General Sir John Kotelawala Defence University

Faculty of Management, Social Sciences and Humanities
Department of Languages

BSc in Applied Data Science Communication
Intake 40

LDSL Renuja - D/ADC/23/0004

Y.M.L Kavindya - D/ADC/23/0042

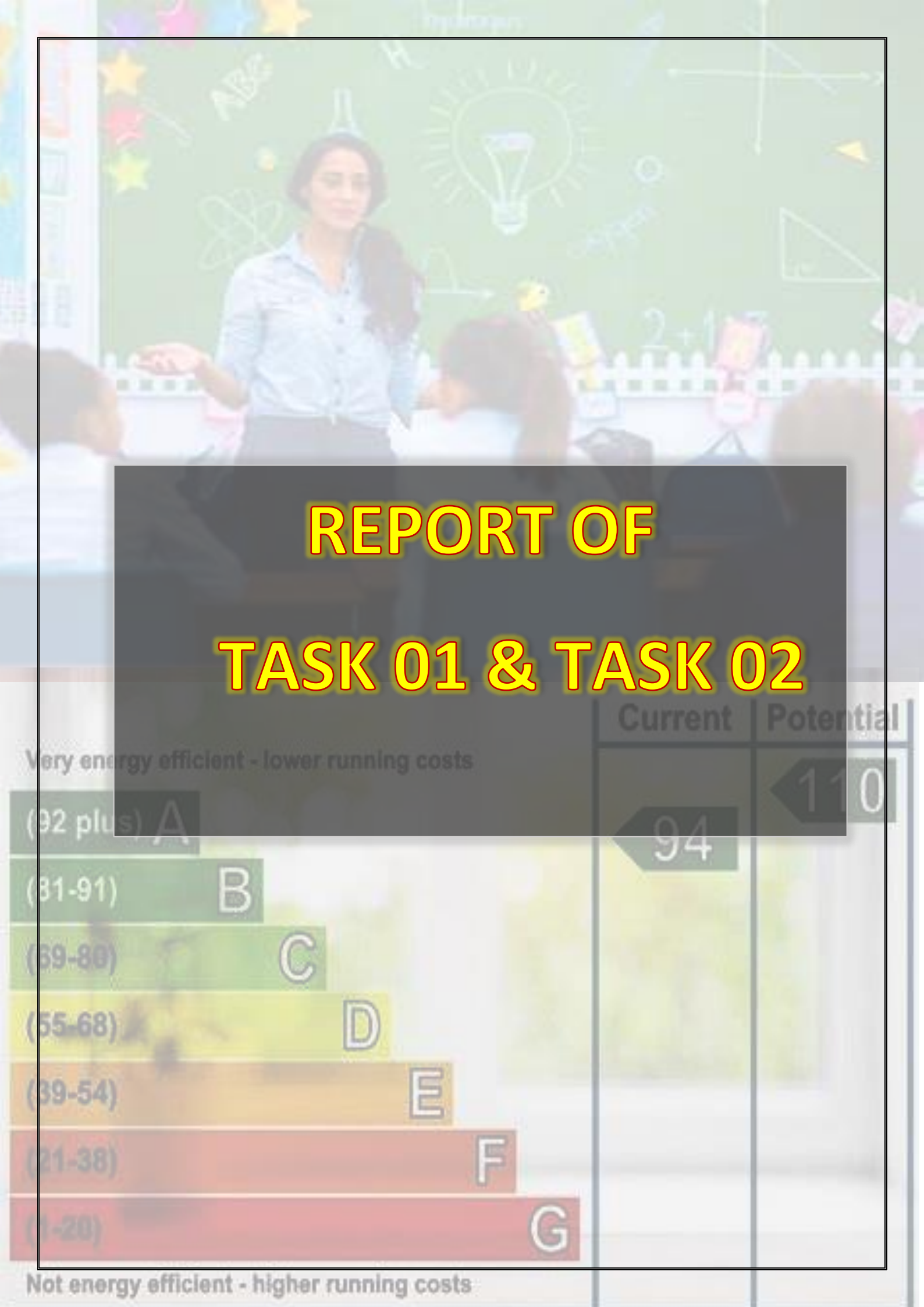
LAP Thasanya - D/ADC/23/0048

PGD Rodrigo - D/ADC/23/0033

Year 2: Semester 4

Advanced SQL and Cloud Databases .

Assignment 2



REPORT OF

TASK 01 & TASK 02

CONTENT

TASK 01 : Power BI Report design

TASK 02 : - Power BI Dashboard design

TASK 01 : REPORT OF POWER BI REPORT DESIGN.

1.1 INTRODUCTION

1.1.A Project Overview:

To examine child poverty in lower-income nations, the Child Well-Being Monitor is a useful tool. It converts unprocessed data into interactive visualizations and paginated reports using Power BI. These studies offer information on a range of topics related to children's well-being, including housing, education, and health. In order to promote child welfare, the Monitor seeks to assist international organizations, NGOs, and legislators in making data-driven decisions.

1.1.B Purpose of the Report:

This report aims to bring insights into child poverty through the creation of visual reports with Power BI and Power BI Report Builder. In two chosen nations, these reports will examine vital variables such household living conditions, education, and nutrition. Through an examination of the correlations among factors such as parental education, child health, and household income, the reports seek to assist stakeholders in creating successful interventions that enhance the well-being of children. Together with presenting the statistics, the report also provides intelligible and useful insight.

1.1.C Dataset

The Young Lives project, a longitudinal study monitoring childhood poverty in Ethiopia, India, Peru, and Vietnam, provided the dataset for this project. The collection includes information from five survey rounds carried out between 2002 and 2016 that collected information on the age, health, education, living circumstances, and social surroundings of children. Demographics, health and nutrition, education, economic circumstances, and geographic environment are all covered in the dataset. This set of information enables cross-national comparisons and offers a thorough understanding of childhood poverty.

Here is the link for the metadata and dataset:

https://beta.ukdataservice.ac.uk/datacatalogue/series/series?id=2000060#!/access

1.1.D Explanation and preparation of Datasets

The two datasets, ***India Constructed*** and ***Ethiopia Constructed***, contain detailed information about child poverty, well-being, and household conditions across multiple survey rounds. Below is an explanation of both datasets and their key columns.

- **India Constructed Dataset**

This dataset contains information from the Young Lives survey conducted in India. It tracks various dimensions of child well-being, health, and household conditions over time.

Key Columns:

- `childid`: Unique identifier for each child in the dataset.

- `yc`: Young Lives cohort identifier (indicating which cohort the child belongs to).

- `round`: Survey round (ranging from 1 to 5).

- `panel12345`: Indicator for which panel the child belongs to across the rounds.

- `deceased`: Indicates if the child has passed away.

- `dint`: Date of the interview (survey date).

- `clustid`, `commid`: Cluster and community identifiers for geographical grouping.

- `region`: Region code where the child lives.

- `chsex`: Child's gender.

- `chweight`, `chheight`, `bmi`: Child's weight, height, and Body Mass Index.

- `underweight`, `stunting`, `thinness`: Indicators of malnutrition.

- `momedu`, `dadedu`: Mother's and father's education levels.

- `hhsize`: Household size (number of people living in the house).

- `urban_rural`: Indicates if the household is in an urban or rural area.

- `wi_new`, `hq_new`, `sv_new`: Indicators for wealth, housing quality, and social vulnerability.

- `foodsec`: Food security status of the household.

These variables provide insights into the socio-economic status of households and children's health and educational outcomes in India.

- **Ethiopia Constructed Dataset**

The Ethiopia Constructed dataset contains similar variables as the India dataset, focusing on the well-being and conditions of children in Ethiopia.

Key Columns:

- `childid`: Unique identifier for each child in the dataset.

- `round`: The round of the survey conducted (1 to 5).

- `region`: Code for the region where the child resides.

- `chweight`, `chheight`, `bmi`: Child's health metrics (weight, height, and BMI).

- `underweight`, `stunting`, `thinness`: Indicators of malnutrition, which are key in analyzing child poverty.

- `momedu`, `dadedu`: Mother's and father's education levels.

- `hhsize`: Household size, reflecting the family structure and economic burden.

- `foodsec`: Household food security, important for understanding poverty and well-being.

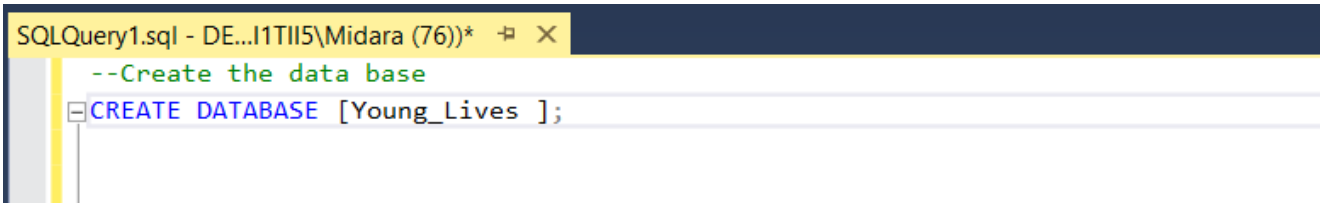
- `wi_new`, `hq_new`, `sv_new`: Similar wealth, housing, and social vulnerability indicators as in the India dataset.

Both datasets offer a detailed view of children’s living conditions, education, health, and household economic status, which are crucial for understanding and analyzing child poverty

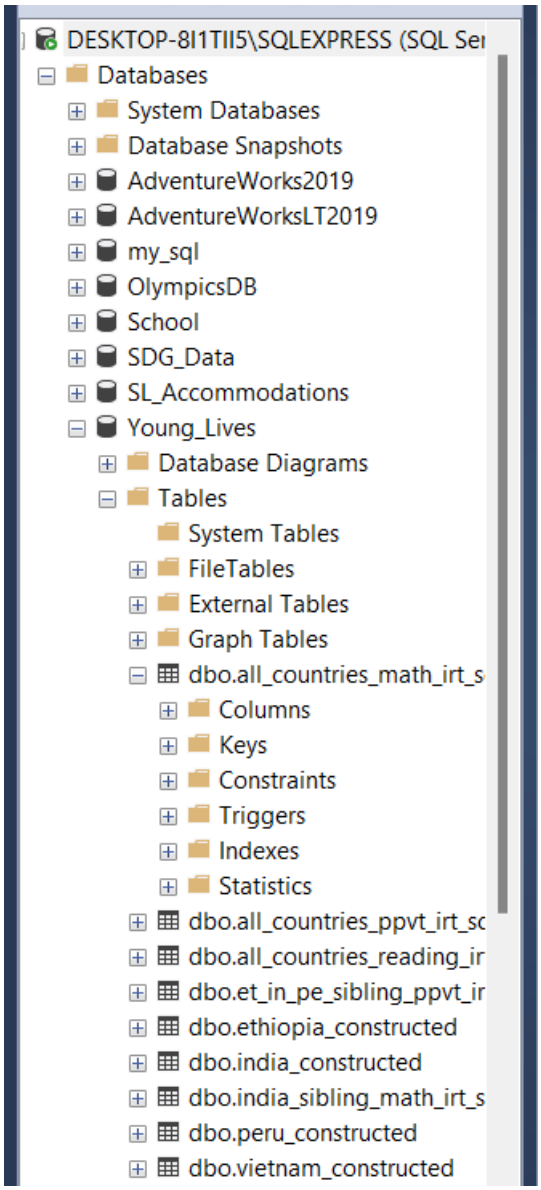
1.2 DATABASE DESIGN

Careful planning is necessary to ensure effective data storage, query performance, and the capacity to establish meaningful links between various variables while designing a database to store and manage data from the Young Lives project for the Child Well-Being Monitor reporting system. The main procedures and justifications for creating the database are listed below:

***STEP 01** : Create a data base using this code as shown below.*



***STEP 02 :** When executing this code, we can see a database "Young_Lives" from the database part.*



STEP 03 : *The* ***Young_Lives*** *database has two tables,* ***`ethiopia_constructed} and `india_constructed},*** *that hold country-specific data from Ethiopia and India. These tables can be previewed using the provided SQL code snippets.*

The queries retrieve the first ten rows from all columns in the ***`ethiopia_constructed` and `india_constructed` tables*** *within the `dbo` schema, providing an initial glimpse of the data structure for each country.*

```
----Preview the data
-- Preview the first 10 rows of the dataset
SELECT TOP 10 *
FROM [dbo].[ethiopia_constructed];

SELECT TOP 10 *
FROM [dbo].[india_constructed];
```

table Young_Lives .dbo.india_constructed

Results Messages

	childid	yc	round	inround	panel	deceased	dint	commid	clustid	region	typesite	childloc	chsex	chlang	chethnic	chldrel	agemon	marrcohab	marrcohab_age	birth	birth_age	chweight
1	ET010017	1	1	1	1		11/7/2002	ET1011	1	14	1	1	2	2	12	7	14					8
2	ET010017	1	2	1	1		1/5/2007	ET1011	1	14	1	1	2	2	12	7	64					14.89999962
3	ET010017	1	3	1	1		12/12/2009	ET1011	1	14	1	1	2	2	12	7	100					20.3
4	ET010017	1	4	1	1		12/11/2013	ET1011	1	14	1	1	2	2	12	7	147					33.90000153
5	ET010017	1	5	1	1		11/30/2016	ET1011	1	14	1	1	2	2	12	7	184					53
6	ET010018	1	1	1	1		10/22/2002	ET1011	1	14	1	1	1	2	18	7	13					12
7	ET010018	1	2	1	1		1/4/2007	ET1011	1	14	1	1	1	2	18	7	64					19.29999924
8	ET010018	1	3	1	1		1/1/2010	ET9348	90	14	1	1	1	2	18	7	100					25.3
9	ET010018	1	4	1	1		2/18/2014	ET1011	1	14	1	1	1	2	18	7	149					37.79999924
10	ET010018	1	5	1	1		12/31/2016			14	1	1	1	2	18	7	184					56

00 %

Results Messages

	childid	yc	round	inround	panel12345	deceased	dint	clustid	commid	region	typesite	childloc	chsex	chlang	chethnic	chldrel	agemon	marrcohab	marrcohab_age	birth	birth_age	chweight
1	IN070077	1	4	1	1		8/12/2013	7	IN020	21	2	1	2	24	21	1	141					32.200000
2	IN070077	1	5	1	1		8/14/2016	7	IN020	21	2	1	2	24	21	1	177					48.599998
3	IN070078	1	1	1	1		10/31/2002	7	IN020	21	2	1	1	21	23	4	7					7.4000000
4	IN070078	1	2	1	1		3/26/2007	7	IN020	21	2	1	1	21	23	4	60					13.5
5	IN070078	1	3	1	1		8/11/2009	7	IN020	21	2	1	1	21	23	4	89					17.100000
6	IN070078	1	4	1	1		8/17/2013	7	IN020	21	2	1	1	21	23	4	137					27.899998
7	IN070078	1	5	1	1		8/16/2016	7	IN020	21	2	1	1	21	23	4	173					45.5
8	IN070079	1	1	1	1		10/2/2002	7	IN020	21	2	1	2	21	23	4	7					7
9	IN070079	1	2	1	1		5/8/2007	7	IN020	21	2	1	2	21	23	4	63					14.5
10	IN070079	1	3	1	1		1/18/2010	90	IN163	23	1	1	2	21	23	4	95					19.799999

Query executed successfully. DESKTOP-8I1TII5\SQLEXPRESS ... DESKTOP-8I1TII5\Midara... Young_Lives 00:00:00 10 rows

Ln 9 Col 1 Ch 1 INS

STEP 04 : *Retrieve a list of all column names and their corresponding data types from the* ***ethiopia_constructed and india_constructed tables*** *within the dbo schema.*

```
-- Get the column names and data types of the table
SELECT COLUMN_NAME, DATA_TYPE
FROM INFORMATION_SCHEMA.COLUMNS
WHERE TABLE_NAME ='ethiopia_constructed';
SELECT COLUMN_NAME, DATA_TYPE
FROM INFORMATION_SCHEMA.COLUMNS
WHERE TABLE_NAME = 'india_constructed';
```

Ethiopia_constructed table

Results Messages

	COLUMN_NAME	DATA_TYPE
5	panel	varchar
6	deceased	varchar
7	dint	varchar
8	commid	varchar
9	clustid	varchar
10	region	varchar
11	typesite	varchar
12	childloc	varchar
13	chsex	varchar
14	chlang	varchar
15	chethnic	varchar
16	chldrel	varchar
17	agemon	varchar
18	marrcohab	varchar
19	marrcohab_age	varchar
20	birth	varchar
21	birth_age	varchar

Query executed successfully.

India_constructed table

Results Messages

	COLUMN_NAME	DATA_TYPE
1	childid	varchar
2	yc	varchar
3	round	varchar
4	inround	varchar
5	panel12345	varchar
6	deceased	varchar
7	dint	varchar
8	clustid	varchar
9	commid	varchar
10	region	varchar
11	typesite	varchar
12	childloc	varchar
13	chsex	varchar
14	chlang	varchar
15	chethnic	varchar
16	chldrel	varchar
17	agemon	varchar

Query executed successfully.

STEP 05 : *Count missing or null values in each column.*

```
-- Count missing or null values in each column
SELECT
    SUM(CASE WHEN [childid] IS NULL OR [childid] = '' THEN 1 ELSE 0 END) AS Missing_ChildID,
    SUM(CASE WHEN [chsex] IS NULL OR [chsex] = '' THEN 1 ELSE 0 END) AS Missing_Sex,
    SUM(CASE WHEN [chweight] IS NULL OR [chweight] = '' THEN 1 ELSE 0 END) AS Missing_Weight,
    SUM(CASE WHEN [chheight] IS NULL OR [chheight] = '' THEN 1 ELSE 0 END) AS Missing_Height,
    SUM(CASE WHEN [bmi] IS NULL OR [bmi] = '' THEN 1 ELSE 0 END) AS Missing_BMI,
    SUM(CASE WHEN [underweight] IS NULL OR [underweight] = '' THEN 1 ELSE 0 END) AS Missing_Underweight,
    SUM(CASE WHEN [stunting] IS NULL OR [stunting] = '' THEN 1 ELSE 0 END) AS Missing_Stunting,
    SUM(CASE WHEN [thinness] IS NULL OR [thinness] = '' THEN 1 ELSE 0 END) AS Missing_Thinness,
    SUM(CASE WHEN [agemon] IS NULL OR [agemon] = '' THEN 1 ELSE 0 END) AS Missing_AgeMon,
    SUM(CASE WHEN [foodsec] IS NULL OR [foodsec] = '' THEN 1 ELSE 0 END) AS Missing_Foodsec,
    SUM(CASE WHEN [zwfa] IS NULL OR [zwfa] = '' THEN 1 ELSE 0 END) AS Missing_ZWFA,
    SUM(CASE WHEN [zhfa] IS NULL OR [zhfa] = '' THEN 1 ELSE 0 END) AS Missing_ZHFA,
    SUM(CASE WHEN [zbfa] IS NULL OR [zbfa] = '' THEN 1 ELSE 0 END) AS Missing_ZBFA,
    SUM(CASE WHEN [dadedu] IS NULL OR [dadedu] = '' THEN 1 ELSE 0 END) AS Missing_DadEdu,
    SUM(CASE WHEN [momedu] IS NULL OR [momedu] = '' THEN 1 ELSE 0 END) AS Missing_MomEdu,
    SUM(CASE WHEN [caredu] IS NULL OR [caredu] = '' THEN 1 ELSE 0 END) AS Missing_CareEdu,
    SUM(CASE WHEN [headedu] IS NULL OR [headedu] = '' THEN 1 ELSE 0 END) AS Missing_HeadEdu,
    SUM(CASE WHEN [enrol] IS NULL OR [enrol] = '' THEN 1 ELSE 0 END) AS Missing_Enroll,
    SUM(CASE WHEN [engrade] IS NULL OR [engrade] = '' THEN 1 ELSE 0 END) AS Missing_Engrade,
```

100 %

Results Messages

	ıool	Missing_TimeSch	Missing_LevLRead	Missing_LevLWrit	Missing_Literate	Missing_HHSize	Missing_TypeSite	Missing_Region	Missing_OwnHouse	Missing_OwnLandHouse	Missing_DrWaterQ	Missing_ToiletQ	Missing_ElecQ	Missing_CookingQ
1		5249	11160	11178	11186	801	804	804	3805	2443	808	806	805	819

	Missing_ChildID	Missing_Chsex	Missing_Chweight	Missing_Chheight	Missing_BMI	Missing_Underweight	Missing_Stunting	Missing_Thinness	Missing_AgeMon	Missing_Foodsec	Missing_ZWFA	Missing_ZHFA	Missing_ZBFA	Missing_DadEdu	Mi
1	0	0	1093	962	1096	8438	2241	2439	848	8443	8421	2194	2328	3848	17

1.3 DATA PREPARATION

STEP 06 : *Create a new table named "India" in the dbo schema that contains the specified columns from the* ***india_constructed*** *table. The columns to be included are related to child demographics, health, education, household conditions, and social environment. Here is the code for that,*

```
SELECT
    childid, chsex, chweight, chheight, bmi, underweight, stunting, thinness, agemon, foodsec, zwfa, zhfa,
    zbfa, dadedu, momedu, caredu, headedu, enrol, engrade, hschool, timesch, levlread, levlwrit, literate, hhsize,
    typesite, region, ownhouse, ownlandhse, drwaterq, toiletq, elecq, cookingq, hwork, hchore, htask, credit,
    hcare, chhealth, chmightdie, chillness, chinjury, chdisability, carehead, shhouse1, shhouse2, shhouse3,
    shenv1, shenv2, shenv3, numante, delivery, tetanus, bcg, measles, polio, dpt,
    hib,
    wi,
    hq,
    sv
INTO
    India                                    ( -- This will be the new table name---)
FROM
    dbo.india_constructed;


SELECT TOP 10 *
FROM [dbo].[India];
```

10 %

Results | Messages

	childid	chsex	chweight	chheight	bmi	underweight	stunting	thinness	agemon	foodsec	zwfa	zhfa	zbfa	dadedu	momedu
1	IN070077	Female	32.20000076	137			not stunted	not thin	141	We eat enough but not always what we would like	NA	-1.88	-0.3	9	Grade 9
2	IN070077	Female	48.59999847	153.60000		Click to select the whole column	not stunted	not thin	177	We always eat enough of what we want	NA	-1.12	0.18	NA	Grade 10
3	IN070078	Male	7.400000095	67.19999695	16.38676474	not underweight	not stunted	not thin	7	NA	-1.32	-1.41	-0.66	0	None
4	IN070078	Male	13.5	99.75	13.56775379	moderately underweight	moderately stunted	not thin	60	NA	-2.349999905	-2.25999999	-1.350000024	0	None
5	IN070078	Male	17.10000038	115	12.93005657	moderately underweight	not stunted	moderately thin	89	We sometimes do not eat enough	-2.619999886	-1.679999948	-2.289999962	0	None
6	IN070078	Male	27.89999962	136.8000031	14.9084325	NA	not stunted	not thin	137	We eat enough but not always what we would like	NA	-1.29	-1.44	0	None
7	IN070078	Male	45.5	161	17.55333513	NA	not stunted	not thin	173	We eat enough but not always what we would like	NA	-0.64	-0.86	0	None
8	IN070079	Female	7	66.5	15.8290463	not underweight	not stunted	not thin	7	NA	-1.03	-0.9	-0.7	8	Grade 6
9	IN070079	Female	14.5	101.8000031	13.99176216	not underweight	not stunted	not thin	63	NA	-1.840000033	-1.840000033	-0.910000026	9	Grade 7
10	IN070079	Female	19.79999924	114.8000031	15.02385426	not underweight	not stunted	not thin	95	We eat enough but not always what we would like	-1.50999999	-1.99000001	-0.379999995	9	Grade 9

STEP 07: *The* ***`ethiopia_constructed ' table's*** *designated columns should be moved to a new table called "Ethiopia" in the `dbo' schema. The demographics of children, their health, education, living circumstances, and social environment are the columns that need to be included. Here is the code for that,*

