Week-01-L-06

Agricultural Statistics in Practice

Index Numbers & Forecasting

MS Excel Program Showcasing an Example

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Problem Statement

- The following data shows the production of wheat in the Uttar Pradesh from 2010 to 2022.
- Using MS Excel, generate index numbers for the production of wheat from 2010 to 2022, with 2010 as the base year.
- ***Use the index numbers to plot a trendline.***

Year	*Prdn* *(lacs of quintals)*
2010	*1.45*
2011	*1.50*
2012	*1.55*
2013	*1.60*
2014	*1.65*
2015	*1.70*

Year	*Prdn* *(lacs of quintals)*
2016	*1.75*
2017	*1.80*
2018	*1.85*
2019	*1.90*
2020	*1.95*
2021	*2.00*
2022	*2.05*

Solution

Step 1: Set up the data:

- Enter the years in column A (from C5 to C17).
- Enter the production data in column B (from D5 to D17).

Solution

Step 2: Calculate the index numbers:

- In cell E5, enter the formula "=D5/D$5*100" and press Enter.
- Drag the formula down to fill the range E3:E15.

Solution

Step 3: Create a scatter plot with a trendline:

- Select the range C2:E15.
- Go to the "Insert" tab in the Excel ribbon.
- Click on the "Scatter" chart type and choose the scatter plot style you prefer.
- Right-click on any data point in the chart and select "Add Trendline".
- In the "Trendline Options" dialog box, choose the desired trendline type (e.g., linear).
- Check the box for "Display Equation on Chart".
- Click "Close" to add the trendline to the chart.

Solution

Step 4: Forecast the production for 2023:

- In cell D16, enter the formula "=FORECAST(2023,C3:C17,E3:E17)" and press Enter.
- The index numbers, trendline equation, and the forecasted production of wheat in 2023 will be displayed on the chart.
- Note: The "FORECAST" function is used to forecast a value based on existing data points. Ensure that the year 2023 is added to column C before calculating the forecast.

Thank You

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