	Chhattisgarh	JANJIGIR-CHAMPA	2018	Rabi	Linseed	2497	
22	Chhattisgarh	DHAMTARI	2020	Whole Year	Banana	46	
23	Karnataka	BELLARY	2016	Rabi	Maize	3418	
24	Assam	TINSUKIA	2020	Autumn	Rice	5806	
25	Uttar Pradesh	BALRAMPUR	2012	Kharif	Maize	11	

7 COLUMNS, 999+ ROWS Column profiling based on top 1000 rows

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Query Settings

PROPERTIES

Name Exhaustive Analysis of Indian Agriculture

APPLIED STEPS

Source

Promoted Headers

Changed Type

Removed Columns

Then finally apply and close the dataset.

The screenshot displays the Microsoft Power Query Editor interface. The main area shows a data table with the following columns: State_Name, District_Name, Crop_Year, Season, Crop, Area, and Production. The table contains 25 rows of data. A dropdown menu is open on the left, showing options: Close & Apply, New Source, Recent Sources, Enter Data, Data source settings, Manage Parameters, Refresh Preview, Properties, Advanced Editor, Manage, Choose Columns, Remove Columns, Keep Rows, Remove Rows, Split Column, Group By, Data Type: Decimal Number, Use First Row as Headers, Replace Values, Merge Queries, Append Queries, Combine Files, Text Analytics, Vision, and Azure Machine Learning. The right sidebar shows the 'Query Settings' pane with 'PROPERTIES' and 'APPLIED STEPS'. The 'APPLIED STEPS' list includes 'Source', 'Promoted Headers', 'Changed Type', and 'Removed Columns'. The status bar at the bottom indicates '7 COLUMNS, 999+ ROWS' and 'Column profiling based on top 1000 rows'. The system tray at the bottom shows the date and time as 7:34 PM on 1/21/2025.

	State_Name	District_Name	Crop_Year	Season	Crop	Area	Production
1	Bihar	NALANDA	2005	Rabi	Wheat	81934	
2	Assam	KARBI ANGLONG	2019	Whole Year	Onion	257	
3	Gujarat	ANAND	2020	Summer	Maize	100	
4	Karnataka	UTTAR KANNAD	2013	Rabi	Groundnut	2872	
5	Uttar Pradesh	JAUNPUR	2016	Rabi	Onion	110	
6	Assam	MARIGAON	2014	Rabi	Rapeseed & Mustard	6535	
7	Odisha	SONEPUR	2006	Winter	Rapeseed & Mustard	91	
8	Rajasthan	DHOLPUR	2017	Whole Year	Garlic	1	
9	Karnataka	BELGAUM	2018	Whole Year	Coconut	336	
10	Bihar	MUNGER	2020	Summer	Moong(Green Gram)	125	
11	Chhattisgarh	JANJIGIR-CHAMPA	2013	Kharif	Other Kharif pulses	223	
12	Assam	KARBI ANGLONG	2019	Rabi	Rapeseed & Mustard	19337	
13	Uttar Pradesh	SHRAVASTI	2005	Kharif	Groundnut	72	
14	Gujarat	PATAN	2019	Kharif	Moong(Green Gram)	9100	
15	Tamil Nadu	KARUR	2008	Whole Year	Sweet potato	20	
16	Uttar Pradesh	KASGANJ	2019	Rabi	Tobacco	5247	
17	Haryana	MAHENDRAGARH	2006	Rabi	Wheat	45074	
18	Assam	DHEMAJI	2017	Whole Year	Turmeric	321	
19	Assam	BAKSA	2015	Kharif	Small millets	284	
20	Kerala	PATHANAMTHITTA	2008	Whole Year	Sugarcane	224	
21	Chhattisgarh	JANJIGIR-CHAMPA	2018	Rabi	Linseed	2497	
22	Chhattisgarh	DHAMTARI	2020	Whole Year	Banana	46	
23	Karnataka	BELLARY	2016	Rabi	Maize	3418	
24	Assam	TINSUKIA	2020	Autumn	Rice	5806	
25	Uttar Pradesh	BALGHAT	2012	Kharif	Maize	11	



THANKYOU