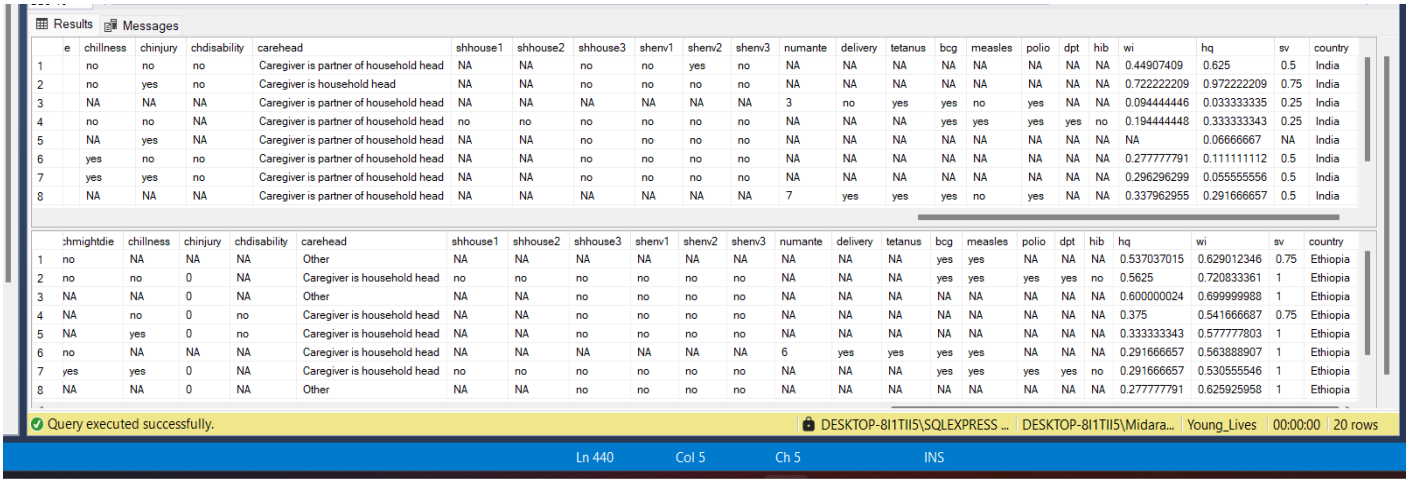
```
SELECT
  childid, chsex, agemon, foodsec, chweight, chheight, bmi, zwfa, zhfa, zbfa, underweight, stunting, thinness,dadedu, momedu, caredu, headedu, enrol, engrade, hschool,
    hib,
    hg,
    wi,
    sv
INTO [dbo].[Ethiopia]
FROM [dbo].[ethiopia_constructed];

SELECT TOP 10 *
FROM [dbo].[Ethiopia];
```

STEP 08 : *In the `dbo` schema, add a new column called "country" to the "Ethiopia" and "India" tables. Next, change the value of "Ethiopia" in the "country" column of the "Ethiopia" table. By standardizing the data across the two tables, this step should make it simpler to combine or compare the data according to the nation.*

```
----Add Country Column------

alter table[dbo].[Ethiopia]
add country Varchar(50);

UPDATE [dbo].[Ethiopia]
SET country   = 'Ethiopia'

alter table [dbo].[India]
add country Varchar(50);
```

STEP 09 : *Replace null values in both the "India" and "Ethiopia" tables with the string "NA". This ensures data consistency and avoids potential errors during analysis. The update statements cover a wide range of columns, including demographics, health, education, household conditions, and social environment.*

```
-- Replace Null Values---
--India--
UPDATE [dbo].[India]
SET
    childid = COALESCE(NULLIF(childid, ''), 'NA'),
    chsex = COALESCE(NULLIF(chsex, ''), 'NA'),
    agemon = COALESCE(NULLIF(agemon, ''), 'NA'),
    chweight = COALESCE(NULLIF(chweight, ''), 'NA'),
    chheight = COALESCE(NULLIF(chheight, ''), 'NA'),
    bmi = COALESCE(NULLIF(bmi, ''), 'NA'),
    zwfa = COALESCE(NULLIF(zwfa, ''), 'NA'),
    zhfa = COALESCE(NULLIF(zhfa, ''), 'NA'),
    zbfa = COALESCE(NULLIF(zbfa, ''), 'NA'),
    underweight = COALESCE(NULLIF(underweight, ''), 'NA'),
    stunting = COALESCE(NULLIF(stunting, ''), 'NA'),
    thinness = COALESCE(NULLIF(thinness, ''), 'NA'),
    dadedu = COALESCE(NULLIF(dadedu, ''), 'NA'),
    momedu = COALESCE(NULLIF(momedu, ''), 'NA'),
    caredu = COALESCE(NULLIF(caredu, ''), 'NA'),
    headedu = COALESCE(NULLIF(headedu, ''), 'NA'),
    enrol = COALESCE(NULLIF(enrol, ''), 'NA'),
    engrade = COALESCE(NULLIF(engrade, ''), 'NA'),
    hschool = COALESCE(NULLIF(hschool, ''), 'NA'),
    timesch = COALESCE(NULLIF(timesch, ''), 'NA'),
    levlread = COALESCE(NULLIF(levlread, ''), 'NA'),
    levlwrit = COALESCE(NULLIF(levlwrit, ''), 'NA'),
    literate = COALESCE(NULLIF(literate, ''), 'NA'),
    hhsize = COALESCE(NULLIF(hhsize, ''), 'NA'),
    typesite = COALESCE(NULLIF(typesite, ''), 'NA'),
    region = COALESCE(NULLIF(region, ''), 'NA'),
    ownhouse = COALESCE(NULLIF(ownhouse, ''), 'NA'),
    ownlandhse = COALESCE(NULLIF(ownlandhse, ''), 'NA'),
    drwaterq = COALESCE(NULLIF(drwaterq, ''), 'NA'),
    toiletq = COALESCE(NULLIF(toiletq, ''), 'NA'),
    elecq = COALESCE(NULLIF(elecq, ''), 'NA'),
    cookingq = COALESCE(NULLIF(cookingq, ''), 'NA'),
    hwork = COALESCE(NULLIF(hwork, ''), 'NA'),
100 %
```



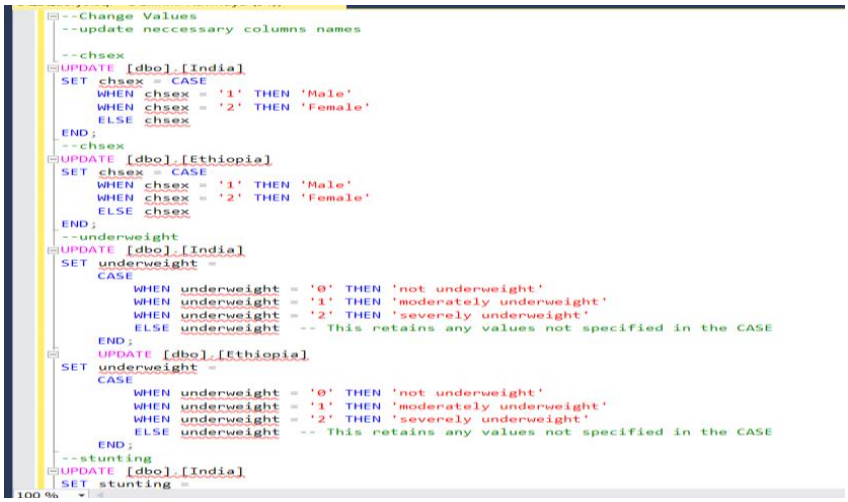
	e	chillness	chinjury	chdisability	carehead	shhouse1	shhouse2	shhouse3	shenv1	shenv2	shenv3	numante	delivery	tetanus	bcg	measles	polio	dpt	hib	wi	hq	sv	country
1		no	no	no	Caregiver is partner of household head	NA	NA	no	no	yes	no	NA	NA	NA	NA	NA	NA	NA	NA	0.44907409	0.625	0.5	India
2		no	yes	no	Caregiver is household head	NA	NA	no	no	no	no	NA	NA	NA	NA	NA	NA	NA	NA	0.722222209	0.972222209	0.75	India
3		NA	NA	NA	Caregiver is partner of household head	NA	NA	NA	NA	NA	NA	3	no	yes	yes	no	yes	NA	NA	0.094444446	0.033333335	0.25	India
4		no	no	NA	Caregiver is partner of household head	no	no	no	no	no	no	NA	NA	NA	yes	yes	yes	yes	no	0.194444448	0.333333343	0.25	India
5		NA	yes	NA	Caregiver is partner of household head	NA	NA	no	no	no	no	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.06666667	NA	India
6		yes	no	no	Caregiver is partner of household head	NA	NA	no	no	no	no	NA	NA	NA	NA	NA	NA	NA	NA	0.277777791	0.111111112	0.5	India
7		yes	yes	no	Caregiver is partner of household head	NA	NA	no	no	no	no	NA	NA	NA	NA	NA	NA	NA	NA	0.296296299	0.055555556	0.5	India
8		NA	NA	NA	Caregiver is partner of household head	NA	NA	NA	NA	NA	NA	7	yes	yes	yes	no	yes	NA	NA	0.337962955	0.291666657	0.5	India

	chmightdie	chillness	chinjury	chdisability	carehead	shhouse1	shhouse2	shhouse3	shenv1	shenv2	shenv3	numante	delivery	tetanus	bcg	measles	polio	dpt	hib	hq	wi	sv	country
1	no	NA	NA	NA	Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	yes	yes	NA	NA	NA	0.537037015	0.629012346	0.75	Ethiopia
2	no	no	0	NA	Caregiver is household head	no	no	no	no	no	no	NA	NA	NA	yes	yes	yes	yes	no	0.5625	0.720833361	1	Ethiopia
3	NA	NA	0	NA	Other	NA	NA	no	no	no	no	NA	NA	NA	NA	NA	NA	NA	NA	0.600000024	0.699999988	1	Ethiopia
4	NA	no	0	no	Caregiver is household head	NA	NA	no	no	no	no	NA	NA	NA	NA	NA	NA	NA	NA	0.375	0.541666687	0.75	Ethiopia
5	NA	yes	0	no	Caregiver is household head	NA	NA	no	no	no	no	NA	NA	NA	NA	NA	NA	NA	NA	0.333333343	0.577777803	1	Ethiopia
6	no	NA	NA	NA	Caregiver is household head	NA	NA	NA	NA	NA	NA	6	yes	yes	yes	yes	NA	NA	NA	0.291666657	0.563888907	1	Ethiopia
7	yes	yes	0	NA	Caregiver is household head	no	no	no	no	no	no	NA	NA	NA	yes	yes	yes	yes	no	0.291666657	0.530555546	1	Ethiopia
8	NA	NA	0	NA	Other	NA	NA	no	no	no	no	NA	NA	NA	NA	NA	NA	NA	NA	0.277777791	0.625925958	1	Ethiopia

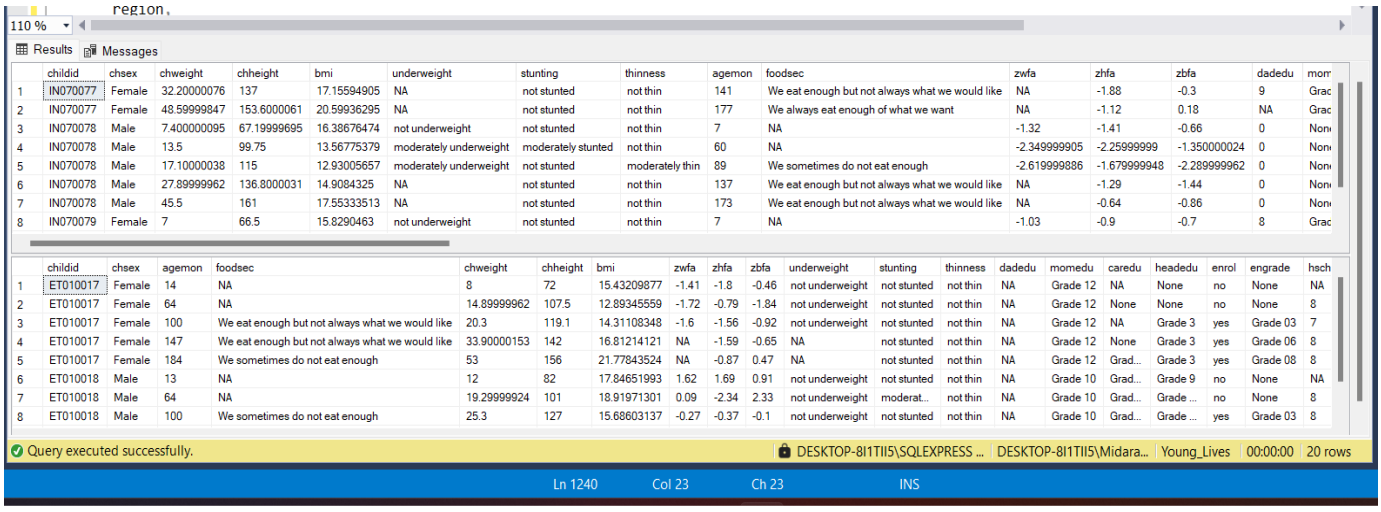
Query executed successfully. DESKTOP-8I1TII5\SQLEXPRESS ... DESKTOP-8I1TII5\Midara... Young_Lives 00:00:00 20 rows

Ln 440 Col 5 Ch 5 INS

STEP 09 : *In certain columns, replace the numerical values with labels that provide additional context. Values for gender, underweight categories, stunting, thinness, education, enrollment status, reading and writing proficiency, location types, household characteristics, health issues, immunization history, and food security are all to be standardized. Making the data easier to understand and more readable for humans is the aim.*



```
--Change Values
--update neccessary columns names

--chsex
UPDATE [dbo].[India]
SET chsex = CASE
    WHEN chsex = '1' THEN 'Male'
    WHEN chsex = '2' THEN 'Female'
    ELSE chsex
END;
--chsex
UPDATE [dbo].[Ethiopia]
SET chsex = CASE
    WHEN chsex = '1' THEN 'Male'
    WHEN chsex = '2' THEN 'Female'
    ELSE chsex
END;
--underweight
UPDATE [dbo].[India]
SET underweight =
    CASE
        WHEN underweight = '0' THEN 'not underweight'
        WHEN underweight = '1' THEN 'moderately underweight'
        WHEN underweight = '2' THEN 'severely underweight'
        ELSE underweight  -- This retains any values not specified in the CASE
    END;
    UPDATE [dbo].[Ethiopia]
SET underweight =
    CASE
        WHEN underweight = '0' THEN 'not underweight'
        WHEN underweight = '1' THEN 'moderately underweight'
        WHEN underweight = '2' THEN 'severely underweight'
        ELSE underweight  -- This retains any values not specified in the CASE
    END;
--stunting
UPDATE [dbo].[India]
SET stunting =
```



region,

110 %

Results Messages

	childid	chsex	chweight	chheight	bmi	underweight	stunting	thinness	agemon	foodsec	zwfa	zhfa	zbfa	dadedu	mom
1	IN070077	Female	32.20000076	137	17.15594905	NA	not stunted	not thin	141	We eat enough but not always what we would like	NA	-1.88	-0.3	9	Grac
2	IN070077	Female	48.59999847	153.6000061	20.59936295	NA	not stunted	not thin	177	We always eat enough of what we want	NA	-1.12	0.18	NA	Grac
3	IN070078	Male	7.400000095	67.19999695	16.38676474	not underweight	not stunted	not thin	7	NA	-1.32	-1.41	-0.66	0	Non
4	IN070078	Male	13.5	99.75	13.56775379	moderately underweight	moderately stunted	not thin	60	NA	-2.349999905	-2.25999999	-1.350000024	0	Non
5	IN070078	Male	17.10000038	115	12.93005657	moderately underweight	not stunted	moderately thin	89	We sometimes do not eat enough	-2.619999886	-1.679999948	-2.289999962	0	Non
6	IN070078	Male	27.89999962	136.8000031	14.9084325	NA	not stunted	not thin	137	We eat enough but not always what we would like	NA	-1.29	-1.44	0	Non
7	IN070078	Male	45.5	161	17.55333513	NA	not stunted	not thin	173	We eat enough but not always what we would like	NA	-0.64	-0.86	0	Non
8	IN070079	Female	7	66.5	15.8290463	not underweight	not stunted	not thin	7	NA	-1.03	-0.9	-0.7	8	Grac

	childid	chsex	agemon	foodsec	chweight	chheight	bmi	zwfa	zhfa	zbfa	underweight	stunting	thinness	dadedu	momedu	caredu	headedu	enrol	engrade	hsch
1	ET010017	Female	14	NA	8	72	15.43209877	-1.41	-1.8	-0.46	not underweight	not stunted	not thin	NA	Grade 12	NA	None	no	None	NA
2	ET010017	Female	64	NA	14.89999962	107.5	12.89345559	-1.72	-0.79	-1.84	not underweight	not stunted	not thin	NA	Grade 12	None	None	no	None	8
3	ET010017	Female	100	We eat enough but not always what we would like	20.3	119.1	14.31108348	-1.6	-1.56	-0.92	not underweight	not stunted	not thin	NA	Grade 12	NA	Grade 3	yes	Grade 03	7
4	ET010017	Female	147	We eat enough but not always what we would like	33.90000153	142	16.81214121	NA	-1.59	-0.65	NA	not stunted	not thin	NA	Grade 12	None	Grade 3	yes	Grade 06	8
5	ET010017	Female	184	We sometimes do not eat enough	53	156	21.77843524	NA	-0.87	0.47	NA	not stunted	not thin	NA	Grade 12	Grad...	Grade 3	yes	Grade 08	8
6	ET010018	Male	13	NA	12	82	17.84651993	1.62	1.69	0.91	not underweight	not stunted	not thin	NA	Grade 10	Grad...	Grade 9	no	None	NA
7	ET010018	Male	64	NA	19.29999924	101	18.91971301	0.09	-2.34	2.33	not underweight	moderat...	not thin	NA	Grade 10	Grad...	Grade ...	no	None	8
8	ET010018	Male	100	We sometimes do not eat enough	25.3	127	15.68603137	-0.27	-0.37	-0.1	not underweight	not stunted	not thin	NA	Grade 10	Grad...	Grade ...	yes	Grade 03	8

Query executed successfully. DESKTOP-8I1TII5\SQLEXPRESS ... DESKTOP-8I1TII5\Midara... Young_Lives 00:00:00 20 rows

Ln 1240 Col 23 Ch 23 INS

1.4 SQL AND DATA PROCESSING

STEP 10 : In order to provide pre-aggregated and filtered datasets for analysis, the given code defines seven views that mix data from the "India" and "Ethiopia" tables. These opinions center on a number of facets of children's wellbeing, such as:

1. Food Security of Child Growth: Compiles demographic data with data on child growth metrics and food security.
2. Parenta in lChild Education: Integrates information about the educational attainment of both parents and children.
3. UrbanRuralHouseholdSize: Examines differences between urban and rural locations in both nations in terms of household size, asset ownership, and region.

4. Healthcare_access: Compiles information on vaccines, child health outcomes, and healthcare access.

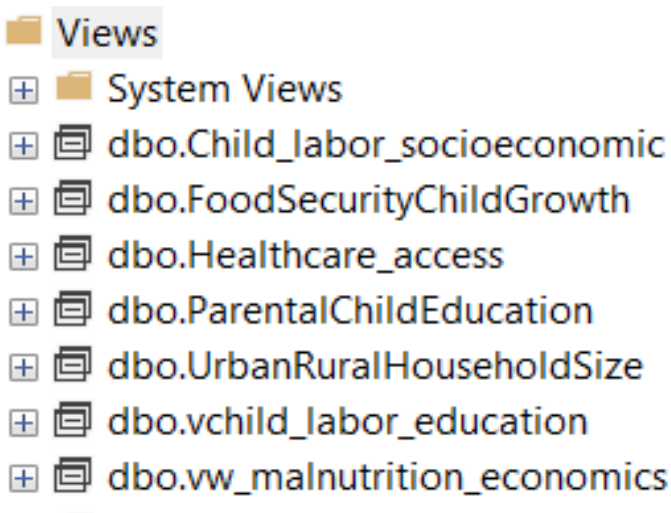
5. vw_malnutrition_economics: combines information on household asset ownership, infrastructural access, child nutritional indicators, and demographics.

6. Child_labor_in_education: Compiles information on household size, location type, wealth index, educational outcomes, and child labor indicators.

7. Child_labor_in _socioeconomic:Compiles socioeconomic status, demographic data, and statistics on child labor. indicators.

These perspectives can be applied to examine diverse facets of child welfare and establish connections among distinct elements. For instance, you could use the "Child_labor_education" view to look at how child labor affects educational outcomes or the "FoodSecurityChildGrowth" view to look at the relationship between food security and child growth markers.

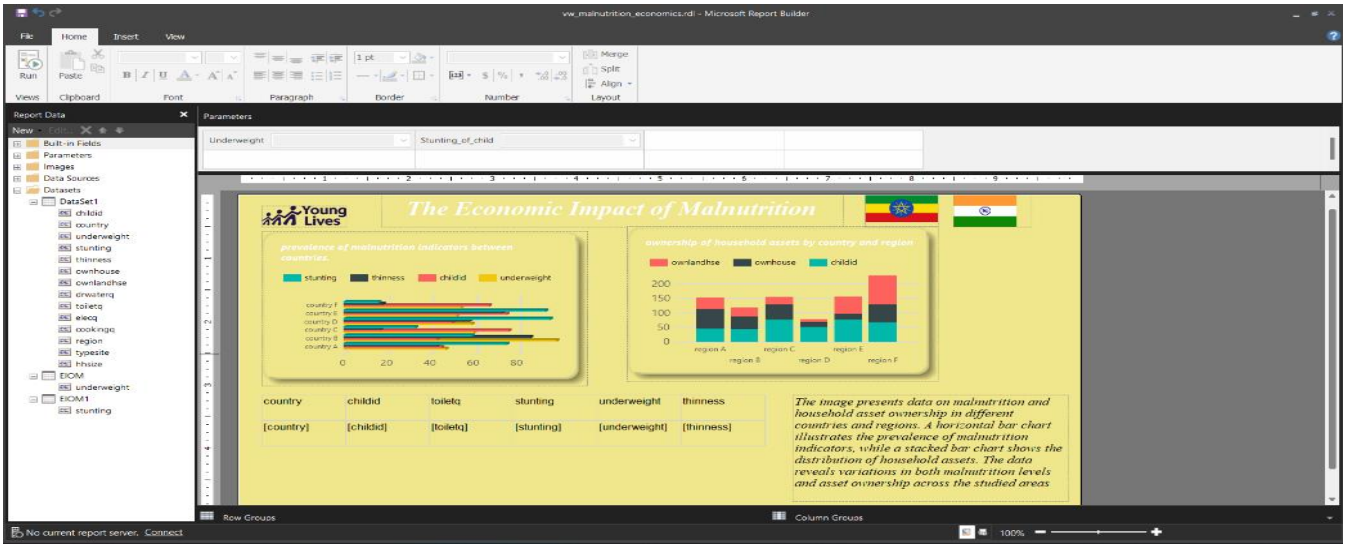
```sql
CREATE VIEW Child_labor_socioeconomic AS
SELECT
    childid,
    country,
    hwork,          -- Child's involvement in work (yes/no)
    hchore,         -- Household chores (yes/no)
    htask,          -- Task responsibilities (yes/no)
    wi,             -- Wealth index
    dadedu,        -- Father's education level
    momedu,        -- Mother's education level
    caredu,         -- Caregiver's education level
    enrol,          -- Child's enrollment status
    engrade,        -- Current grade in school
    hhsize,         -- Household size
    region,         -- Geographic region
    typesite        -- Urban or rural classification
FROM
    [dbo].[India]
UNION ALL
SELECT
    childid,
   country,
    hwork,
    hchore,
    htask,
    wi,
    dadedu,
    momedu,
    caredu,
    enrol,
    engrade,
    hhsize,
    region,
    typesite
FROM
    [dbo].[Ethiopia];
```



1.5 REPORT DESIGN AND IMPLEMENTATION.

01.*Malnutrition and Household Economic Factors.*

To provide a uniform examination of malnutrition and its relationship to household economic and infrastructure situations in both Ethiopia and India, the view aggregates data from both nations' tables.



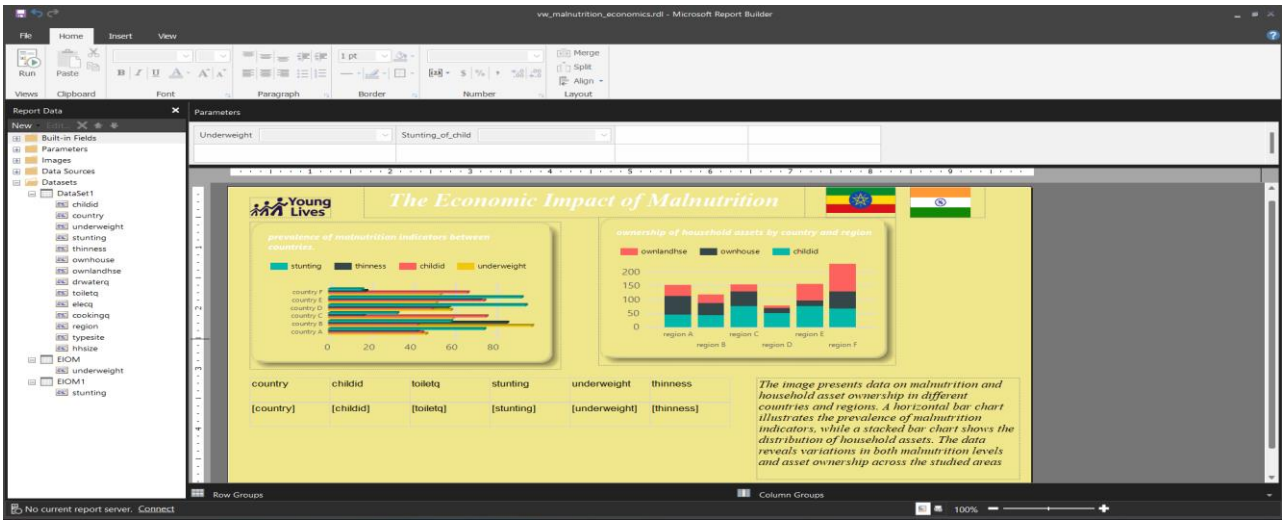
The code we provided below creates a view named ***vw_malnutrition_economics*** that combines data from the **"India" and "Ethiopia" tables.** This view is likely used to analyze the relationship between child malnutrition indicators, household asset ownership, infrastructure access, and demographic information in both countries.

```
--5.Malnutrition and Household Economic Factors
CREATE VIEW vw_malnutrition_economics AS
SELECT
    childid,
    country,
    underweight, stunting, thinness,  -- Child malnutrition indicators
    ownhouse, ownlandhse,  -- Household asset ownership
    drwaterq, toiletq, elecq, cookingq,  -- Household infrastructure access
    region, typesite, hhsize  -- Demographic information
FROM
    [dbo].[India]
UNION ALL
SELECT
    childid,
    country,
    underweight, stunting, thinness,
    ownhouse, ownlandhse,
    drwaterq, toiletq, elecq, cookingq,
    region, typesite, hhsize
FROM
    [dbo].[Ethiopia];
```

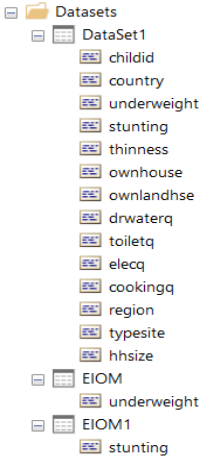
- **BEFORE RUN**

Illustrations:

Horizontal bar chart: Each country's prevalence of several malnutrition indicators (such as stunting, underweight, and thinness) is probably shown in this chart.
Stacked bar chart: This figure most likely depicts how household assets such as a toilet, a home, and land—are distributed among the various areas of a given nation.



