**Flowchart of our time series analysis in R and R studio:**

1. **Start Analysis** -> Load Libraries -> Import Data -> First Visualization -> Create OLS Model Summary and Confidence Interval -> Check for Autocorrelation
2. **Check for Autocorrelation:**
   1. If No significant autocorrelation, skip to Summarize Findings.
   2. If Yes (significant autocorrelation), proceed to Plot ACF/PACF.
3. **Plot ACF/PACF -> Fit ARMA Model (p=1) -> Diagnostic Checks (ARMA p=2) -> Choose Best Model (ARMA p=1 or p=2) -> Validate the Chosen Model -> Update Visualization -> Statistical Testing -> Summarize Findings -> End Analysis**

Note: This is how the results were obtained

**Thanks,**

**Diagram form**

**Start Analysis**

**|**

**Load Libraries**

**|**

**Import Data**

**|**

**First Visualization**

**|**

**Create OLS Model**

**|**

**Summary and Confidence Interval**

**|**

**Check for Autocorrelation**

**|**

**Significant Autocorrelation?**

**|**

**Yes**

**|**

**Plot ACF/PACF**

**|**

**Fit ARMA Model (p=1)**

**|**

**Diagnostic Checks (ARMA p=2)**

**|**

**Choose Best Model (ARMA p=1 or p=2)**

**|**

**Validate the Chosen Model**

**|**

**Update Visualization**

**|**

**Statistical Testing**

**|**

**Make Predictions**

**-Fit the Final Model**

**-Generate Predictions**

**-Visualize Predictions**

**-Evaluate Predictions**

**|**

**Summarize Findings**

**|**

**End Analysis**