Food Security Sector

PowerBi Training

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Cox’s Bazar, Bangladesh

Photo: ISCG / Saikat Mojumdur
Agenda

- Introduction
- Data
- Visualization
- Filtering
- Prompted Exercise (30 mins)
Introduction
Introduction

Power BI is a Data Visualization and Business Intelligence tool that converts data from different data sources to interactive dashboards and BI reports.

- Business intelligence (BI): refers to taking raw data from a data source, transforming it into usable data and utilizing it to make reports and informative graphics for data analysis.
- Data visualization: refers to representing tabular data graphically. It enables a user to visualize important information through charts, graphs, maps, etc. to attain valuable insights just by looking at them.

Microsoft offers three types of Power BI platforms:

- Power BI Desktop (A desktop application)- A desktop-based reporting interface.
- Power BI Service (SaaS i.e., Software as a Service)- A cloud-based BI service are used to view and share dashboards.
- Power BI Mobile (For iOS and Android devices)- User can stay connected to their data from anywhere.
Features

- Visualizations/ custom visualizations
- GetData (Data sources)/data connections
- Datasets
- Dashboards
- Filters
- Ad hoc analysis
- Reports/ ad hoc reporting/interactive reports
- Trend indicators
- Online Analytical Processing (OLAP)
- Navigation pane
- Natural language Q & A box
- DAX functions and formula
- Office 365 app launcher
- Content packs
Supported Data Sources

- Files

It shows all flat file types (i.e. Excel, Text/CSV etc.).

Get Data

- Database

It shows a list of all the database connections (i.e. SQL, Access, oracle) that we can connect to.
Supported Data Sources

- Power platform
- Online Services
- Azure Cloud platform

Online Services

Connect to different online services such as Exchange, Salesforce, Google Analytics, and Facebook.

Using the Azure option, you can connect to the database in Azure cloud.
Get data from excel file

- In Power BI, click Get Data > Files > Excel
- Choose which file to upload and click Open.
- Select & check the sheet for loading
- Click Load to Upload Excel file to Power BI.

The files we will use today:

- FSS_PowerBI_2022
- GPS Points
Get data from excel file

- The connected excel files will show in the Fields pane
Refreshing Data

• For refreshing the data, we click on the Refresh Data under Home Tab

- Another way select the dataset from Fields section and select Refresh Data
Creating Visualization
Creating Visualization

- Two ways:
  - First is by adding from the right-side Fields pane to the Report Canvas by **clicking check on the field**.
  - Another way is to drag the fields from right side bar to the axis and value axis under Visualization.

**Bar Visualization**
Creating Stacked Bar/Column Visualization

- Select **stacked** bar/column chart from the Visualization pane.
- Select the field which we want to visualize through **stacked** bar/column chart from the Fields section. Here we want to visualize **Planned Individuals by Activity**. For this input Planned Individuals in the value and Activity in the Axis option.
Creating Stacked Bar/Column Visualization

- For visualizing **Activity by total Programme Partners** we include programme partner in the value and legend and Activity in the Axis option.
Creating Clustered Bar/Column Visualization

• Select **Clustered** bar/column chart from the Visualization pane

• Select the field which we want to visualize through **Clustered** bar chart from the Fields section. Here we want to visualize **Activity wise Planned Male and Female individuals**. For this select Planned Male and Female individuals in the value and Activity in the Axis option.
Pie/Donut Visualization

- Select Pie/Donut chat from the Visualization pane
- For this select Activity Name under both Value and Legend options.
Map Visualizations

- Select the specific map option from the visualization pane.
- Select the longitude and latitude fields from the Field section and Location values from the field section.
Table visualization

- Select the table option from the visualization pane.
- Select the adm3-Upazilla, Programme Partner, Delivery Modality, Currency, Value per HH per month fields in the values section to show the values in tabular visualization.
- With the numerical values in a table, you can see a sum of values at the bottom.
- Performing a sort in the table using an arrow key at the top of the column. To perform ascending/descending sort, just click the arrow mark, and the values in the column will be sorted.
- The order of the columns in a table is determined by the order in the value bucket on the right side. For changing the order, delete any column and add the other one.
- To change the aggregation type, click the arrow in the value bucket in front of the measure and will see a list of formulas that can be used.
Card/Multi-row Card visualization

- Select the card/multi-row card option from the visualization pane.
- Bring in Activity Name onto Card visualization: count vs. distinct count

Select the Activity Name and Programme Partner in the Fields section to show the Activity wise total number of partner in Multi-row Card visualization or Total programme partner in Card visualization.
Visualizations Modification

When you select any visualization, it has an option to change the color. Following options are available under the **Format tab**

- Legend
- Data Colors
- Detail Label
- Title
- Background
- Lock Aspect
- Border
- General
Visualizations Modification

Expanding the Legend field we can select –

➢ Position
➢ Title
➢ Legend Name
➢ Color
➢ Text Size
➢ Font Family

In case, change the color of any data field, we use this option. It shows all objects and their corresponding colors in the chart.
Insert

Shapes
To add shapes navigate to the Insert tab and at the top will find an option to add shapes.