DataSet1 contains the following columns:



- childid: Unique identifier for each child
- country: Country (India or Ethiopia)
- underweight, stunting, thinness: Child malnutrition indicators
- ownhouse, ownlandhse: Household asset ownership (whether the household owns a house or land)
- drwaterq, toiletq, elecq, cookingq: Household infrastructure access (drinking water quality, toilet facilities, electricity, cooking fuel)
- region: Geographic region
- typesite: Urban or rural location
- hhsize: Household size

➢ ***After Run***

Parameters:

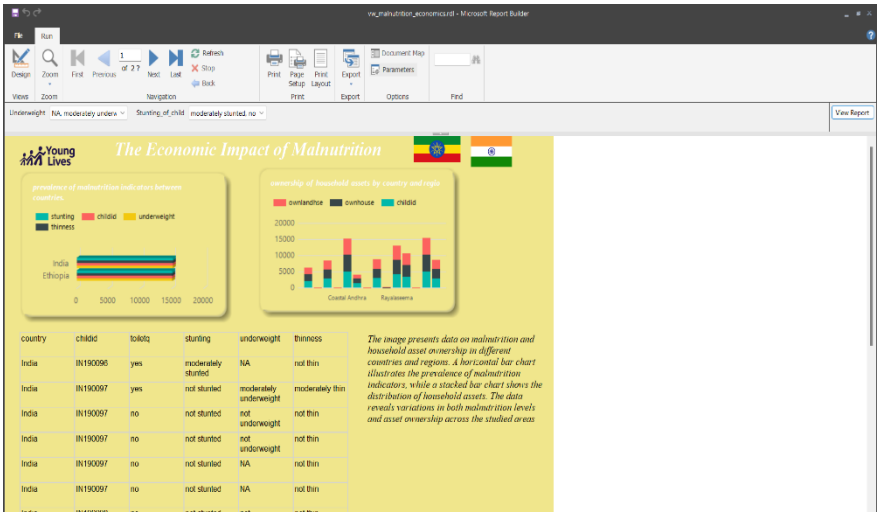
Two parameters or filters in a Power BI report appear to be displayed in the image:

1. ***Underweight:*** The option that is currently available is "NA, moderately underweight." Most likely, this filter is used to choose data for kids according to whether or not they are underweight. "NA" (not applicable), "moderately underweight," and perhaps other categories are the options.
2. ***2. Stunting_of_child:*** The option that is now selected is "moderately stunted, no." Most likely, data is chosen using this filter based on the child's stunting status. "Moderately stunted, no" is one of the alternatives; there may be other categories as well.

With the use of these criteria, users can personalize the report by concentrating on particular data subsets according to the children's stunting and underweight status.

- **Title:** "Prevalence of Malnutrition Indicators Between Countries"
- **Visualization:** A horizontal bar chart displaying the prevalence of each malnutrition indicator for different countries
- It appears that the report is utilizing data from the "vw_malnutrition_economics" view, which aggregates data from Ethiopia and India on demographics, household asset ownership, infrastructural access, and child malnutrition indices.

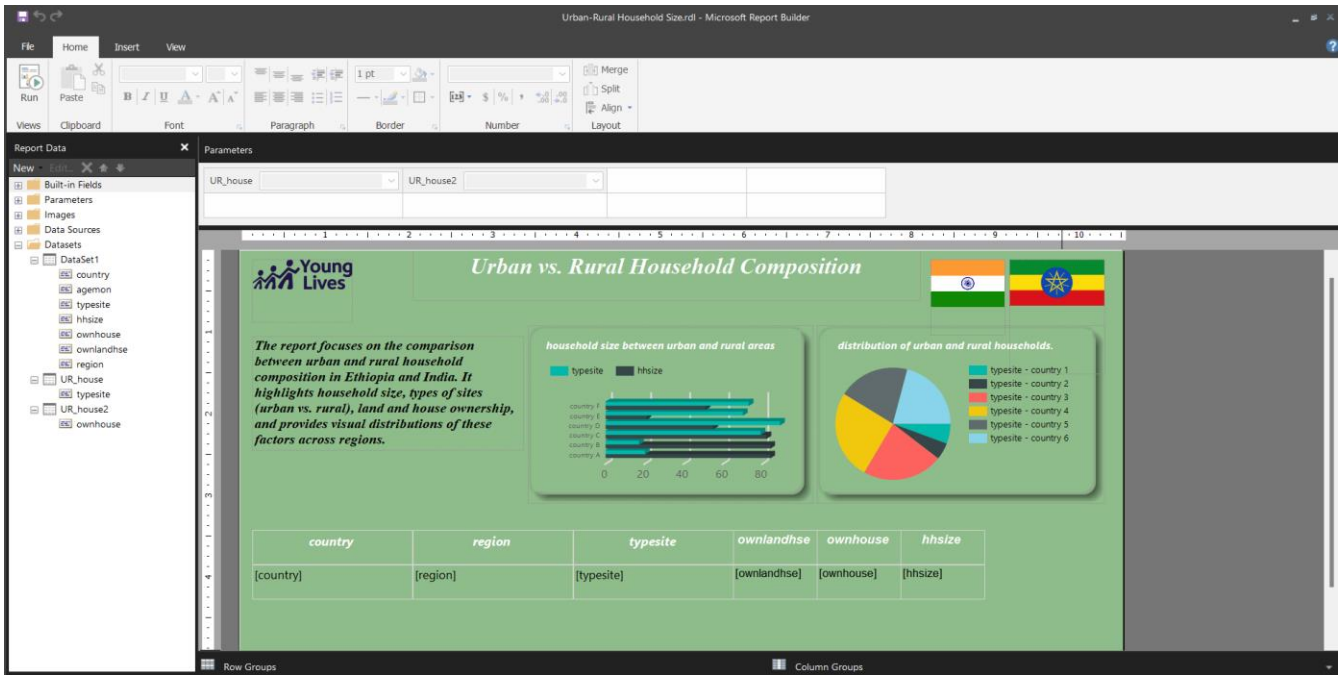
It looks that each country's count of each malnutrition indicator is displayed on the chart. Different malnutrition indicators may be represented by the colors of the bars. All things considered, the research offers a graphic depiction of the frequency of various malnutrition markers in the two nations. It makes comparing the rates of stunting, underweight, and thinness between Ethiopia and India simple.



In general, the study seems to be a useful resource for comprehending how malnutrition affects children's wellbeing economically in poor nations. Users can use it to find locations with high rates of malnutrition, investigate the relationship between malnutrition indicators and household assets, and possibly guide policy efforts to solve these problems.

2. ***Urban vs. Rural Household Composition.***

The image that has been provided displays a Power BI report named "Urban vs. Rural Household Composition." The study seems to be examining data from the Young Lives project, with a particular emphasis on contrasting the household makeup of Ethiopian and Indian urban and rural locations.



The aggregated dataset provided by this view can be used to examine the variations in household composition between urban and rural locations in both nations. This view can be queried to

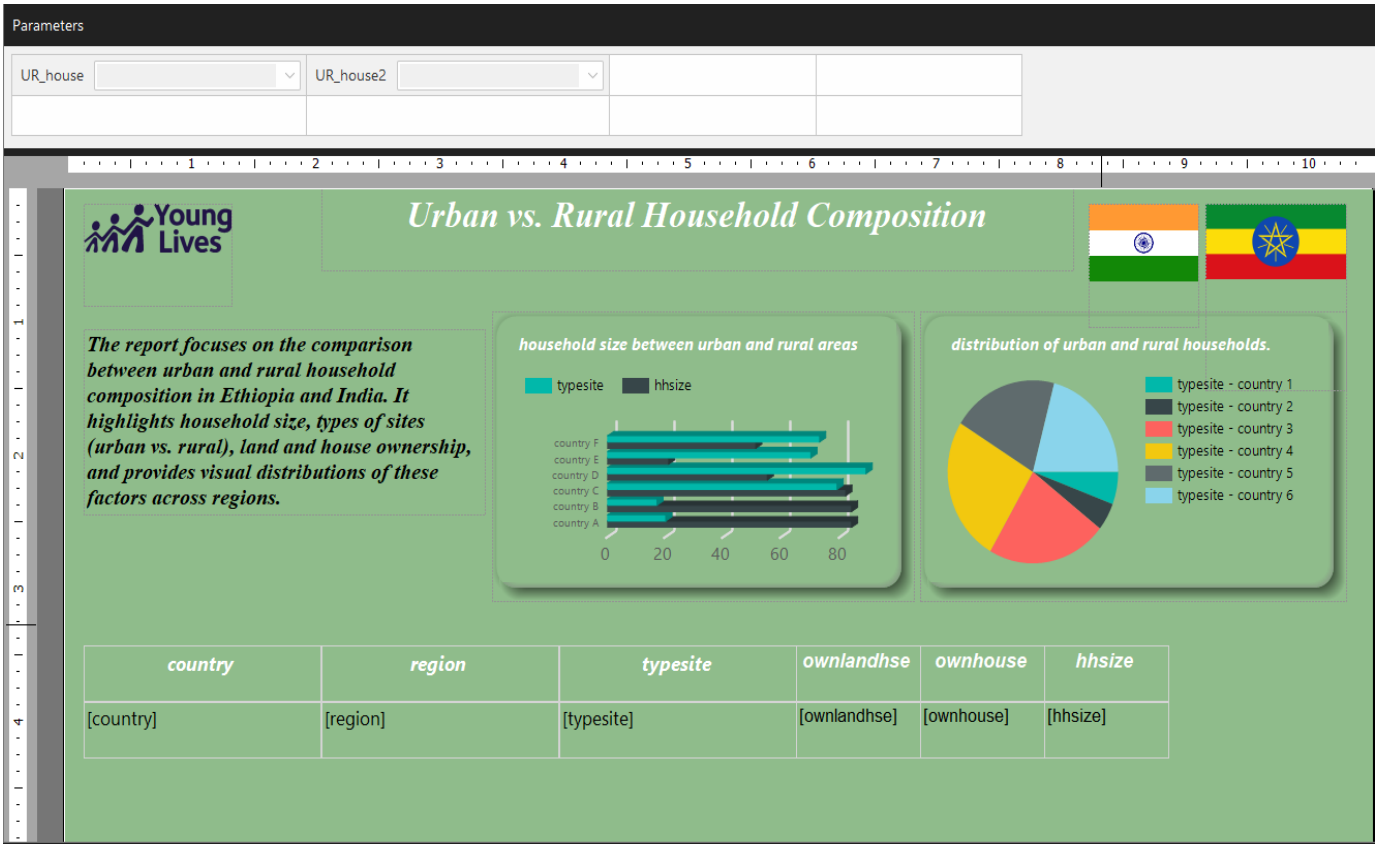
investigate correlations between asset ownership, household size, and other variables in various settlement types and geographical areas.

- **BEFORE RUN**

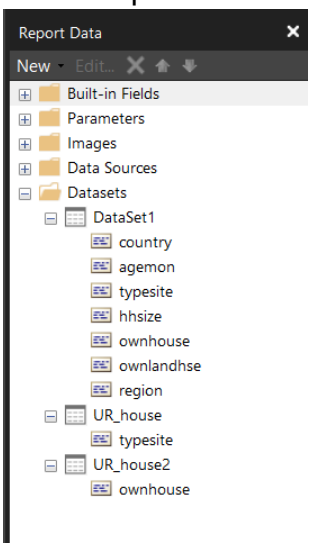
Illustrations:

Pie chart: This graphic shows the distribution of rural and urban families in various nations.
Bar chart: This graphic displays the distribution of household sizes in each nation's urban and rural areas.

```
--3.View for Urban-Rural Household Size
-- Corrected View for Urban-Rural Household Size
CREATE VIEW UrbanRuralHouseholdSize AS
SELECT
    country,
    agemon,
    typesite,
    hhsize,
    ownhouse,
    ownlandhse,
    region
FROM
    (SELECT
        country,
        agemon,   -- agemon should come first
        typesite,
        hhsize,
        ownhouse,
        ownlandhse,
        region
     FROM
        [dbo].[India]
    UNION ALL
    SELECT
        country,
        agemon,  -- agemon should come first in Ethiopia as well
        typesite,
        hhsize,
        ownhouse,
        ownlandhse,
        region
    FROM
        [dbo].[Ethiopia]) AS CombinedData;
```

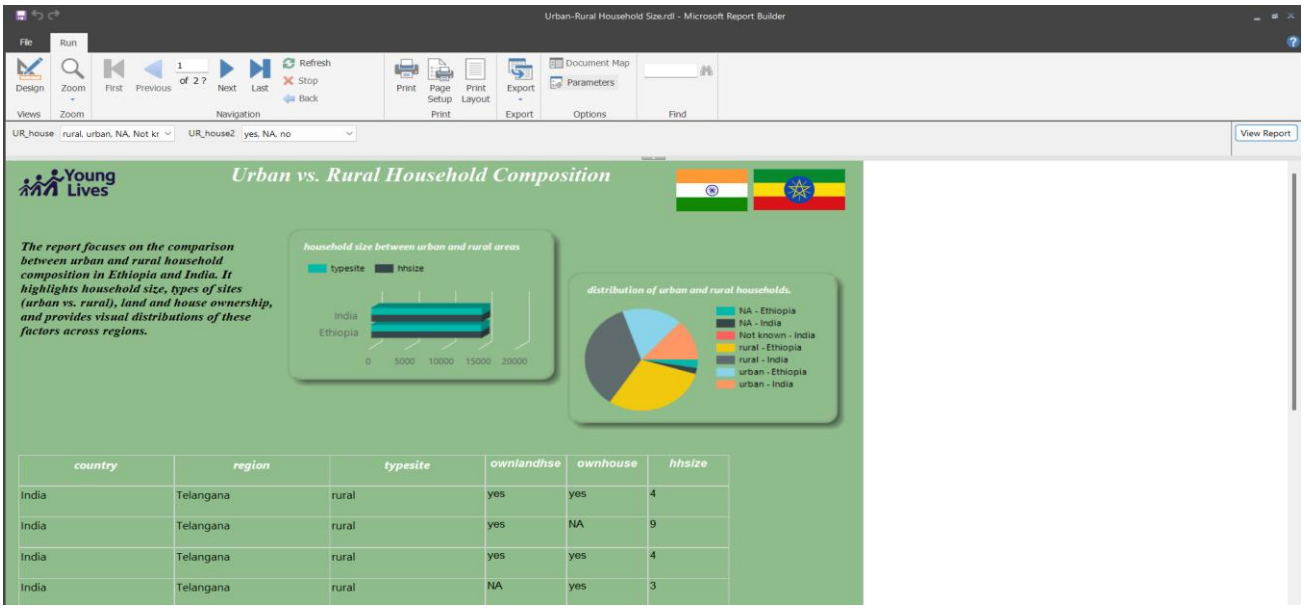


Dataset1: This dataset appears to contain data related to household composition and demographics. It includes columns such as:



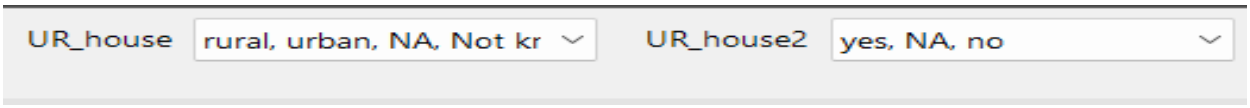
- country: Country (India or Ethiopia)
- agemon: Age of the child in months
- typesite: Urban or rural location
- hhsize: Household size
- ownhouse: Whether the household owns a house
- ownlandhse: Whether the household owns land
- region: Geographic region

➢ AFTER RUN



- The report seems to be using data from the "UrbanRuralHouseholdSize" view, which combines data on household size, asset ownership, and region for urban and rural areas in both countries.
- The specific columns used in the visualizations are likely: country, typesite, hhsize, ownlandhse, and ownhouse.
- The purpose of the report is to examine the composition of households in Ethiopia and India's rural and urban areas.
- It probably indicates variations in the distribution of household size, site types (rural or urban), ownership of land and homes, and other pertinent variables among various geographic areas.
- The paper presents a graphical depiction of the variations in household composition across rural and urban regions in both nations. Users can investigate how different settings relate to household size, asset ownership, and geographical type.

Parameters:



Two parameters or filters from a Power BI report are displayed in the image:

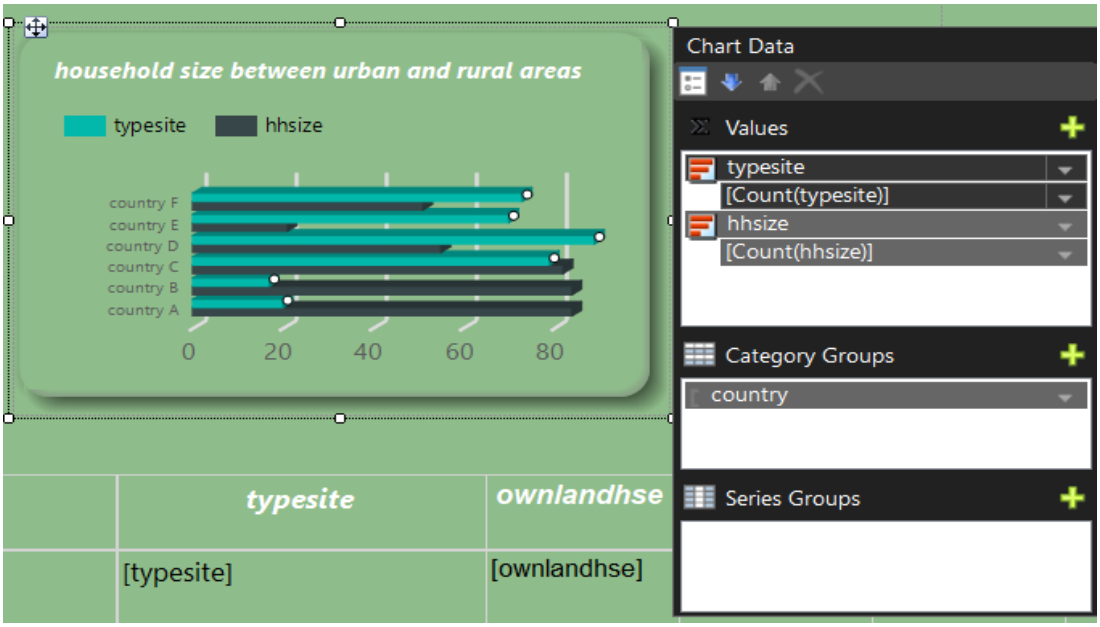
1. UR_house: Users will probably be able to filter the data according to the kind of house using this option. "Rural," "urban," "NA" (not applicable), and "Not kr" (probably a shorthand for "not known") are the alternatives that are accessible.

2. UR_house2: Using this option, users may be able to filter the data according to additional housing-related criteria, including ownership or condition. "Yes," "NA," or "not applicable," and "no" are the available choices.

By concentrating on particular subsets of the data according to the location and characteristics of the homes, these criteria can be used to personalize the report. Users might, for instance, restrict the report's data display to just include information on single-family or rural households.

❖ **Title:** "Household Size Between Urban and Rural Areas"

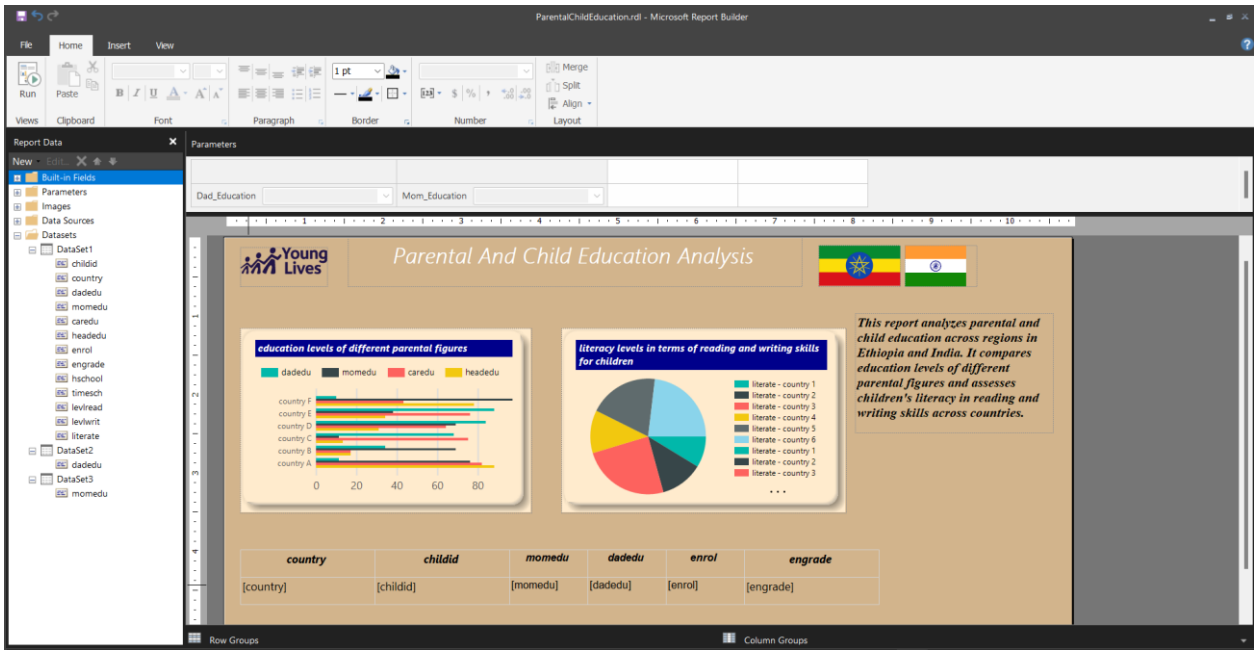
- **Visualization:** A horizontal bar chart displaying the household size for different countries, categorized by urban and rural areas.



- It looks that each country's average household size is displayed on the chart, divided into urban and rural areas.
- The various site types rural or urban are probably represented by the colors of the bars.
- All things considered, the graphic offers a visual depiction of the variations in household sizes between urban and rural regions in the nations under consideration. It makes it simple to compare the average size of households across various areas and settlement types.

03. Parental and Child Education Analysis

The attached picture is a Power BI report named "Parental and Child Education Analysis." It looks that data on parental and child education levels in Ethiopia and India are being analyzed in this paper.



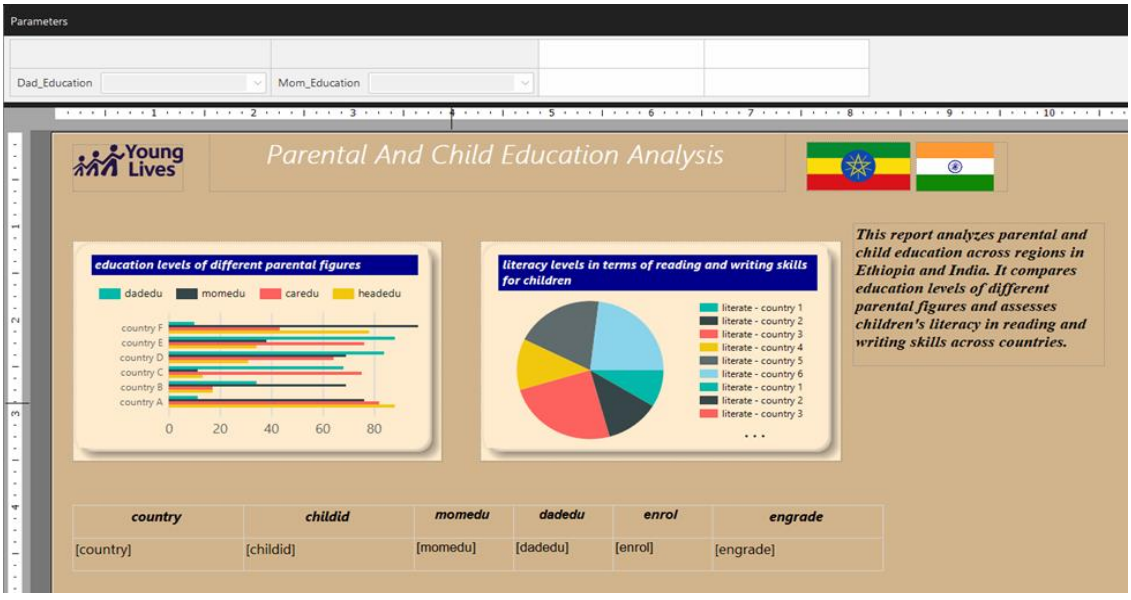
An analysis of the correlation between parental education and child education outcomes in both nations can be conducted using the aggregated dataset provided by this view. This view can be queried to investigate the relationships between children's enrollment, grades, and literacy abilities and varying parental educational attainment.Here is the code:

```sql
--3.View for Urban-Rural Household Size
-- Corrected View for Urban-Rural Household Size
CREATE VIEW UrbanRuralHouseholdSize AS
SELECT
    country,
    agemon,
    typesite,
    hhsize,
    ownhouse,
    ownlandhse,
    region
FROM
    (SELECT
        country,
        agemon,   -- agemon should come first
        typesite,
        hhsize,
        ownhouse,
        ownlandhse,
        region
     FROM
        [dbo].[India]
    UNION ALL
    SELECT
        country,
        agemon,  -- agemon should come first in Ethiopia as well
        typesite,
        hhsize,
        ownhouse,
        ownlandhse,
        region
    FROM
        [dbo].[Ethiopia]) AS CombinedData;
```

- **BEFORE RUN**

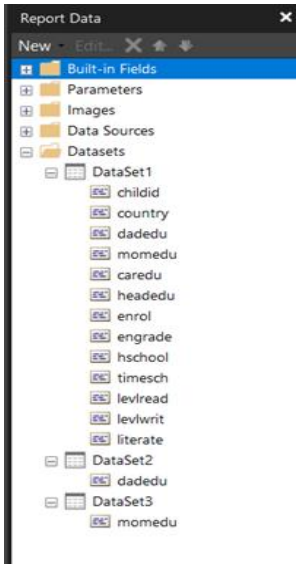
Visualizations:

- ***Bar chart:*** This chart displays the education levels of different parental figures (father, mother, caregiver, household head) for each country.
- ***Pie chart:*** This chart shows the distribution of literacy levels (reading and writing skills) among children in each country.



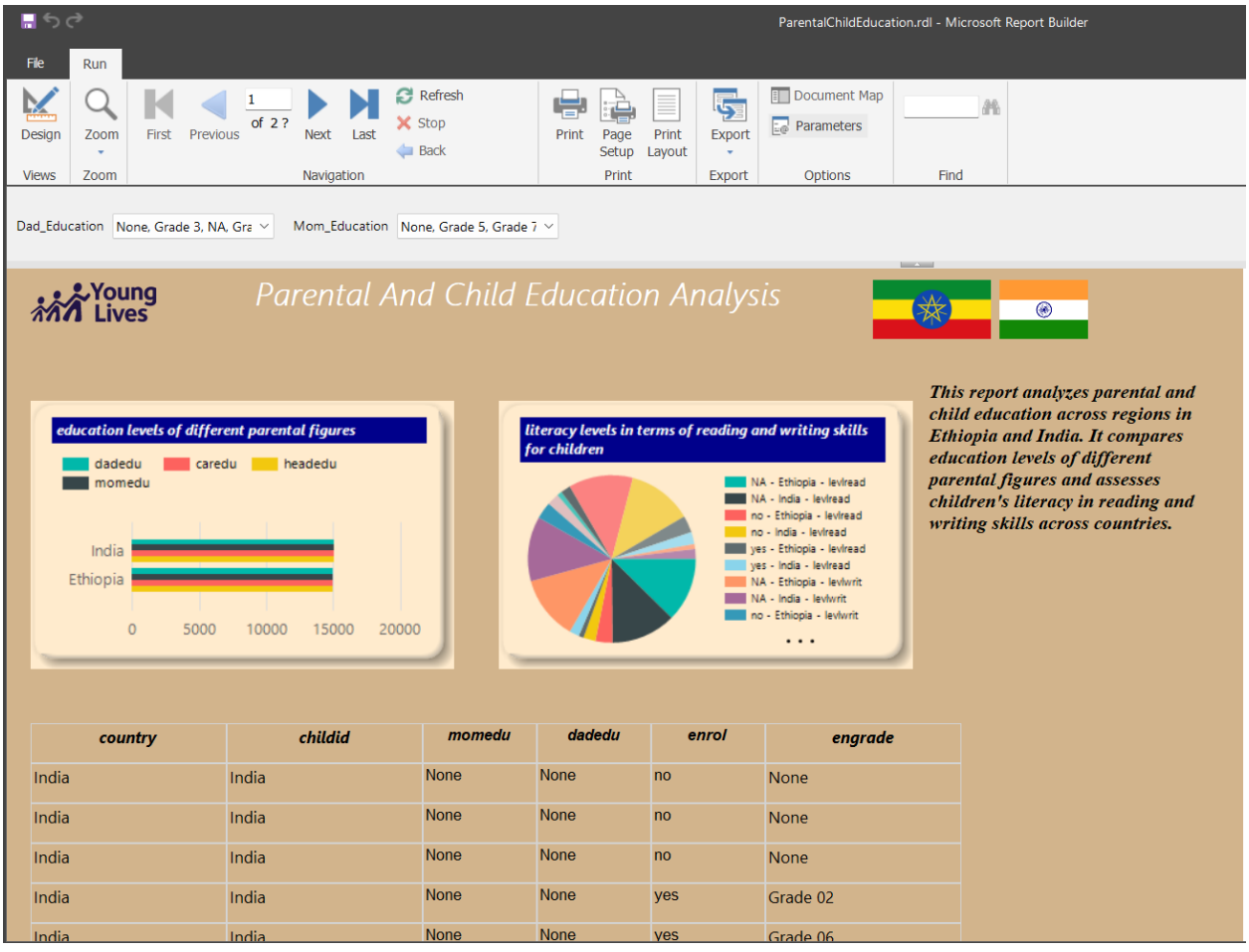
Dataset1: This dataset appears to contain data related to child education and demographics. It includes columns such as:

- ✓ childid: Unique identifier for each child
- ✓ country: Country (India or Ethiopia)
- ✓ dadedu: Father's education level
- ✓ momedu: Mother's education level
- ✓ caredu: Caregiver's education level
- ✓ headedu: Household head's education level
- ✓ enrol: Child's enrollment status
- ✓ engrade: Current grade in school
- ✓ hschool: Whether the child attends high school
- ✓ timesch: Number of times the child goes to school per week
- ✓ levlread: Child's reading level
- ✓ levlwrit: Child's writing level
- ✓ literate: Whether the child is literate

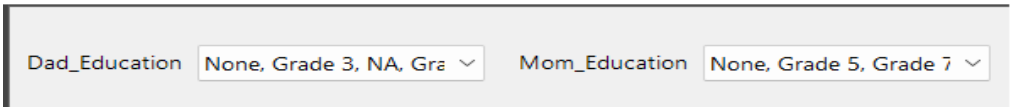


➢ ***AFTER RUN***

- The purpose of the report is to compare the educational attainment of parents and kids in India and Ethiopia.
- It probably indicates disparities in children's literacy levels between the two nations as well as in the educational backgrounds of various parental figures.
- All things considered, the research offers a graphic depiction of the connection between parental education and the educational achievements of their children.
- Users can investigate how parental education affects their children's literacy and educational attainment.



Parameters:



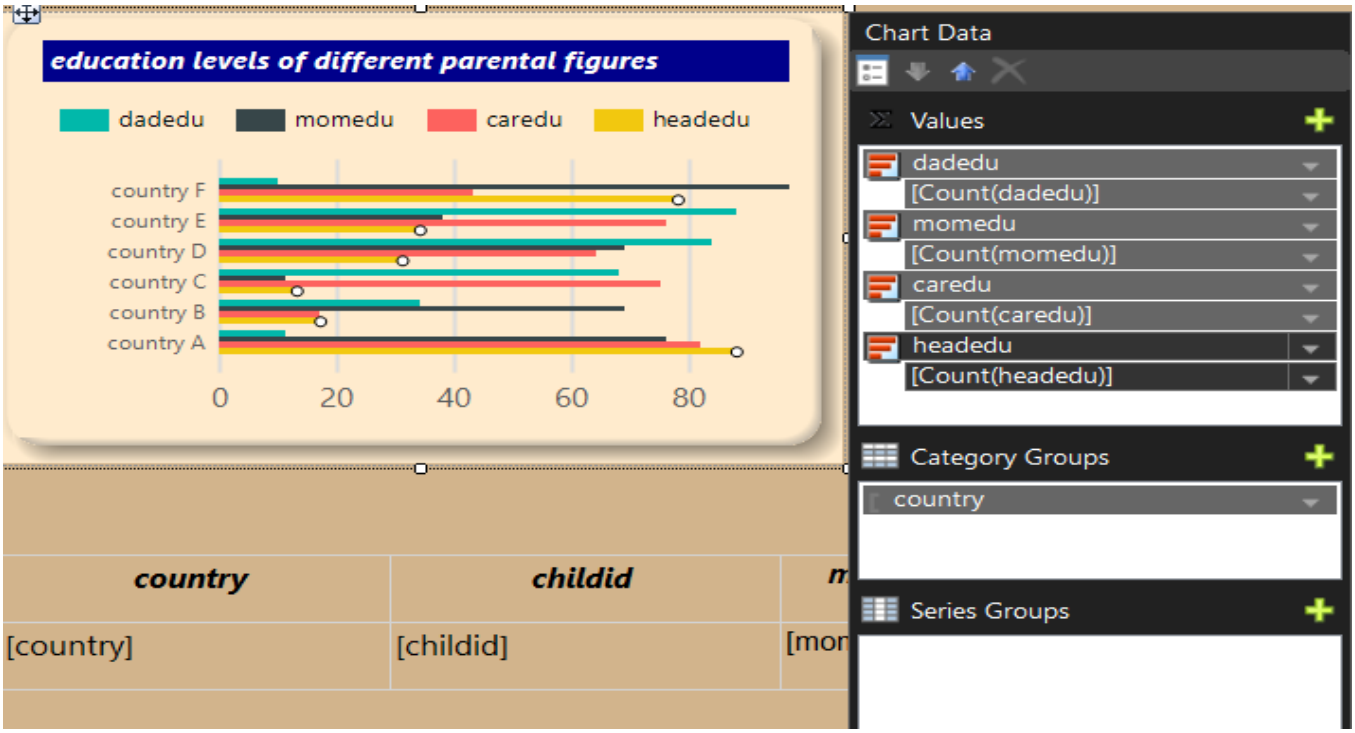
Two parameters or filters from a Power BI report are displayed in the image:

1. ***Education of Dad:*** **It** is possible for users to filter the data according to the father's educational background using this parameter. "None," "Grade 3," "NA," and "Gra" (perhaps an acronym for "Grade") are the alternatives that are offered.

2. Mom's Education: Users may be able to filter the data according to the mother's educational attainment using this option. "None," "Grade 5," "Grade 7," and perhaps other alternatives are available.

With the use of these criteria, the report can be made more unique by concentrating on particular data sets depending on the parents' educational backgrounds. Users might, for instance, restrict the report's data display to homes in whom both parents had attained a particular educational level.

- **Title:** "Education Levels of Different Parental Figures"
- **Visualization:** A horizontal bar chart displaying the education levels of each parental figure for different countries

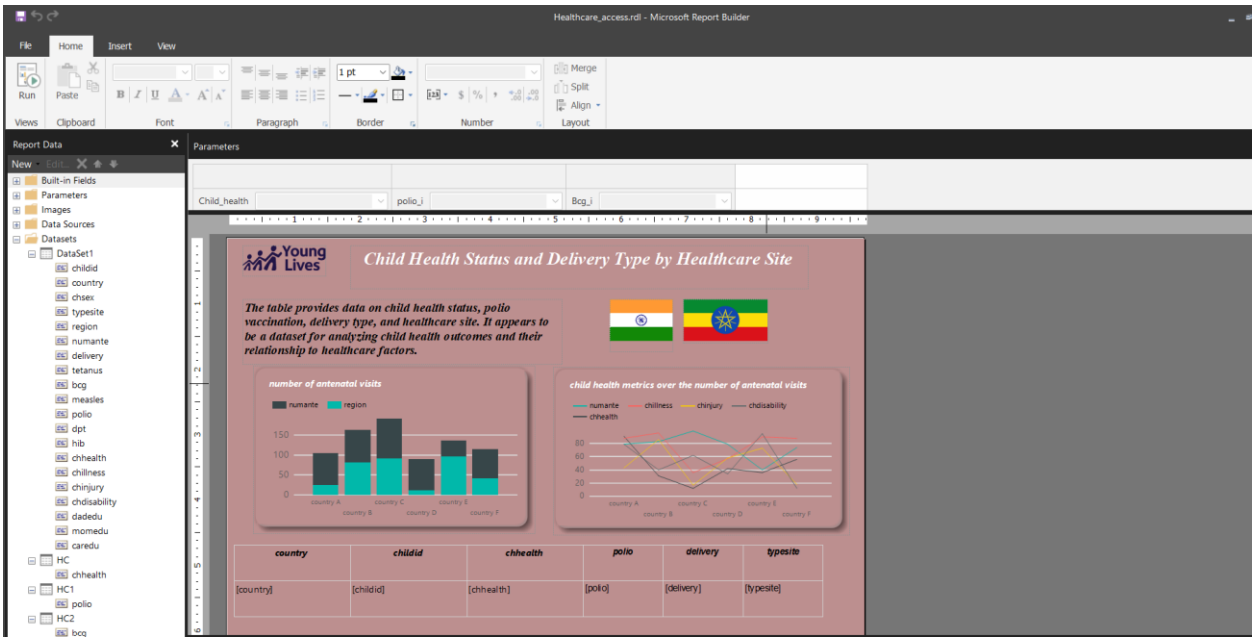


- It looks that the chart is set up to display the number of parents in each educational level for various nations.
- The various parental figures are probably represented by the colors of the bars.
- All things considered, the graph offers a visual depiction of the distribution of parental education levels among various parental figures and throughout various nations.

- It makes it simple to compare the educational backgrounds of mothers, dads, caregivers, and heads of households across national boundaries.

04. Child Health Status and Delivery Type by Healthcare Site

The image that has been provided is a Microsoft Report Builder report with the title "Child Health Status and Delivery Type by Healthcare Site." It looks that data on child health outcomes and their connections to healthcare variables are being analyzed in this paper.



- ***BEFORE RUN***

Illustrations:

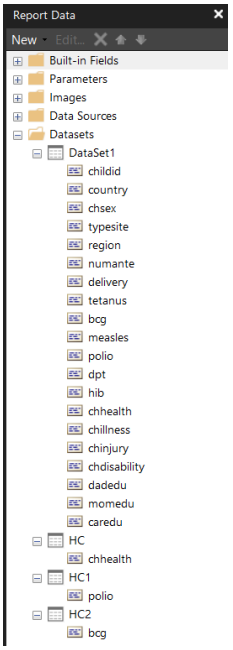
Bar chart: This diagram most likely shows the total number of kids in each of the three health categories (disability, illness, and mortality) at different medical facilities.
Line chart: This figure most likely illustrates the trajectory of child health indicators (disease, death, and disability) relative to the number of prenatal visits.

```
--4.Create view forHealthcare Access and Child Health Outcomes
CREATE VIEW Healthcare_access AS
SELECT
    childid,
    country,
    chsex,
    typesite,
    region,
    numante,  -- Number of antenatal visits
    delivery, tetanus, bcg, measles, polio, dpt, hib,  -- Immunizations
    chhealth, chillness, chinjury, chdisability,  -- Child health metrics
    dadedu, momedu, caredu  -- Parental/Caregiver education levels
FROM
    [dbo].[India]
UNION ALL
SELECT
    childid,
    country,
    chsex,
    typesite,
    region,
    numante,
    delivery, tetanus, bcg, measles, polio, dpt, hib,
    chhealth, chillness, chinjury, chdisability,
    dadedu, momedu, caredu
FROM
    [dbo].[Ethiopia];
```

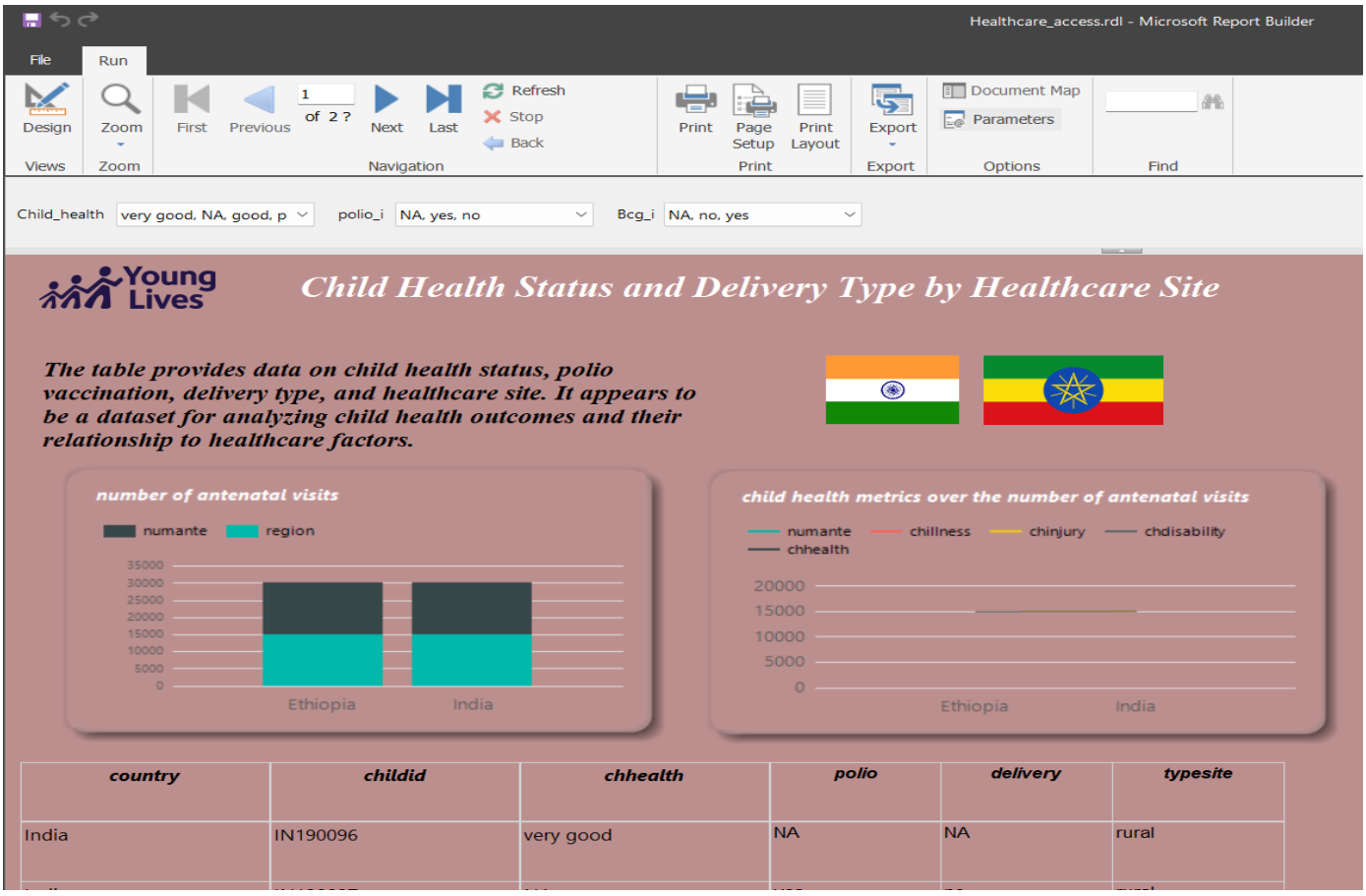
These points of view can be used to examine many facets of child well-being and pinpoint connections between different elements, such as the effect that healthcare access has on the health outcomes of children or the connection between home economic issues and malnutrition.

Dataset1: This dataset appears to contain data related to child health and healthcare access. It includes columns such as:

- childid: Unique identifier for each child
- country: Country (India or Ethiopia)
- chsex: Child's sex
- typesite: Urban or rural location
- region: Geographic region
- numante: Number of antenatal visits
- delivery: Delivery type
- tetanus, bcg, measles, polio, dpt, hib: Immunization status
- chhealth: Child's overall health
- chillness, chinjury, chdisability: Child health conditions
- dadedu, momedu, caredu: Parental/caregiver education levels

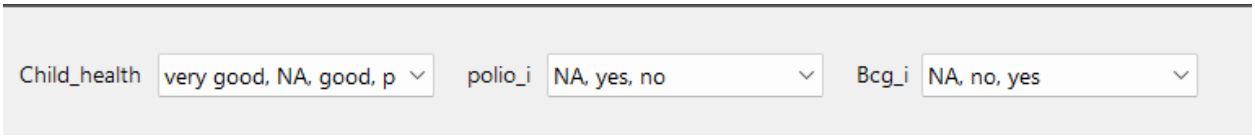


➢ ***AFTER RUN***



- The purpose of the paper is to show how healthcare variables including the kind of birth, the location of the facility, and the quantity of prenatal visits relate to child health outcomes (death, illness, and disability).
- It probably shows differences in child health outcomes between areas, medical professionals, and modes of delivery.
- All things considered, the report offers a graphic depiction of how healthcare variables affect children's health.
- It enables users to investigate the connections between various factors and pinpoint places where greater healthcare delivery or access may enhance the health of children.

Three parameters, or filters, are displayed in a Power BI report in the image provided:

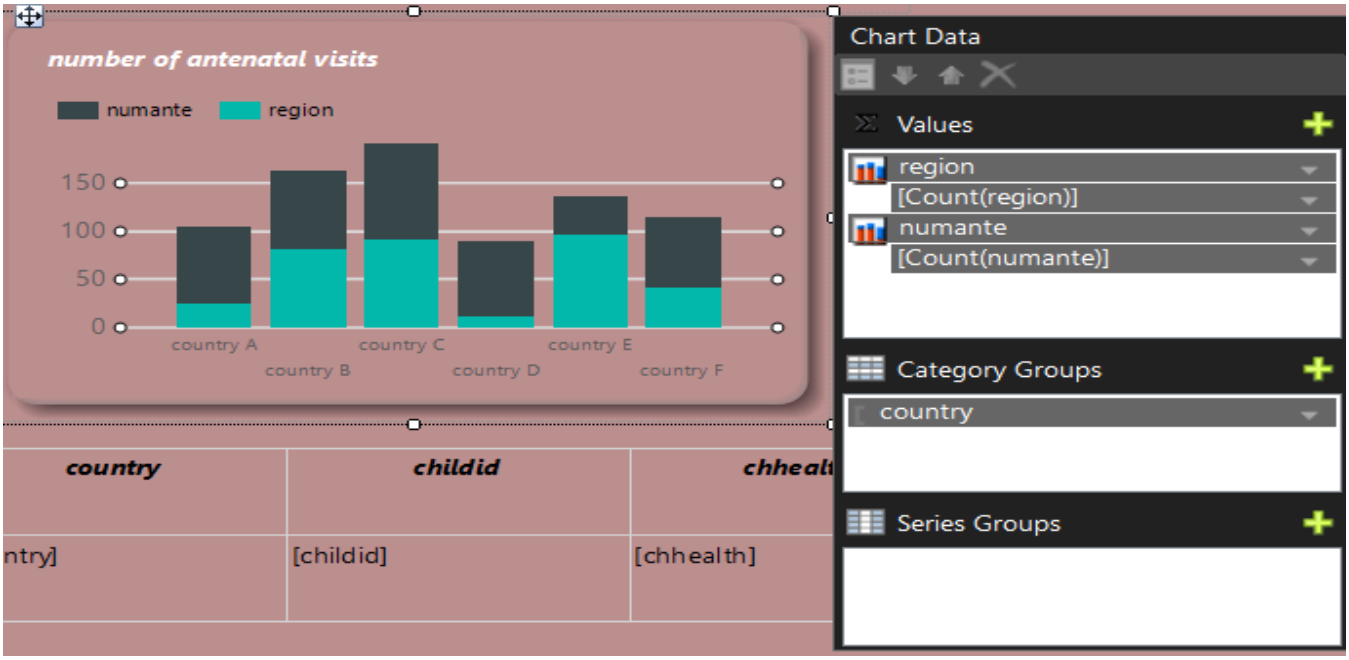


1. Child_health:This parameter likely allows users to filter the data based on the child's general health status. "Very good," "NA," "good," and "p" (which can stand for "poor") are the alternatives.
2. polio_i: Depending on the child's status as a polio vaccine recipient, this option may enable users to filter the data. The choices that are accessible are "no," "yes," and "NA."
3. Bcg_i: This parameter probably enables users to filter the information according to the BCG vaccination status of the child. The choices that are offered are "yes," "no," and "NA."