To see the different available shapes, click the arrow next to the Shapes button.

Text
When click on the text box, it adds a text box in the Report canvas. Using the rich text editor to make formatting changes.

Image
Similarly, images can be added to data visualization to add logos or other images to data visualization. When clicking the Image option, it asks for a path to pass the image file.
Styling Reports

For Page orientation and size of report. Navigate to **Page View** menu from the View tab and the following options are provided.

- Fit to Page
- Fit to Width
- Actual Size

On the Report Canvas – Format Tab

**Page Information:** Under Page Information, you have Name and Q&A.

**Page Size:** By default, the page size in a report is 16:9; however, it is also possible to change the page size of the report. To change the page size, navigate to the Visualization pane and select Paint brush.

**Page Background:**

- Color
- Transparency
- Add Image
Duplicating Reports

For using the same layout and visuals for different pages use Duplicate Page option, a new page is added with similar layout and visuals.

To duplicate a page, right-click the Page and select Duplicate Page option. This will create a copy of the same page with the name - Duplicate of Page1

Now, rename an existing page or delete a page, can use other options as shown in the below screenshot.
Grouping

For grouping the field values:

➢ Select the field from the Fields section and there is a three dotted options beside the field, click and select New Group
➢ Change the Group type from Bin to List
➢ From the example here we group the transfer value into 5 groups 0-100, 101-500, 501-1500, 1500+ and other. For creating Group 1 select the ungrouped values by pressing Ctrl and select the values and click Group, rename the group name; Again do the same things for rest of the groups.
Column tools

Select the field in the Field section which we want to Edit

Select the column tools tab

Here we can change the data type, Format, put %, Comma, Decimal point
Filtering
• interact with reports in two different views: Reading view and Editing view

• The Filters pane displays along the right side of the report canvas. If we don't see the Filters pane, select the ">" icon from the upper-right corner to expand it.

• We can set filters at three different levels for the report: **visual-level, page-level, and report-level** filters
Visual level filter

In two different ways we can add a visual-level filter to a specific visual:

➢ **Filter a field that is already being used by the visualization:**

- Select More options (…) > Edit report to open the report in Editing view.
- Open the Visualizations and Filters pane and the Fields pane (if they're not already open).
- Select a visual to make it active. All the fields being used by the visual are in the Fields pane and also listed in the Filters pane, under the Visual level filters heading.
- At this point, we'll add a filter to a field already being used by the visualization. Scroll down to the Visual level filters area and select the arrow to expand the field you’d like to filter. In this example, we’ll filter Beneficiary type.
- Set either Basic, Advanced, or Top N filtering controls. In this example, we’ll search in Basic filtering and select those 2 months.

➢ **Filter with a field that's not in the visual**

- From the Fields pane, select the field you want to add as a new visual-level filter, and drag it into the Add Data fields here in the Visual level filters area. In this example, we'll drag Country into the Visual level filters bucket.
Page level and Report level filter

**Page level Filter**

- From the Fields pane, select the field you want to add as a new page-level filter, and drag it into the **Page level filters** area.
- Select the values you want to filter and set either **Basic** or **Advanced** filtering controls.
- All the visualizations on the page are redrawn to reflect the change.

**Report level Filter**

- From the Fields pane, select the field you want to add as a new report-level filter, and drag it into the **Report level filters** area place ‘**Filters on all pages**’:
- Select the values you want to filter.
Sharing
Once the report is created, navigate to the Publish button on the Home tab in Power BI desktop.

Once select the Publish service, visuals, custom measures and reports are all packaged and published to Power BI service. Power BI files have an extension .pbix files.

When the upload is in process, will get a dialog box that Publishing is in process. Once the upload is complete, will get a confirmation message announcing the “Success”.

[Image: Publishing to Power BI]
Exercise (30 mins)
Prompts

- Reached Individuals in the Host Communities by Activity – in Ukhia and Teknaf Upazila
- Evoucher assistance (Activity Details) by Male and Female Individuals
- Reached Individuals by Sector Objectives – bonus: display by Programme Partners
- Delivery Modality – Value per HH per Month – Currency
- Planned Male and Female Individuals by Activity Details and Activity Frequency
- Count of Sector Objectives and Indicators
- Cash Delivery Mechanism and Value per HH per Month
- Child Female Reached in Refugee Camps
- Existing Reached HHs vs. New Reached HHs
Thank you