Utilizing these criteria allows you to personalize the report by highlighting particular data subsets according on the child's immunization history and overall health. For example, users could filter the report to only show data for children who are not vaccinated against polio or BCG.

Title: "Number of Antenatal Visits"

Visualization: A bar chart displaying the number of antenatal visits for each country.



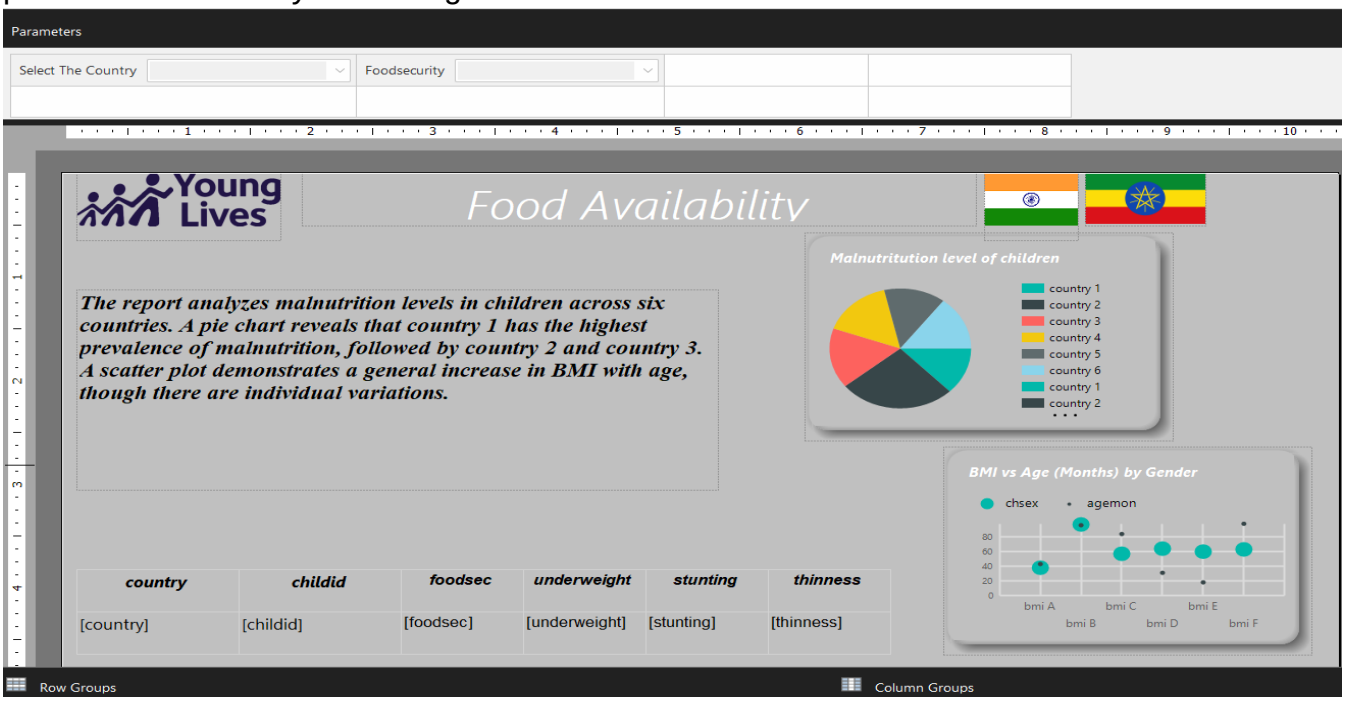
- ❖ The configuration of the chart seems to be set up to display the number of numante for every country, sorted by area.
- ❖ It is possible that the bars' hues correspond to various regions.
- ❖ All things considered, the graph offers a visual depiction of the quantity of prenatal visits in various nations.
- ❖ It makes it simple to compare how each region's healthcare is accessed and used.

05. Food Availability

The Power BI report named "Food Availability" is seen in the attached image. It looks as statistics on childhood malnutrition rates in six different nations are being analyzed for this research. The purpose of this report is to examine the economic effects of malnutrition in Ethiopia and India, two nations where there are notable differences in the health of children. This analysis aims to comprehend the underlying causes of malnutrition and its wider consequences for economic development by looking at the relationship between malnutrition indicators, household assets, and demographic factors.

- ➢ ***BEFORE RUN***

The Young Lives project, a longitudinal study that has been following children's lives in several developing nations, including Ethiopia and India, provided data for the report. We can learn a great deal about the intricate interactions that exist between economic conditions, hunger, and other pertinent variables by examining this extensive dataset.



Illustrations:

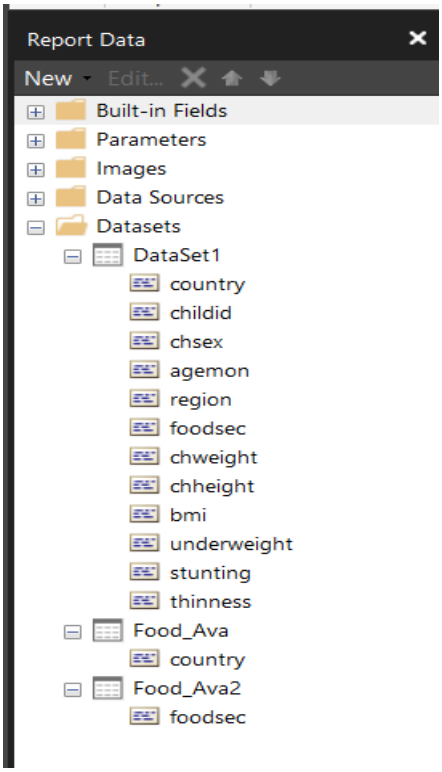
Pie chart: This graphic shows the incidence of malnutrition in various nations.
Scatter plot: This plot shows the association between a child's age (measured in months) and gender-specific BMI (body mass index).

This view offers a combined dataset that can be used to examine how food security and indices of child growth relate to each other in both nations. You can query this view to investigate the relationships between child development metrics such as height, weight, and other growth metrics with varying degrees of food security.

```sql
--Create Views
--1.View for food security and child growth metrics
CREATE VIEW FoodSecurityChildGrowth AS
   SELECT
       country,
       childid,
       chsex,
       agemon,
       region,
       foodsec,
       chweight,
       chheight,
       bmi,
       underweight,
       stunting,
       thinness
   FROM
       (SELECT 'India' AS  country,childid,chsex,agemon, region,foodsec, chweight, chheight, bmi, underweight, stunting, thinness FROM [dbo].[India]
        UNION ALL
        SELECT 'Ethiopia' AS country, childid,chsex,agemon,region,foodsec, chweight, chheight, bmi, underweight, stunting, thinness FROM [dbo].[Ethiopia]) AS CombinedData;
```

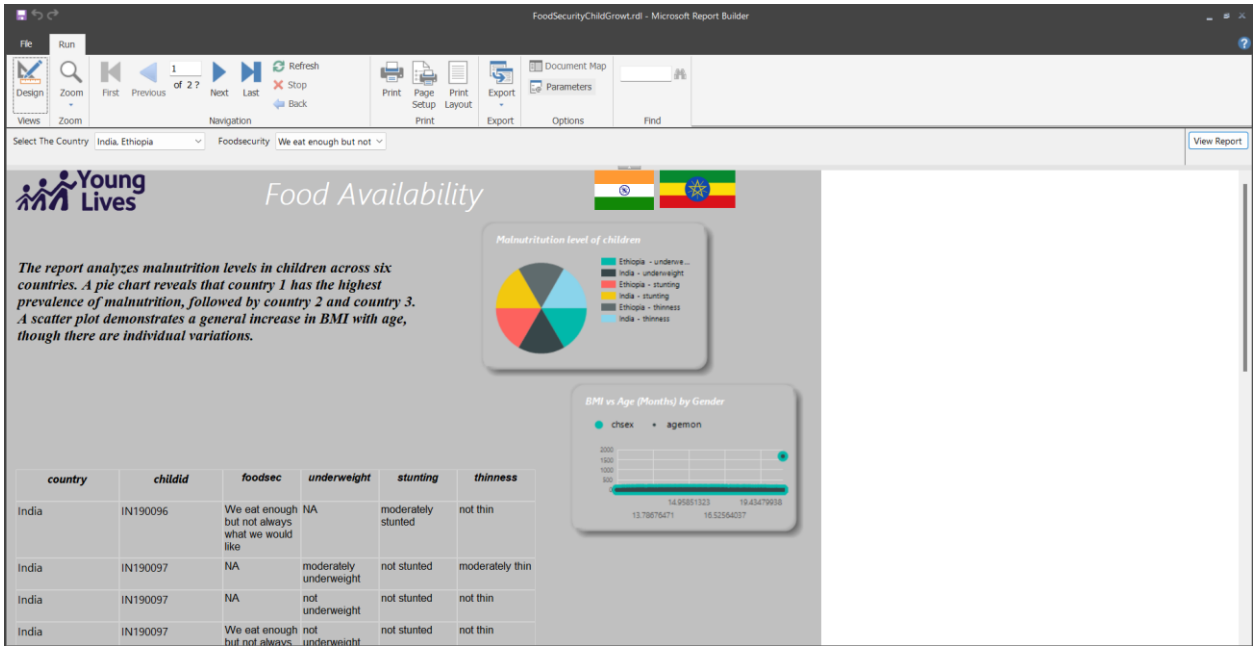
Dataset1: This dataset appears to contain data related to child health, demographics, and food security. It includes columns such as:

- country: Country (India or Ethiopia)
- childid: Unique identifier for each child
- chsex: Child's sex
- agemon: Age of the child in months
- region: Geographic region
- foodsec: Food security status
- chweight: Child's weight
- chheight: Child's height
- bmi: Body Mass Index
- underweight: Underweight status
- stunting: Stunting status
- thinness: Thinness status

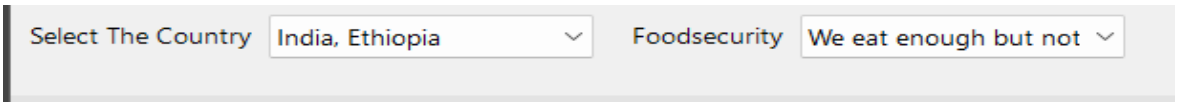


➢ ***AFTER RUN***

The purpose of the report is to show how food security and child malnutrition relate to one another in various nations. It probably shows differences in the severity of malnutrition as well as how age and gender affect BMI. All things considered, the study offers a graphic depiction of the connection between the availability of food and undernourishment in children. Users can investigate the ways in which various factors like gender, age, and country affect the prevalence of malnutrition.



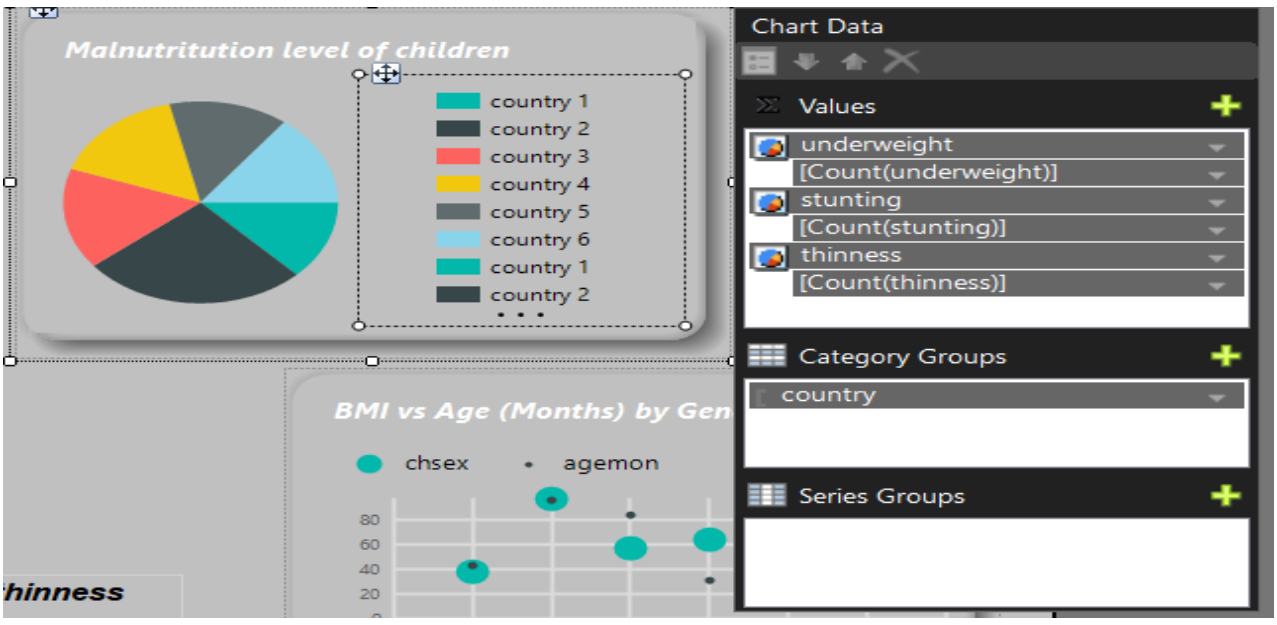
Two parameters or filters from a Power BI report are displayed in the image provided:



1.

- ***1.Choose Your Nation:*** Users may be able to filter the data according to the chosen country with this parameter. Two possibilities are available: "India" and "Ethiopia."
  2. Safety of Food: Users may be able to filter the data according to the degree of food security by using this option. The option that is now displayed is "We eat enough but not," but there may be further possibilities.
  You may use these criteria to tailor the report by highlighting particular data subsets according on the nation and degree of food security. Users have the option to restrict the report's data to just include information for India or households with a certain degree of food insecurity.

- **Title:** "Malnutrition Level of Children"
- **Visualization:** A pie chart with six slices, each representing a different country

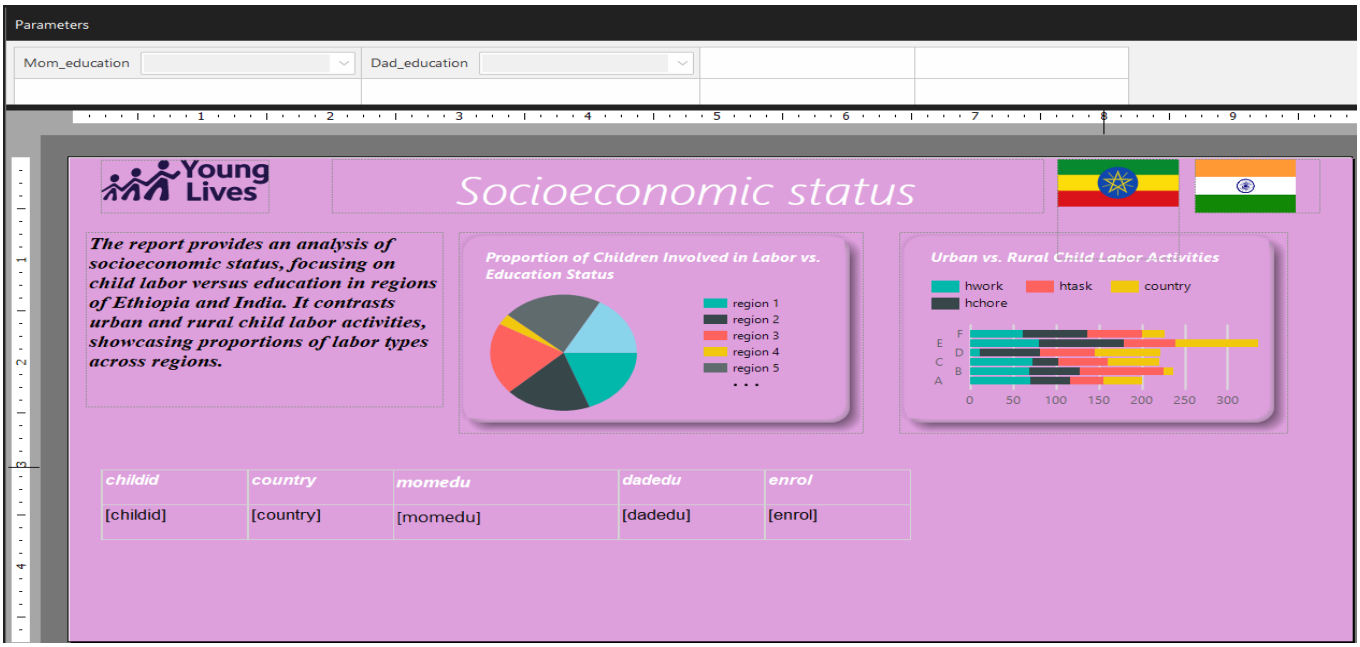


- ❖ It looks that each country's count of each malnutrition indicator is displayed on the chart.
- ❖ The slices' colors most likely correspond to several nations.
- ❖ All things considered, the graph offers a visual depiction of the frequency of various malnutrition markers throughout the six nations.
- ❖ It makes it simple to compare the percentages of underweight, stunted, and thin children in each nation.

6. Socioeconomic Status and Child Labor in Ethiopia and India

This study examines the intricate relationships that exist between Ethiopian and Indian child labor laws, social level, and education. We seek to comprehend the factors impacting children's labor participation and educational outcomes in various geographic and socioeconomic situations by analyzing data from the Young Lives project.

- ➢ ***BEFORE RUN***



The study contrasts child labor practices in urban and rural areas of both nations, emphasizing the percentages of children involved in different kinds of work. It also examines the connection between children's school enrollment and their socioeconomic standing, as determined by the educational attainment of their parents.

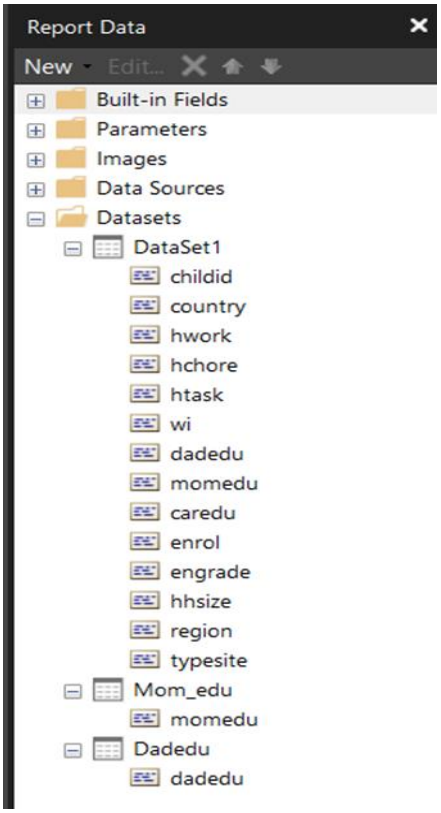
This approach offers a combined dataset that may be utilized to examine the connections between socioeconomic variables, demographic traits, and child labor in both nations. You can query this view to investigate the relationships between children's employment and variables such as wealth, education, and household size.

```sql
--7.Child Labor and Socioeconomic Status
CREATE VIEW Child_labor_socioeconomic AS
SELECT
    childid,
    country,
    hwork,          -- Child's involvement in work (yes/no)
    hchore,         -- Household chores (yes/no)
    htask,          -- Task responsibilities (yes/no)
    wi,             -- Wealth index
    dadedu,        -- Father's education level
    momedu,        -- Mother's education level
    caredu,         -- Caregiver's education level
    enrol,          -- Child's enrollment status
    engrade,        -- Current grade in school
    hhsize,         -- Household size
    region,         -- Geographic region
    typesite        -- Urban or rural classification
FROM
    [dbo].[India]
UNION ALL
SELECT
    childid,
    country,
    hwork,
    hchore,
    htask,
    wi,
    dadedu,
    momedu,
    caredu,
    enrol,
    engrade,
    hhsize,
    region,
    typesite
FROM
    [dbo].[Ethiopia];
```

Dataset1: This dataset appears to contain data related to child labor, socioeconomic status, and demographics. It includes columns such as:

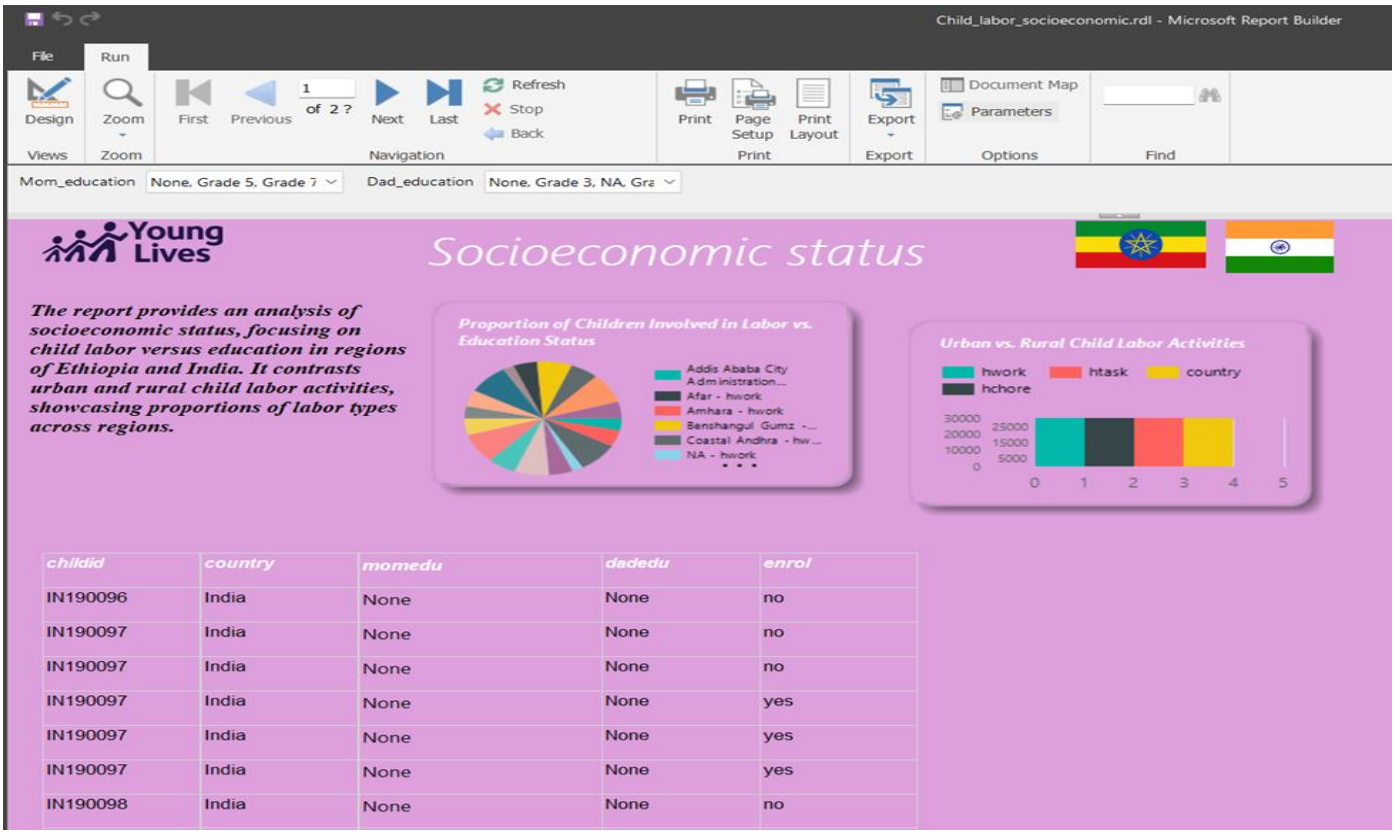
- childid: Unique identifier for each child
- country: Country (India or Ethiopia)
- hwork: Whether the child is involved in work
- hchore: Whether the child does household chores
- htask: Whether the child has task responsibilities
- wi: Wealth index
- dadedu: Father's education level
- momedu: Mother's education level

- caredu: Caregiver's education level
- enrol: Child's enrollment status
- engrade: Current grade in school
- hhsize: Household size
- region: Geographic region
- typesite: Urban or rural classification



➢ ***AFTER RUN***

- With an emphasis on child labor and education, the research compares the socioeconomic conditions of children in Ethiopia and India.
- It probably shows variations in the frequency of child labor, the kinds of labor activities that are performed, and the connection between socioeconomic status and academic performance.
- All things considered, the report offers a graphic depiction of the socioeconomic standing of youngsters in Ethiopia and India. Users can investigate the relationship between parental education levels, child labor, and education in various scenarios and geographical areas.

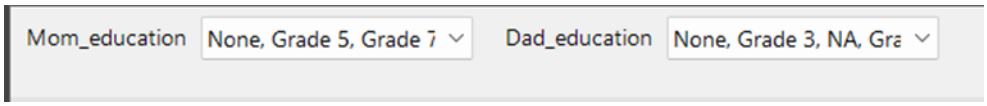


Visualizations:

Pie chart: This chart displays the proportion of children involved in labor in different regions of Ethiopia and India.

Bar chart: This chart shows the distribution of child labor activities (hwork, hchore, htask) in urban and rural areas of both countries.

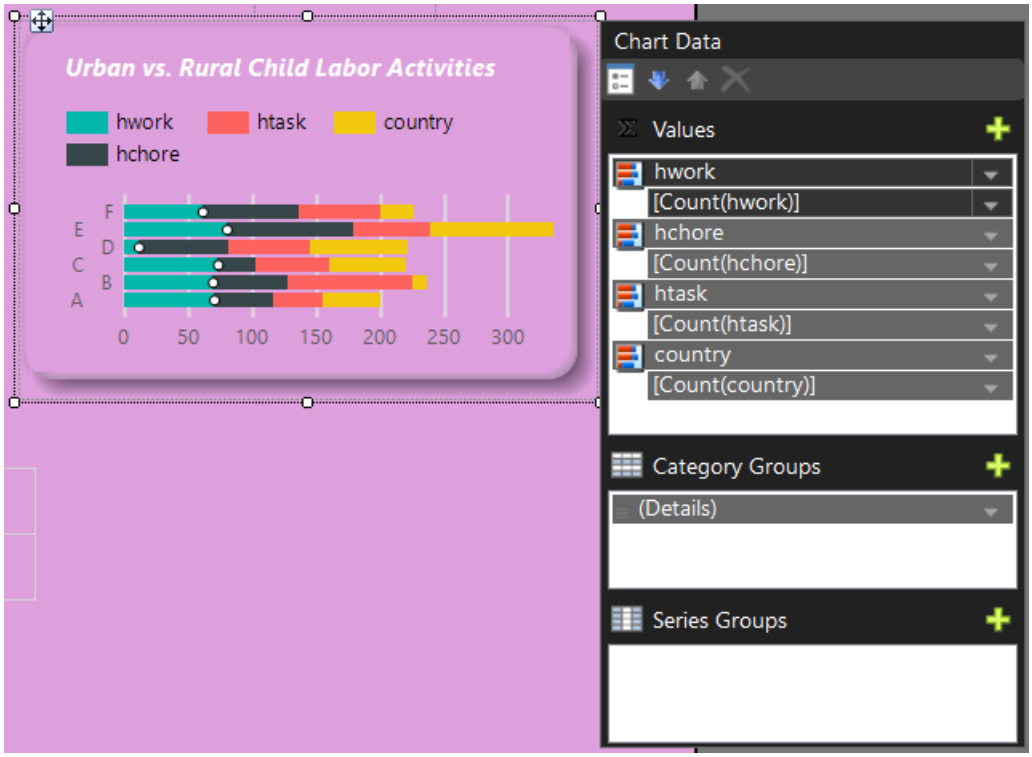
Two parameters or filters from a Power BI report are displayed in the image provided:



1. Education of Mom: Users can probably filter the data using this option according to the mother's educational background. "None," "Grade 5," "Grade 7," and perhaps other alternatives are available.

2. Education of Dad:Users may be able to filter the data according to the father's educational background using this parameter. "None," "Grade 3," "NA," and "Gra" (perhaps an acronym for "Grade") are the alternatives that are offered.

With the use of these criteria, the report can be made more unique by concentrating on particular data sets depending on the parents' educational backgrounds. Users might, for instance, restrict the report's data display to homes in whom both parents had attained a particular educational level.



- It looks that each region's count of child labor activities is displayed on the chart.
- The various colors of the bars most likely correspond to various forms of child labor.
- All things considered, the graph offers a visual depiction of the frequency of various forms of child labor in both urban and rural regions. It makes it simple to compare the percentages of kids working in different kinds of jobs in various geographical areas.

1.6 CONCLUSION

Using information from the Young Lives project, this paper has offered a thorough examination of the economic effects of malnutrition in Ethiopia and India. We have obtained important insights into the complex issues these countries face by looking at the links between nutritional indices, household assets, child labor, and education.

The main conclusions show that, although there are geographical differences, malnutrition is still a serious public health issue in Ethiopia and India. Household economic considerations have a major impact on child health and malnutrition rates, including access to basic supplies. Child labor has a detrimental effect on children's education and development, particularly in rural areas. Furthermore, the education of parents has a significant impact on how well children will do in school and in the job market in the future.

Strengthening healthcare systems to increase access to services like antenatal care and nutrition education, encouraging social safety nets to support vulnerable households, and funding education to improve outcomes for malnourished children are the suggested policy interventions to address malnutrition in Ethiopia and India. Fair prospects for all children also depend on tackling socioeconomic inequalities and minimizing child labor. By putting these strategies into practice, we may lessen child malnutrition, enhance child health, and advance sustainable economic growth.

TASK 02 : REPORT OF POWER BI DASHBOARD DESIGN

2.1 INTRODUCTION

Energy efficiency is now a key area of concentration for those trying to slow down global warming and cut carbon emissions. An important instrument in this endeavor is the Energy Performance Certificate (EPC), which offers a rating system for evaluating the energy efficiency of both residential and commercial buildings. EPCs provide information about a building's energy consumption and make recommendations for upgrades to increase efficiency, with A being the most efficient and G being the least efficient. The primary goal of this project is to provide valuable insights that can assist stakeholders in enhancing energy efficiency and supporting environmental policies. To that end, it will analyze and visualize EPC data from Greater Manchester's local authorities from 2013 to 2023.

2.2 EXPLORING THE DATA SET

The collection includes comprehensive data on Greater Manchester properties' energy performance. Among the dataset's important fields are:

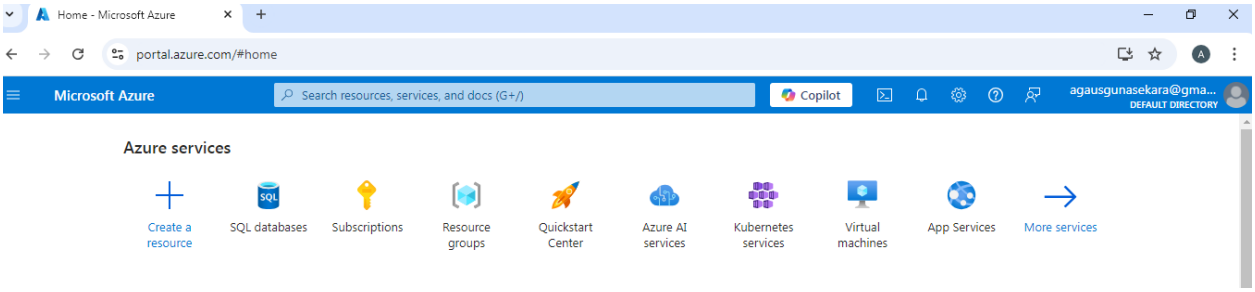
- Property Type: Details regarding the building's use as a residential or commercial space (e.g., detached house, flat, office).
- Energy Rating: The energy efficiency of the building is indicated by the EPC rating, which runs from A to G.
- Heating Type: The kind of heating system (gas or electric) that is installed on the property.
- Information regarding the installed insulation, which has an impact on energy efficiency.
- Emissions Rating: The price of consuming energy both now and in the future.

2.3 IMPORTING THE DATASET AND IMPLEMENTATION

<u>Creating a database in Azure cloud storage.</u>

First you need to login to the Microsoft azure portal using your email.

In the Azure portal, select ＋ Create a resource from the upper left-hand corner and search for Azure SQL. Then in the resulting Azure SQL page, select Create



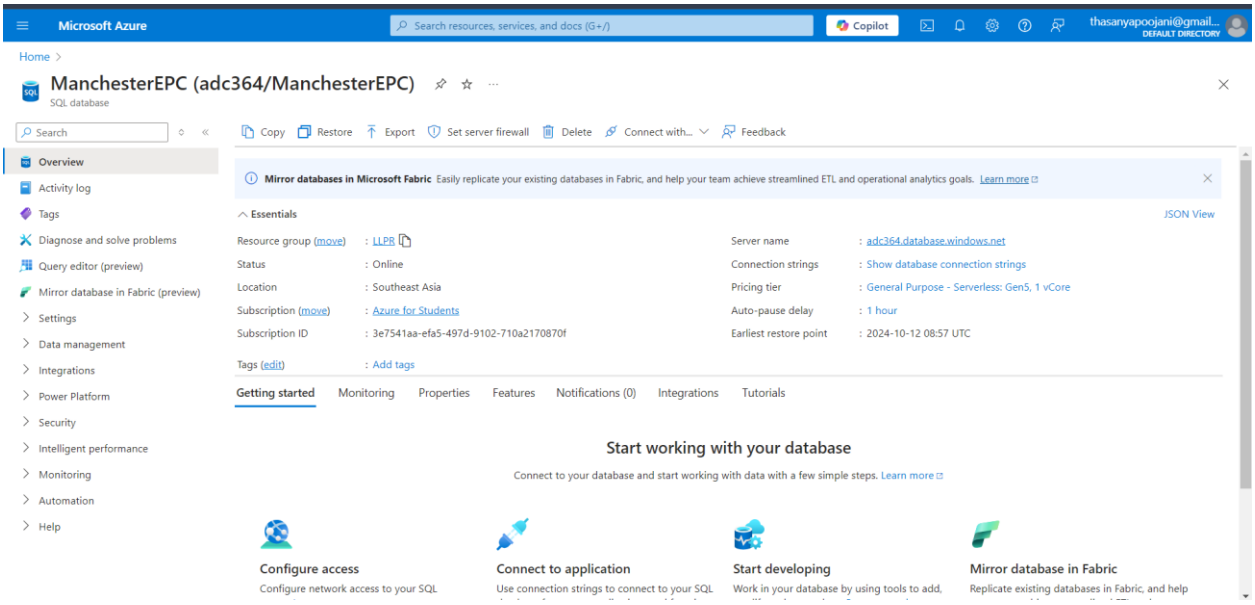
Enter the following values on the Create SQL Database page, and leave all other properties with their default setting:

- Subscription: Select your Azure subscription. (Azure for students)
- Resource group: Create a new resource group with a name of your choice. (adc364)
- Database name: ManchersterEPC
- Server: Select Create new and create a new server with a unique name in any available location. (login : poojani, password : 2002adc#)
- Want to use SQL elastic pool? : No
- Workload environment: Development

- Compute + storage: Leave unchanged
- Backup storage redundancy: Locally-redundant backup storage

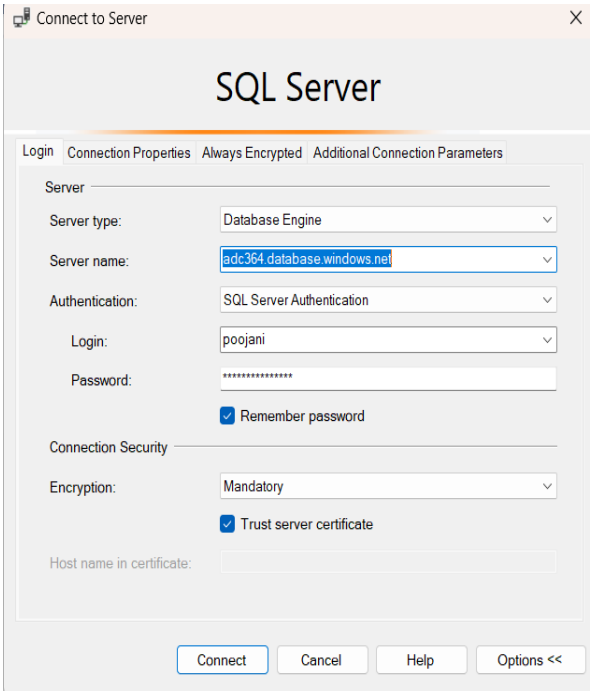
Select Review + Create, and then select Create to create your Azure SQL database.

Wait for process to complete. Then go to the resource that was deployed, which looks as follows.



Connecting the created Database to SQL Server Management Studio (SSMS).

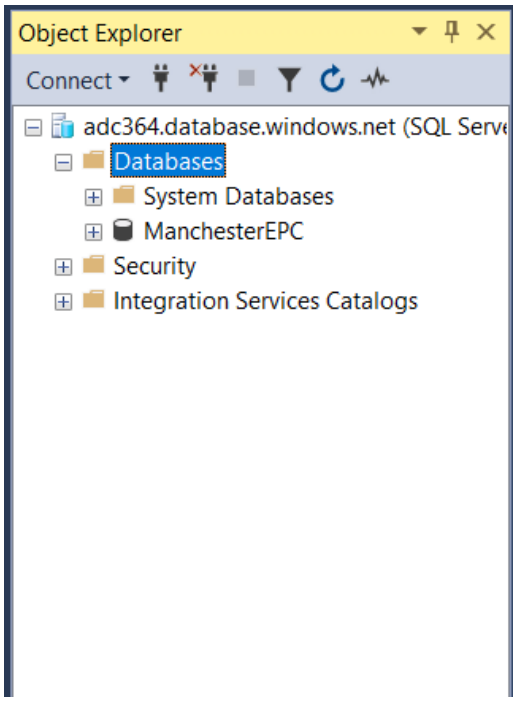
Open the SSMS and connect to server as follows.



Enter the server name correctly and select SQL Server Authentication in Authentication box.

Enter your login name and password there and connect to the server. (Make sure you have verify the trust server certificate box before connect.)

After connected to the server, you can see our created database “ManchesterEPC”.

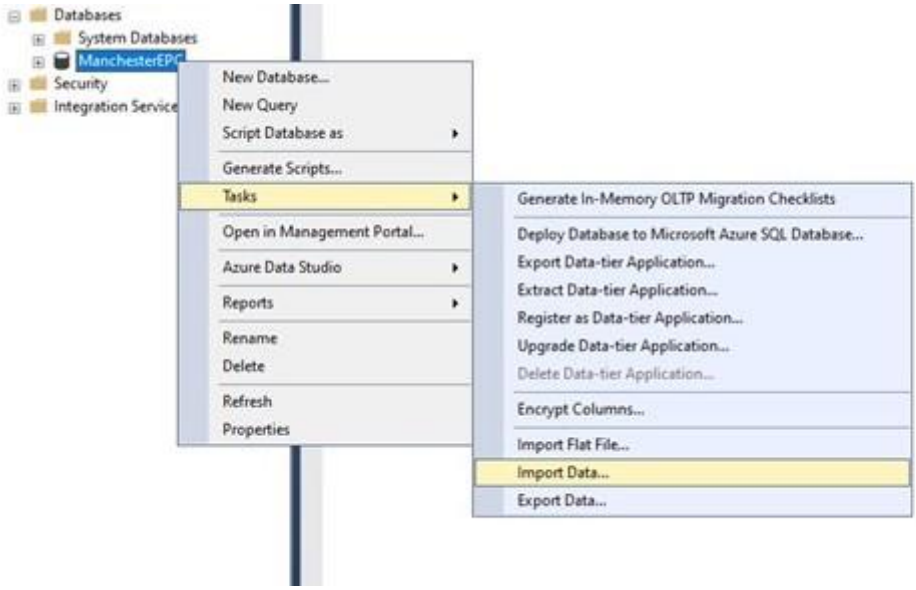


***Importing Data from Excel to Microsoft SQL Server Database*.**

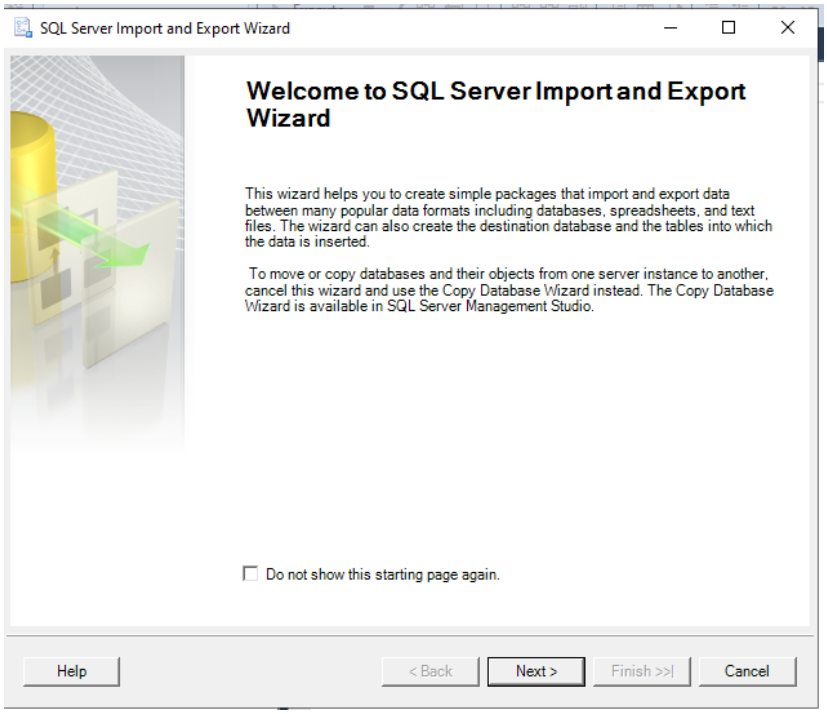
Import the CSV file to the SQL server database “ManchesterEPC”.

a) Right-click the ‘ManchesterEPC’ database.

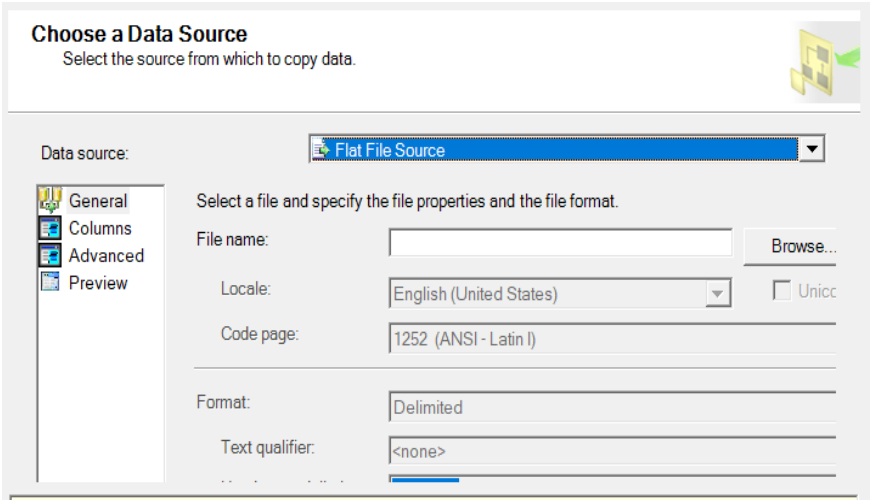
b) Select Tasks → Import Data



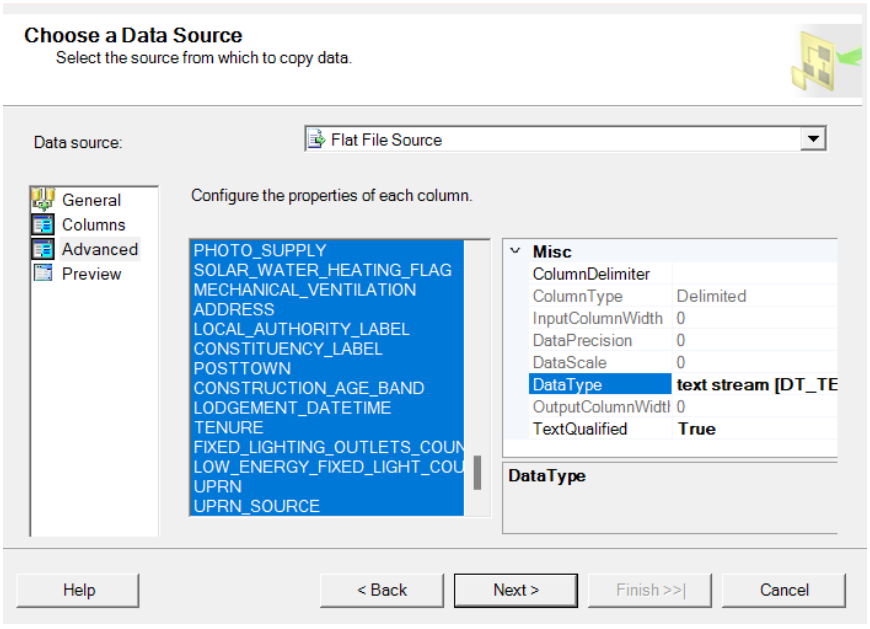
c) Click Next on the SQL Server Import and Export Wizard welcome page.



d) Select Flat File Source as the Data Source, and enter or browse for the file to import.



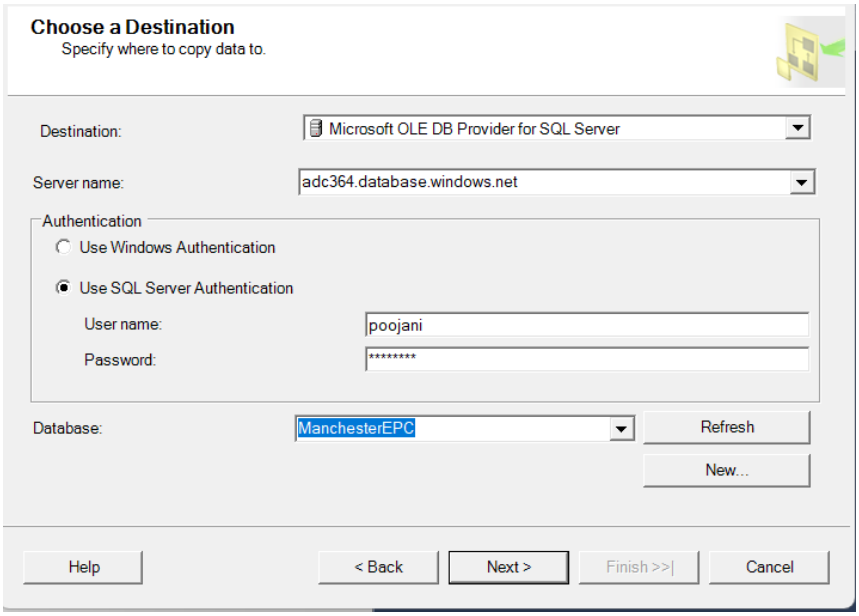
e) Go to the Advanced tab and change the datatype from string to text and click Next,



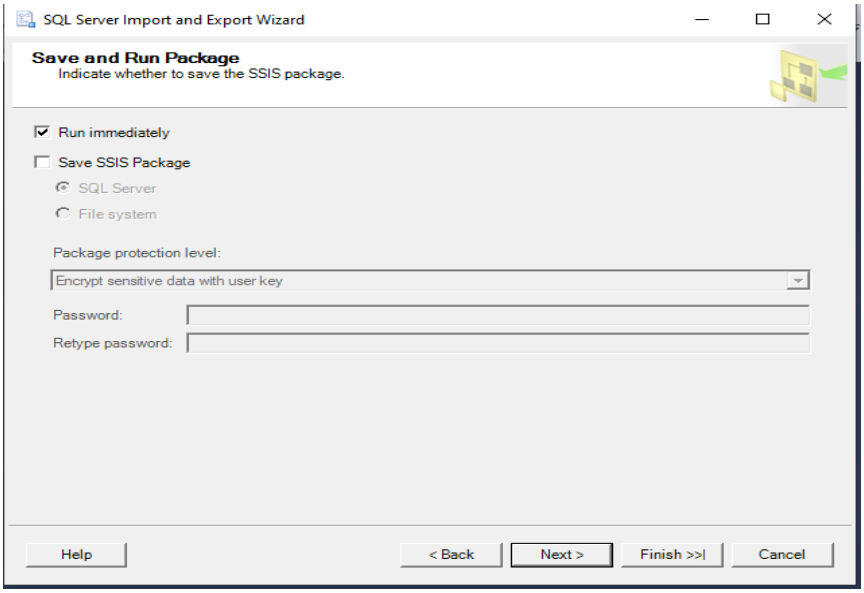
f) Select Microsoft OLE DB Provider for SQL Server and enter the server name there.

Select SQL Server Authentication and enter the username and password correctly.

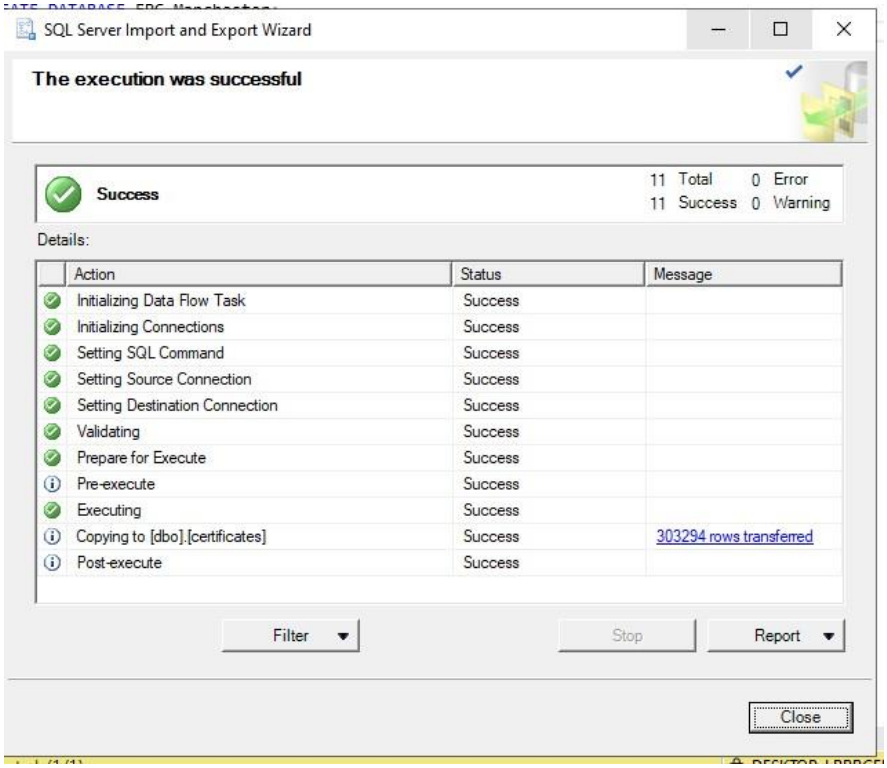
Then click next.



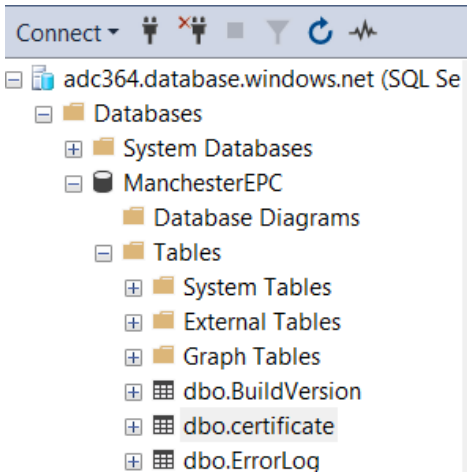
g) Accept the default and click next.



h) Click Finish.

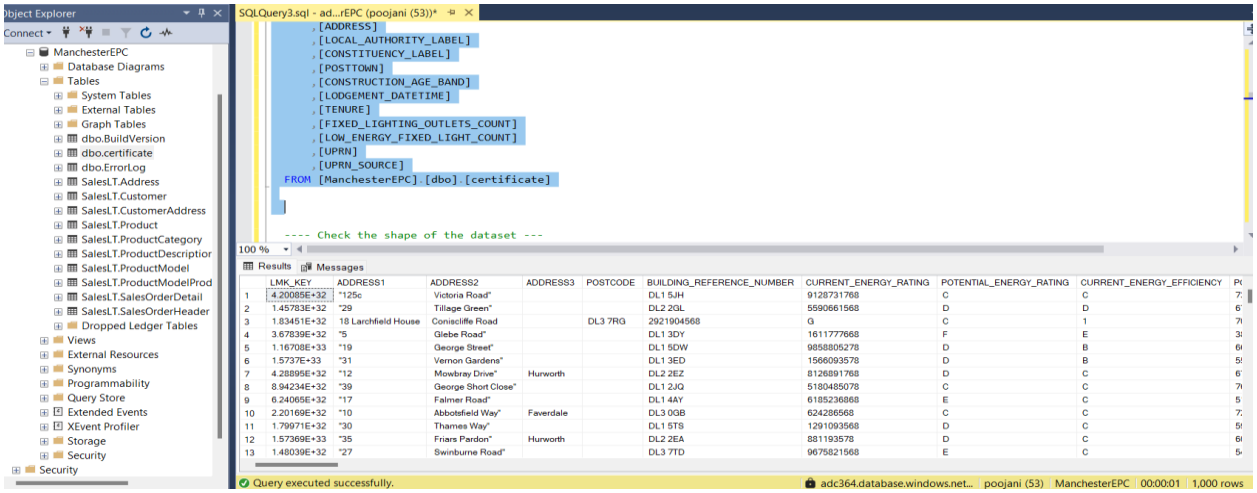


i) The Execution Results dialog box appears. Assuming that all went well, the data has loaded successfully. After we can see the new table ‘dbo.certificate’ in the ‘ManchesterEPC’ database.



Cleaning the data

Under a new query, enter the following code to clean the ‘dbo.certificate’ dataset.



```
SQLQuery3.sql - ad...rEPC (poojani (53))*
    FROM [ManchesterEPC].[dbo].[certificate]


    ---- Check the shape of the dataset ---
select count([LMK_KEY])
from [dbo].[certificate]

select count(UPRN_SOURCE)
from [dbo].[certificate]
```

```
--First we have to clean the dataset, here are the steps---
---Step01- Creat a same dummy of dataset. Because if we have an issue during the cleaning process we have the raw dataset--

-- Create a copy of the layoffs table structure (without data)
-- Create the certificates_staging table in the dbo schema with the same structure as certificates
SELECT TOP 0 *
INTO [dbo].[certificate_staging]
FROM [dbo].[certificate];
```

```
-- Insert data from the original layoffs table into the staging table
INSERT INTO [dbo].[certificate_staging]
SELECT *
FROM [dbo].[certificate]
```

```
--- Step01---
--- Remove duplicates----

SELECT *
FROM (
    SELECT [LMK_KEY],[LOCAL_AUTHORITY],
        ROW_NUMBER() OVER(
            PARTITION BY [LMK_KEY]
            ORDER BY [LMK_KEY]
            ) AS row_num
    FROM [dbo].[certificate_staging]

) duplicates
WHERE
    row_num > 1;
```

```
---step 02 ---
--- Drop unnecessary columns in the dataset ----

ALTER TABLE [dbo].[certificate_staging]
DROP COLUMN [ADDRESS1],[ADDRESS2],[ADDRESS3],[CONSTITUENCY],[COUNTY],[LOCAL_AUTHORITY],[FLOOR_LEVEL],[INSPECTION_DATE],[FLAT_STOREY_COUNT],
                    [HOTWATER_DESCRIPTION],[FLOOR_DESCRIPTION],[WINDOWS_DESCRIPTION],[WALLS_DESCRIPTION],[MAIN_HEATING_CONTROLS],
                    [SECONDHEAT_DESCRIPTION],[SHEATING_ENERGY_EFF], [SHEATING_ENV_EFF], [ROOF_DESCRIPTION],[MAINHEAT_DESCRIPTION],
                    [MAINHEATCONT_DESCRIPTION],[LIGHTING_DESCRIPTION],[HEAT_LOSS_CORRIDOR], [UNHEATED_CORRIDOR_LENGTH],[FLOOR_HEIGHT],
                    [PHOTO_SUPPLY],[LOCAL_AUTHORITY_LABEL],[POSTTOWN], [CONSTRUCTION_AGE_BAND],[LODGEMENT_DATETIME],[UPRN],[UPRN_SOURCE]
```

```sql
---STEP03---
--- EDA(Exploratory Data Analysis) & STANDARIZE THE DATA ---

SELECT MAX([CURRENT_ENERGY_EFFICIENCY]),MIN ([CURRENT_ENERGY_EFFICIENCY])
FROM[dbo].[certificate_staging]

SELECT MAX([POTENTIAL_ENERGY_EFFICIENCY]),MIN ([POTENTIAL_ENERGY_EFFICIENCY])
FROM[dbo].[certificate_staging]

SELECT DISTINCT [CURRENT_ENERGY_RATING]
FROM [dbo].[certificate_staging]

SELECT DISTINCT [POTENTIAL_ENERGY_RATING]
FROM [dbo].[certificate_staging]

SELECT DISTINCT [PROPERTY_TYPE]
FROM[dbo].[certificate_staging]

SELECT DISTINCT[BUILT_FORM]
FROM[dbo].[certificate_staging]

SELECT *
FROM[dbo].[certificate_staging]
WHERE [BUILT_FORM]IS NULL OR [BUILT_FORM]='';

SELECT DISTINCT [PROPERTY_TYPE]
FROM[dbo].[certificate_staging]
WHERE [BUILT_FORM]='';
```

```sql
SELECT DISTINCT [TRANSACTION_TYPE]
FROM[dbo].[certificate_staging]

SELECT DISTINCT [POTENTIAL_ENERGY_RATING]
FROM[dbo].[certificate_staging]

SELECT MAX([TOTAL_FLOOR_AREA]),MIN ([TOTAL_FLOOR_AREA])
FROM[dbo].[certificate_staging]

SELECT DISTINCT [GLAZED_TYPE]
FROM[dbo].[certificate_staging]

SELECT *
FROM [dbo].[certificate_staging]
WHERE [GLAZED_TYPE]='INVALID!'OR [GLAZED_TYPE]='NO DATA!' OR [GLAZED_TYPE]='' OR [GLAZED_TYPE]= 'not defined'

SELECT DISTINCT [MAIN_FUEL]
FROM[dbo].[certificate_staging]
```

```sql
--- step 04 ---
--- CHECKING THE NULL VALUES AND REMOVE THEM ----

SELECT *
FROM [dbo].[certificate_staging]
WHERE [LODGEMENT_DATE] ='NO DATA!'
   OR [LMK_KEY] ='NO DATA!'
   OR [POSTCODE] ='NO DATA!'
   OR [BUILDING_REFERENCE_NUMBER] ='NO DATA!'
   OR [CURRENT_ENERGY_RATING] ='NO DATA!'
   OR [POTENTIAL_ENERGY_EFFICIENCY] ='NO DATA!'
   OR [PROPERTY_TYPE] ='NO DATA!'
   OR [BUILT_FORM] ='NO DATA!'
   OR [LODGEMENT_DATE] ='NO DATA!'
   OR [TRANSACTION_TYPE]='NO DATA!'
   OR [ENVIRONMENT_IMPACT_CURRENT] ='NO DATA!'
   OR [ENVIRONMENT_IMPACT_POTENTIAL] ='NO DATA!'
   OR [ENERGY_CONSUMPTION_CURRENT] ='NO DATA!'
   OR [ENERGY_CONSUMPTION_POTENTIAL] ='NO DATA!'
   OR [CO2_EMISSIONS_CURRENT] ='NO DATA!'
   OR [CO2_EMISS_CURR_PER_FLOOR_AREA] ='NO DATA!'
   OR [CO2_EMISSIONS_POTENTIAL]='NO DATA!'
   OR [LIGHTING_COST_CURRENT] ='NO DATA!'
   OR [LIGHTING_COST_POTENTIAL] ='NO DATA!'
   OR [HEATING_COST_CURRENT] ='NO DATA!'
   OR [HEATING_COST_POTENTIAL] ='NO DATA!'
   OR [HOT_WATER_COST_CURRENT] ='NO DATA!'
   OR [HOT_WATER_COST_POTENTIAL] ='NO DATA!'
   OR [TOTAL_FLOOR_AREA] ='NO DATA!'
```

SQLQuery3.sql - ad...rEPC (poojani (53))*

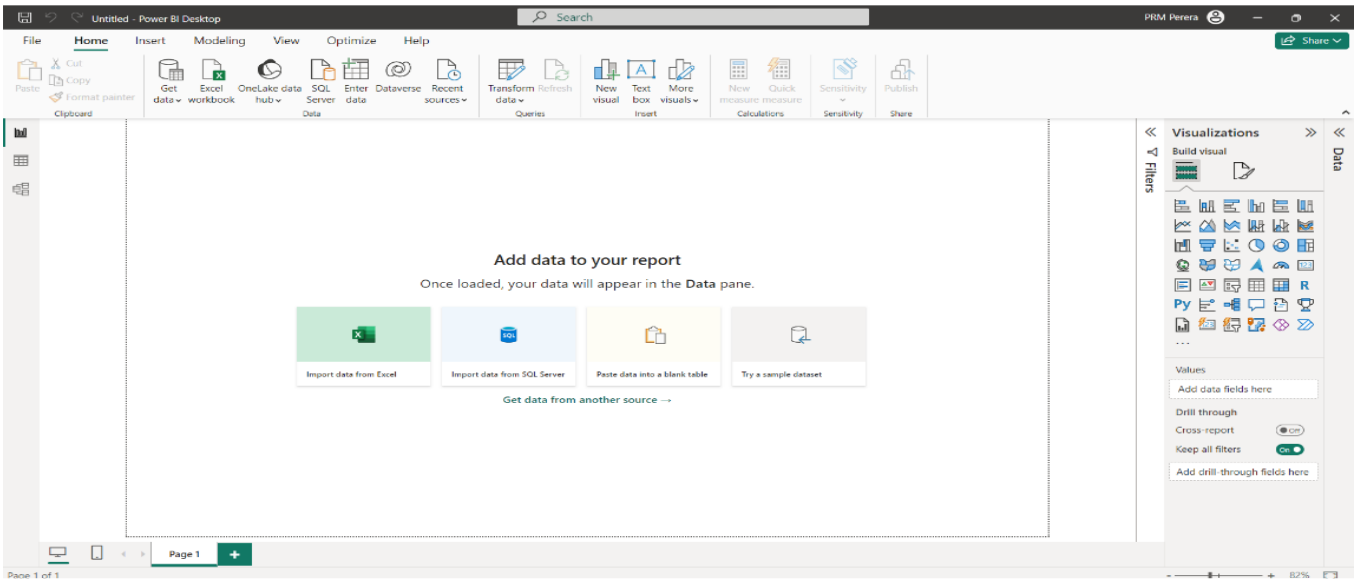
```sql
   OR [TOTAL_FLOOR_AREA] ='NO DATA!'
   OR [ENERGY_TARIFF] ='NO DATA!'
   OR [MAINS_GAS_FLAG] ='NO DATA!'
   OR [FLAT_TOP_STOREY]='NO DATA!'
   OR [MULTI_GLAZE_PROPORTION] ='NO DATA!'
   OR [GLAZED_TYPE] ='NO DATA!'
   OR [GLAZED_AREA]='NO DATA!'
   OR [EXTENSION_COUNT] ='NO DATA!'
   OR [NUMBER_HABITABLE_ROOMS] ='NO DATA!'
   OR [NUMBER_HEATED_ROOMS] ='NO DATA!'
   OR [LOW_ENERGY_LIGHTING] ='NO DATA!'
   OR [NUMBER_OPEN_FIREPLACES] ='NO DATA!'
   OR [HOT_WATER_ENERGY_EFF] ='NO DATA!'
   OR [HOT_WATER_ENV_EFF] ='NO DATA!'
   OR [FLOOR_ENERGY_EFF] ='NO DATA!'
   OR [FLOOR_ENV_EFF] ='NO DATA!'
   OR [WINDOWS_ENERGY_EFF] ='NO DATA!'
   OR [WINDOWS_ENV_EFF] ='NO DATA!'
   OR [WALLS_ENERGY_EFF] ='NO DATA!'
   OR [WALLS_ENV_EFF] ='NO DATA!'
   OR [ROOF_ENERGY_EFF] ='NO DATA!'
   OR [ROOF_ENV_EFF]='NO DATA!'
   OR [MAINHEAT_ENERGY_EFF] ='NO DATA!'
   OR [MAINHEAT_ENV_EFF] ='NO DATA!'
   OR [LIGHTING_ENERGY_EFF] ='NO DATA!'
   OR [LIGHTING_ENV_EFF]='NO DATA!'
   OR [MAIN_FUEL]='NO DATA!'
   OR [WIND_TURBINE_COUNT] ='NO DATA!'
   OR [SOLAR_WATER_HEATING_FLAG]='NO DATA!'
```

```sql
  ---- COLUMN COUNT ----

SELECT COUNT(*)
FROM INFORMATION_SCHEMA.COLUMNS
WHERE TABLE_NAME = 'certificate_staging';

---- COLUMN COUNT ----

SELECT COUNT(*)
FROM INFORMATION_SCHEMA.COLUMNS
WHERE TABLE_NAME = 'certificate_staging';

---- THERE ARE 61 COLUMNS IN THE DATASET. SO IF WE CLEAN THIS WITH BLANKS AND OTHERS IT SHOULD AFFECT TO THE OTHER COLUMNS.
---- THEREFORE WE CLEANED THE MAIN KEY VARIABLES OF THE DATASET ---

SELECT *
FROM [dbo].[certificate_staging]
WHERE [LMK_KEY] IS NULL OR [LMK_KEY]=' ' OR [LMK_KEY]='NO DATA!'

DELETE
FROM [dbo].[certificate_staging]
WHERE [TRANSACTION_TYPE]='NO DATA!' OR [TRANSACTION_TYPE]='unknown'
```

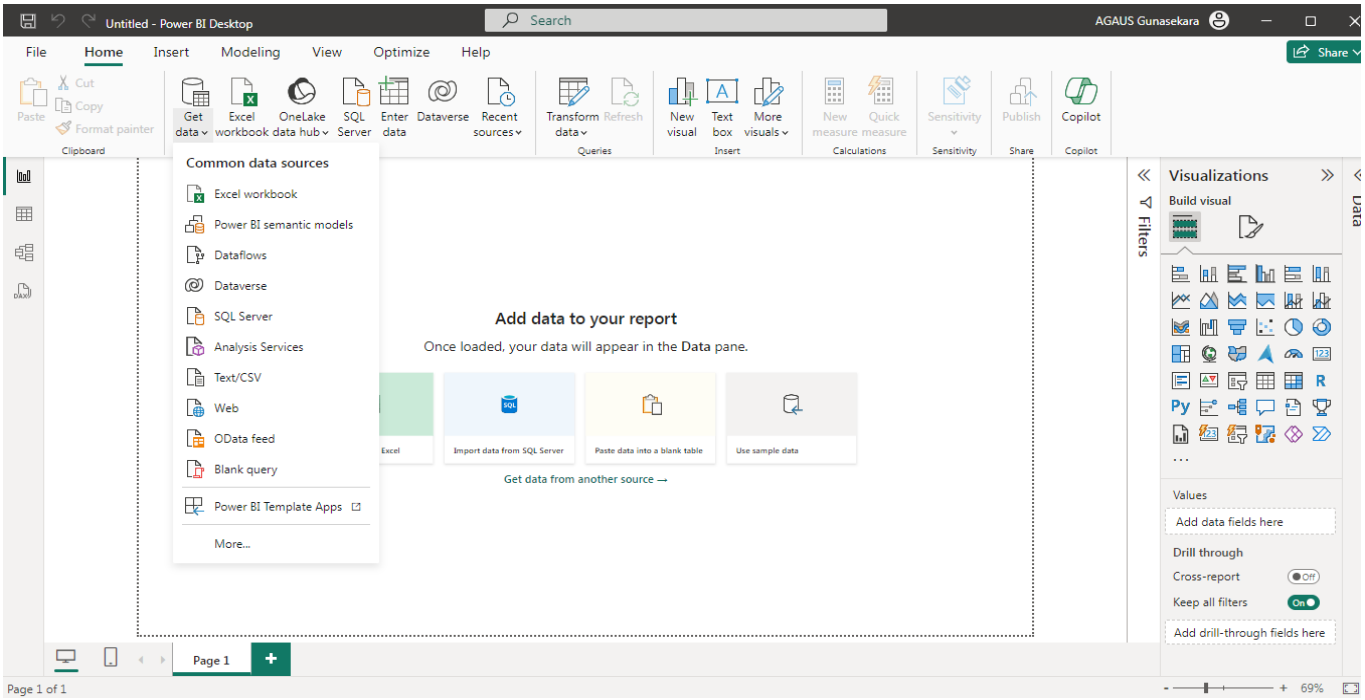
```sql
WITH NULL_CTE AS
(
SELECT *
FROM [dbo].[certificate_staging]
WHERE[BUILDING_REFERENCE_NUMBER] IS NULL OR [BUILDING_REFERENCE_NUMBER]=' ' OR [BUILDING_REFERENCE_NUMBER]='NO DATA!'
OR  [ADDRESS] IS NULL OR [ADDRESS] = ' ' OR [ADDRESS]='NO DATA!'
OR [POSTCODE] IS NULL OR [POSTCODE]=' ' OR [POSTCODE] = 'NO DATA!'
OR [ENERGY_CONSUMPTION_CURRENT] IS NULL OR [ENERGY_CONSUMPTION_CURRENT]=' ' OR [ENERGY_CONSUMPTION_CURRENT]='NO DATA!'
OR [BUILT_FORM] IS NULL OR [BUILT_FORM]='' OR [BUILT_FORM]='NO DATA!'
)
DELETE
FROM NULL_CTE


--- FINAL DATASET ----

SELECT COUNT( [LMK_KEY])
FROM[dbo].[certificate_staging]
```

2.4 FINAL DASHBOARD AND VIZUAL IMPLEMENTS

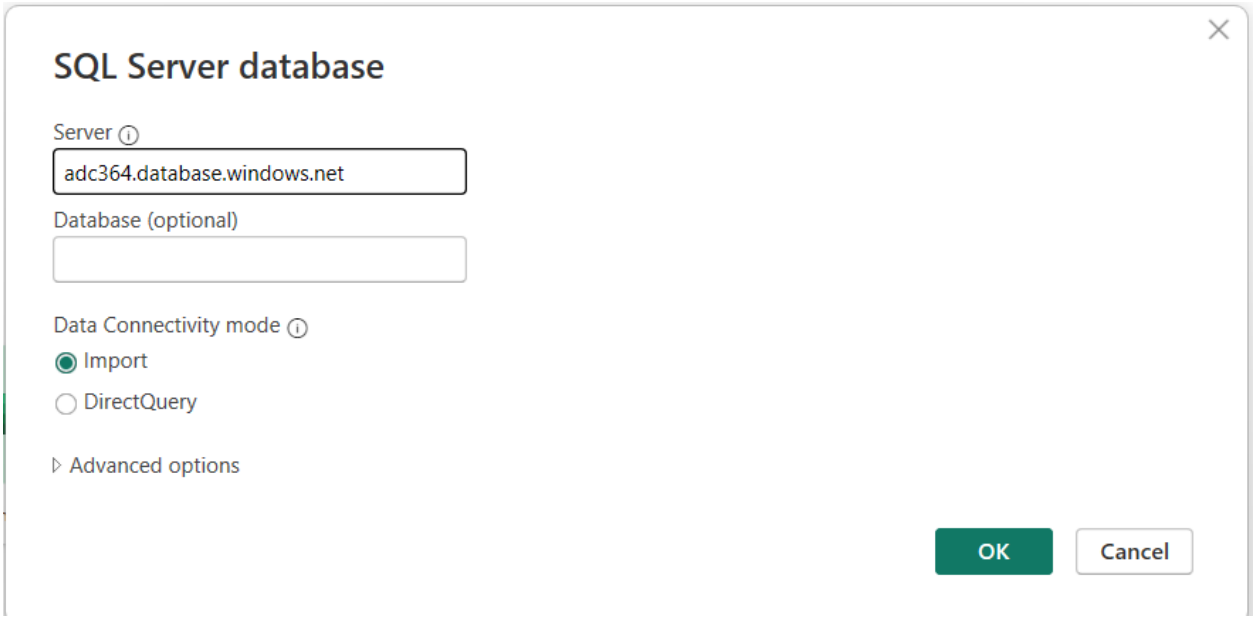
Bring Data into Power BI.Open Power Bi desktop.



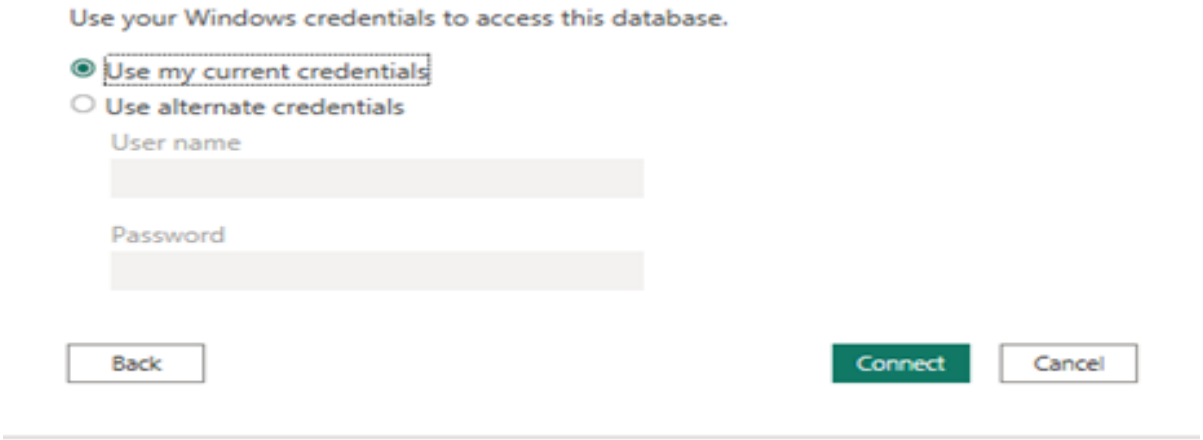
In Home tab, select Get Data → SQL Server



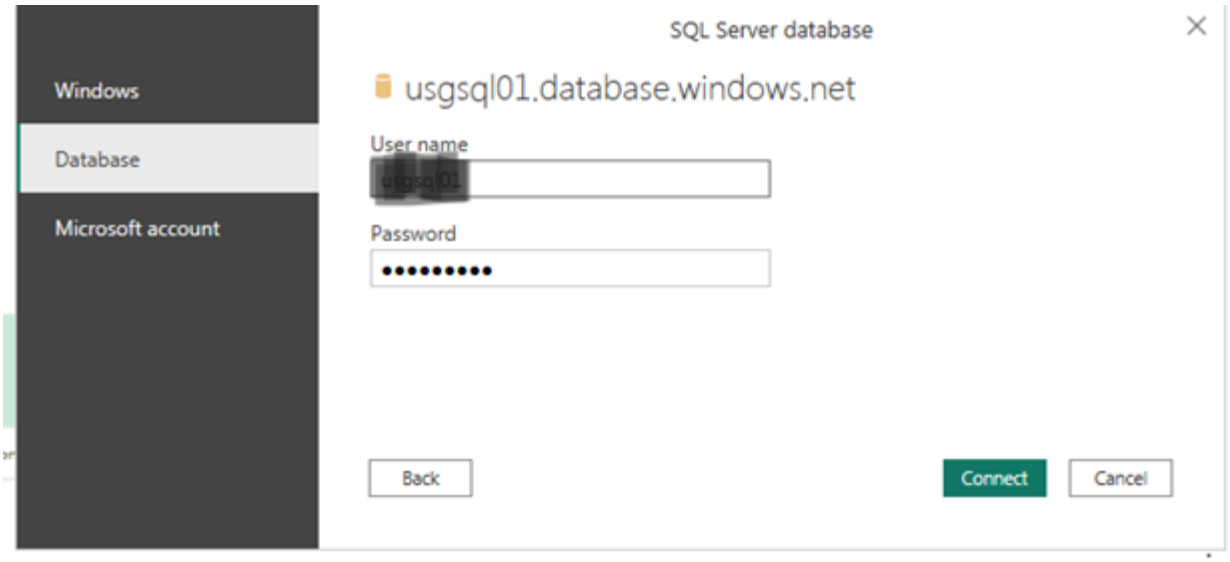
From SQL Server Database Server connect to your server. Enter the server name correctly in the dialogue box and click OK.



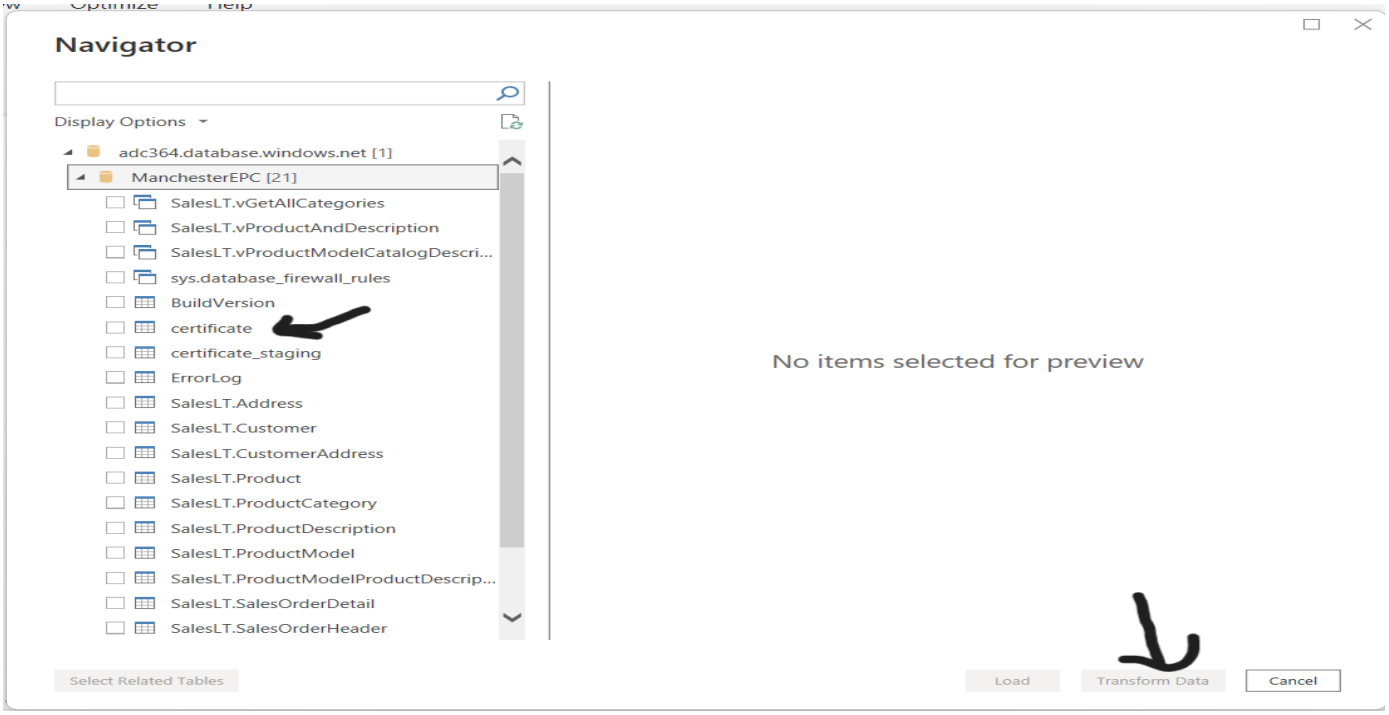
Enter the server username and password under the database section as follows.



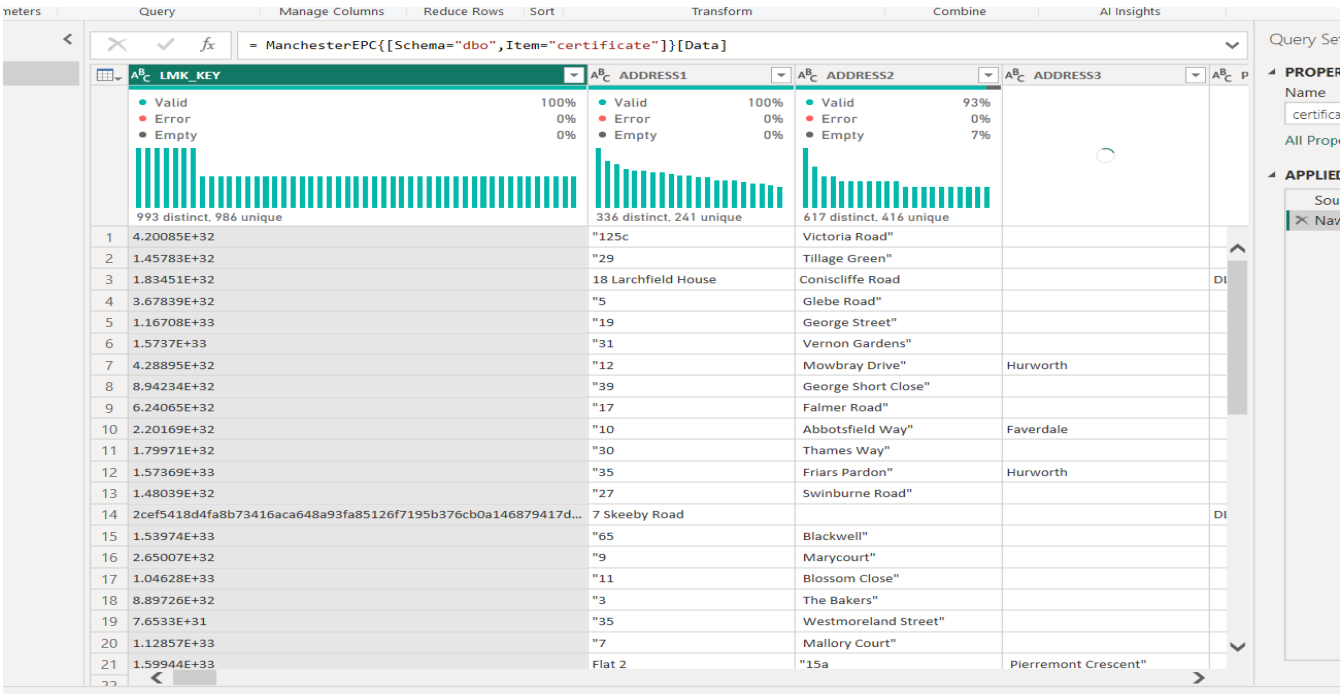
Then click on connect.



In Navigator tab, select ‘cretificate’ dataset from ‘ManchesterEPC’ Database. Then select transform data.

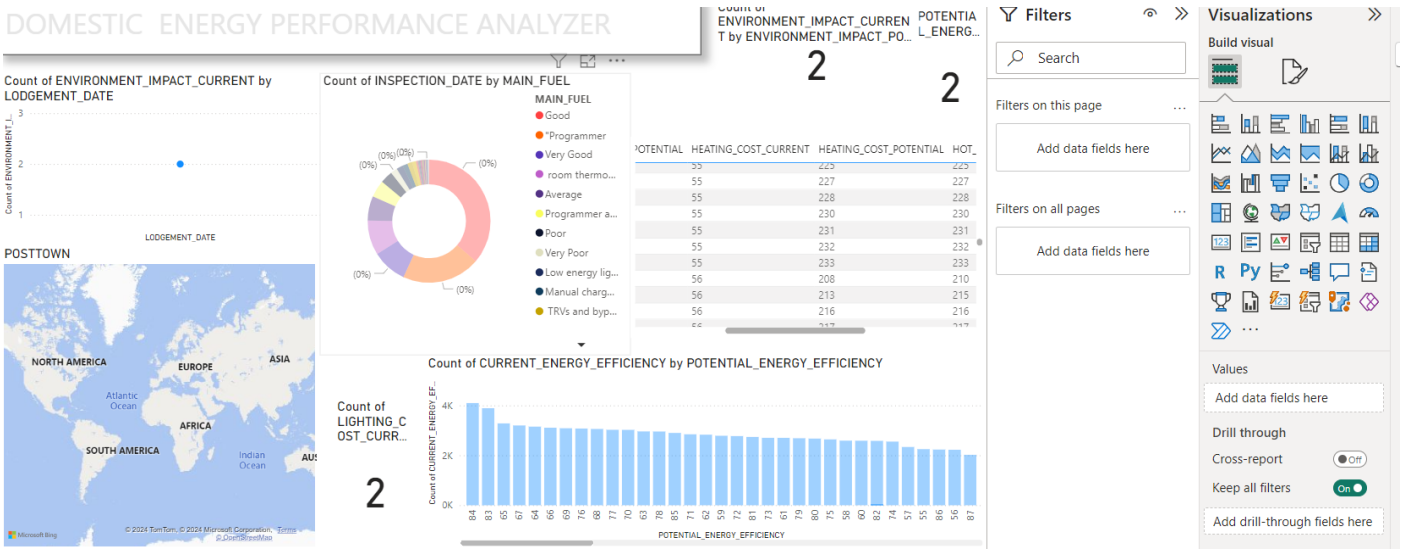


Then your data will be transformed into Power Query Editor as follows.

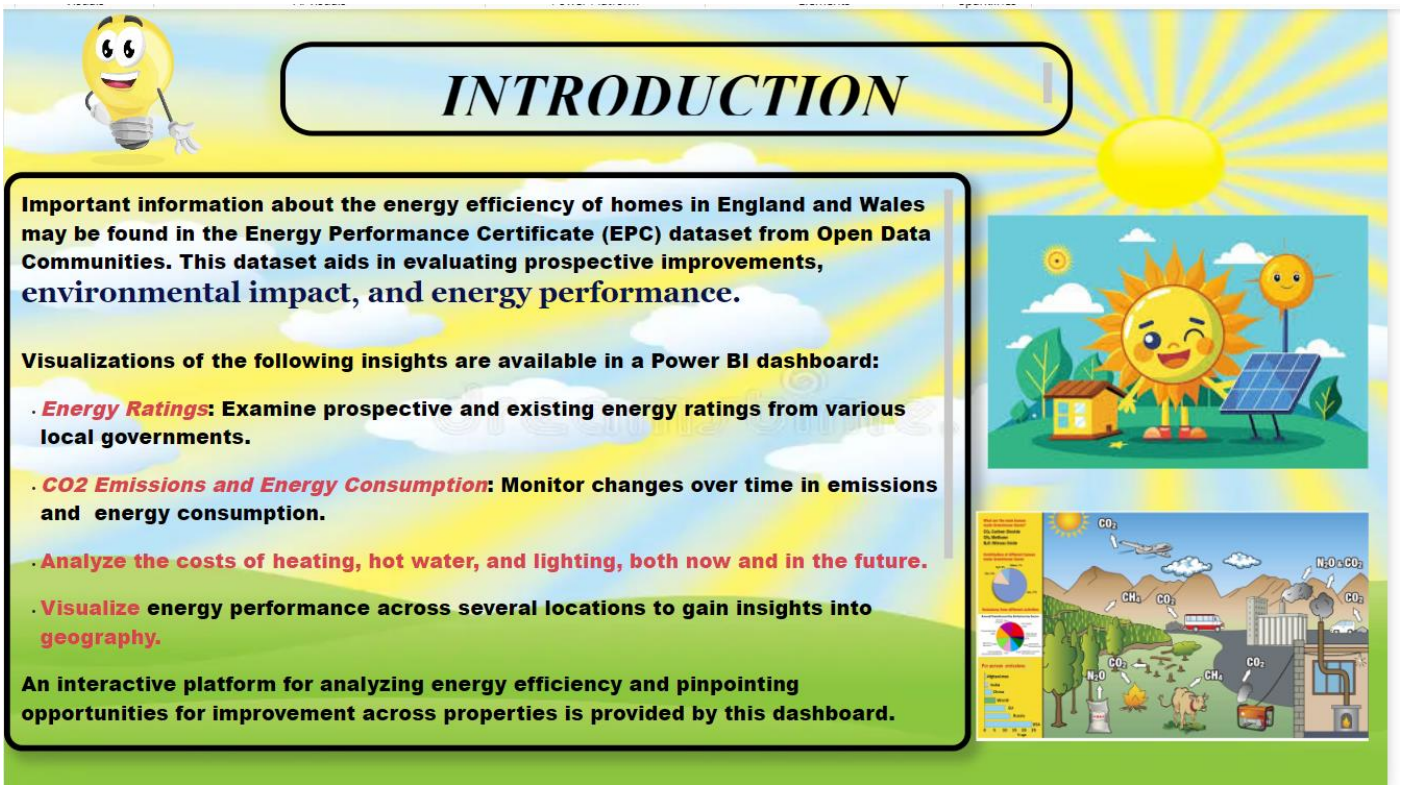


Then select on close and apply.

Design the charts.



Introduction page



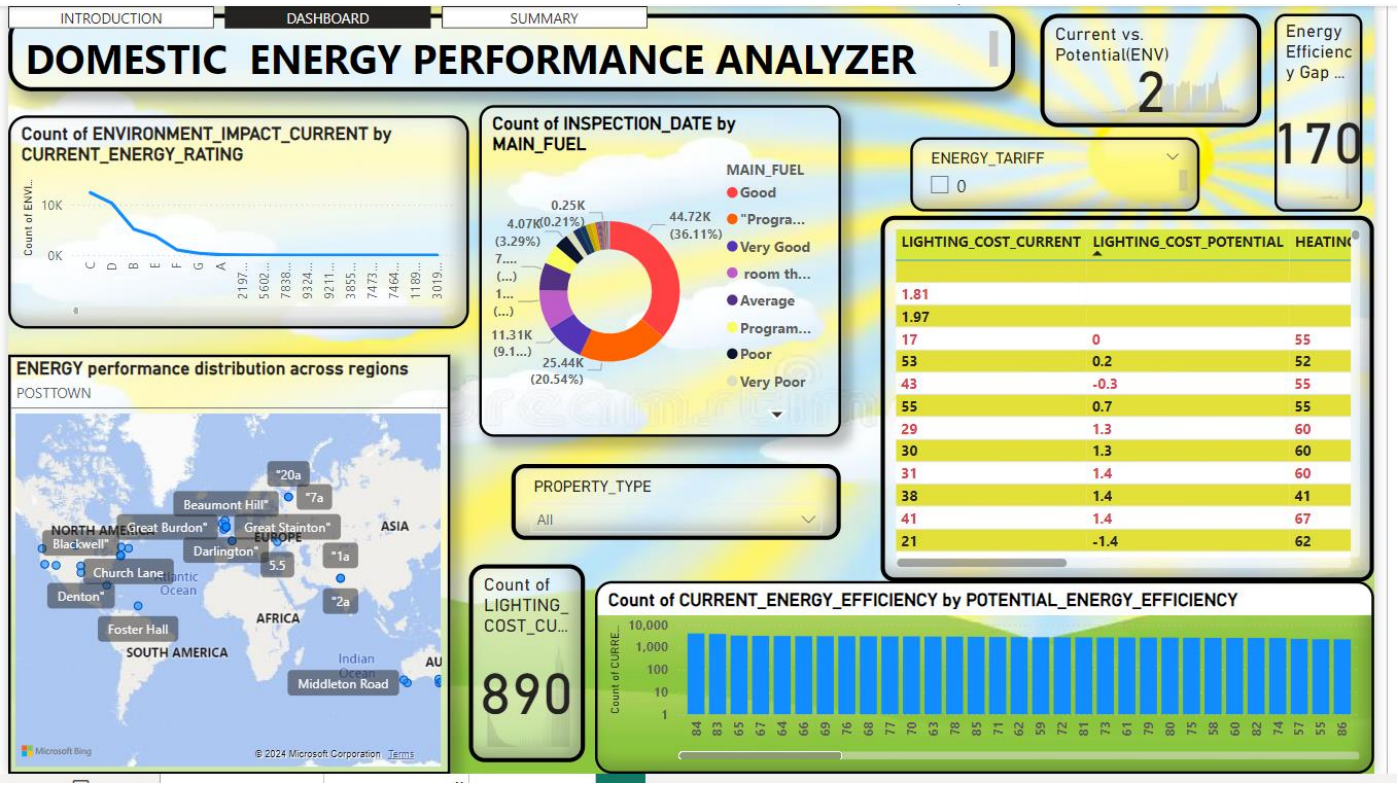
The dashboard provides a comprehensive platform for analyzing the energy efficiency of homes in England and Wales. It leverages data from the Energy Performance Certificate (EPC) dataset to offer valuable insights into various aspects of energy performance.

Key features and insights include:

- **Energy Ratings:** Examination of current and potential energy ratings across different local governments.
- **CO2 Emissions and Energy Consumption:** Tracking changes in emissions and energy consumption over time.
- **Cost Analysis:** Analyzing the costs of heating, hot water, and lighting, both present and future.
- **Geographical Analysis:** Visualizing energy performance across different locations to understand geographical trends.

Overall, the dashboard serves as an interactive tool for assessing energy efficiency and identifying opportunities for improvement in residential properties.

Dashboard Analyzing Part



Overview

This dashboard offers a thorough analysis of household energy performance, emphasizing several indicators including consumption, energy efficiency, and environmental effect. It visualizes important findings using a combination of tables and charts.

Chart Summaries

1. Count of ENVIRONMENT_IMPACT_CURRENT by CURRENT_ENERGY_RATING

- Type: Line chart
- Purpose: This chart illustrates the relationship between the current energy rating and the count of environmental impacts.
- Insights: The line graph shows a general trend where higher energy ratings are associated with lower counts of environmental impacts.

2. Count of INSPECTION_DATE by MAIN_FUEL

- Type: Pie chart
- Purpose: This chart displays the distribution of inspections based on the main fuel type.

- Insights: The pie chart reveals the dominant fuel types among the inspected properties, providing valuable information for energy policy and infrastructure planning.

3. ENERGY performance distribution across regions

- Type: Heatmap
- Purpose: This heatmap visualizes the energy performance distribution across different regions.
- Insights: The heatmap allows for easy identification of regions with high or low energy performance. This information can be used to target energy efficiency initiatives and allocate resources effectively.

4. Count of CURRENT_ENERGY_EFFICIENCY by POTENTIAL_ENERGY_EFFICIENCY

- Type: Bar chart
- Purpose: This chart compares the current energy efficiency of properties against their potential energy efficiency.
- Insights: The bar chart highlights the gap between the current and potential energy efficiency levels. This information can be used to identify areas where significant energy savings can be achieved through energy efficiency upgrades.

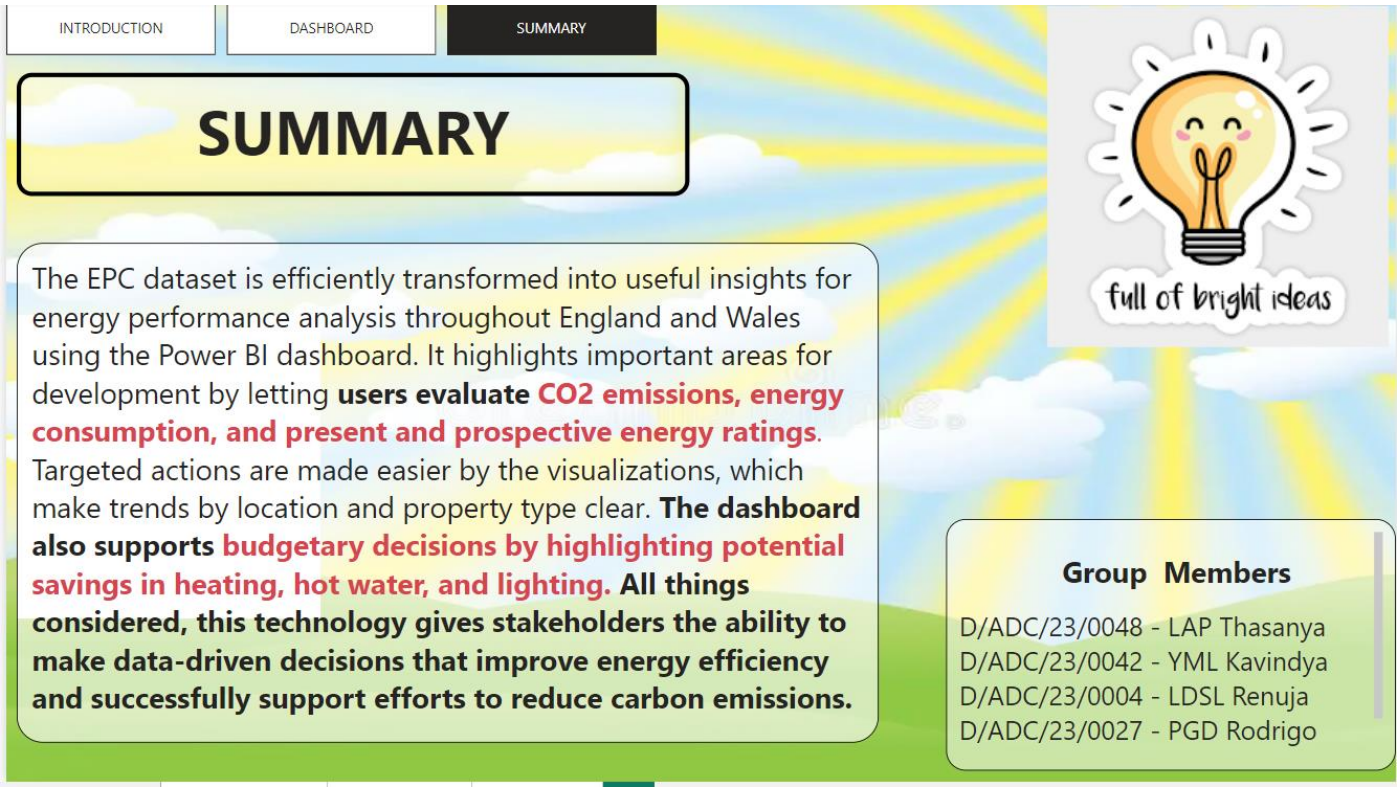
5. Count of LIGHTING COST CURRENT vs. LIGHTING COST POTENTIAL

- Type: Scatter plot
- Purpose: This scatter plot compares the current lighting costs of properties to their potential lighting costs.
- Insights: The scatter plot helps identify properties with high potential for reducing lighting costs. By analyzing the relationship between the current and potential costs, specific areas for improvement can be targeted.

Additional Insights

- Filters: The dashboard includes filters that allow users to drill down into specific data segments and analyze energy performance based on various criteria such as property type, region, and time period.

Summary



The dashboard provides a comprehensive platform for analyzing the energy efficiency of homes in England and Wales. It leverages data from the Energy Performance Certificate (EPC) dataset to offer valuable insights into various aspects of energy performance.

Key features and insights include:

- Energy Ratings: Examination of current and potential energy ratings across different local governments.
- CO2 Emissions and Energy Consumption: Tracking changes in emissions and energy consumption over time.
- Cost Analysis: Analyzing the costs of heating, hot water, and lighting, both present and future.
- Geographical Analysis: Visualizing energy performance across different locations to understand geographical trends.

Overall, the dashboard serves as an interactive tool for assessing energy efficiency and identifying opportunities for improvement in residential properties.

2.5 CONCLUSION

The dashboard provides valuable insights into the energy performance of domestic properties in England and Wales. Key findings include a correlation between higher energy ratings and lower environmental impacts, regional disparities in energy performance, and significant opportunities for improving energy efficiency. The dashboard empowers stakeholders to make data-driven decisions and take targeted actions to reduce energy consumption and carbon emissions.