UNIT–II

Demand Forecasting: Meaning - Criteria of Good Demand Forecasting-Demand Forecasting Methods – Importance and Limitation of Demand Forecasting - Demand Forecasting for a New Product.

DEMAND FORECASTING

- **What is Demand Forecasting?**
- **“Demand forecasting is an estimate of sales revenue or physical units for a specified future period under a proposed marketing plan.”**
- **Demand forecasting is the tool to scientifically predict the likely demand of a product in the future.**

Stages in forecasting demand

- Specification of objective(s)
- Selection of appropriate technique
- Collection of appropriate data
- Estimation and interpretation of results
- Evaluation of the forecasts

Determinants of Forecasting

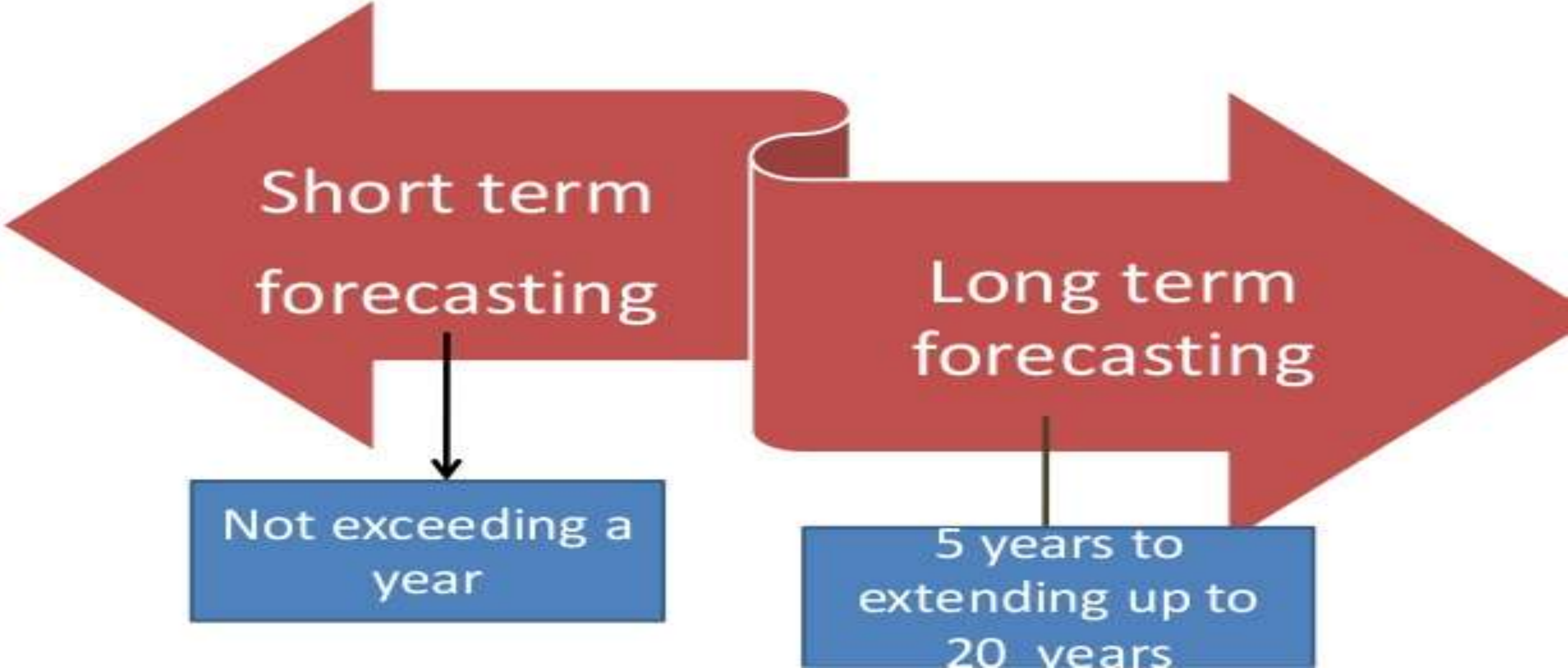
Extent or magnitude of Demand

Elasticity of Demand	Price of substitutes	Price of complementary goods

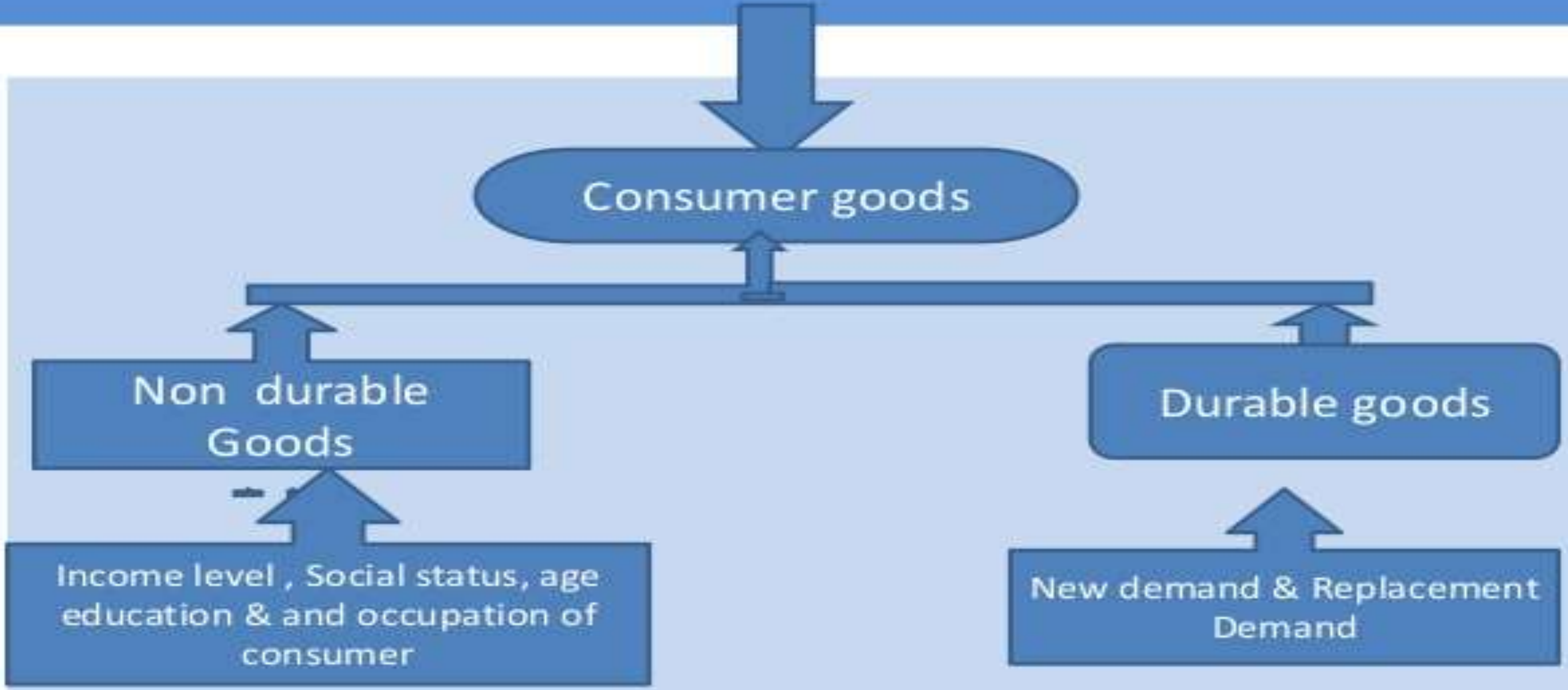
Categorization of forecasting by level

By level	• Micro level Is forecasting for an individual firm
Industry level	• Forecasting for the whole industry
Economy level	• Aggregate demand in the economy as a whole

Categorization by time period

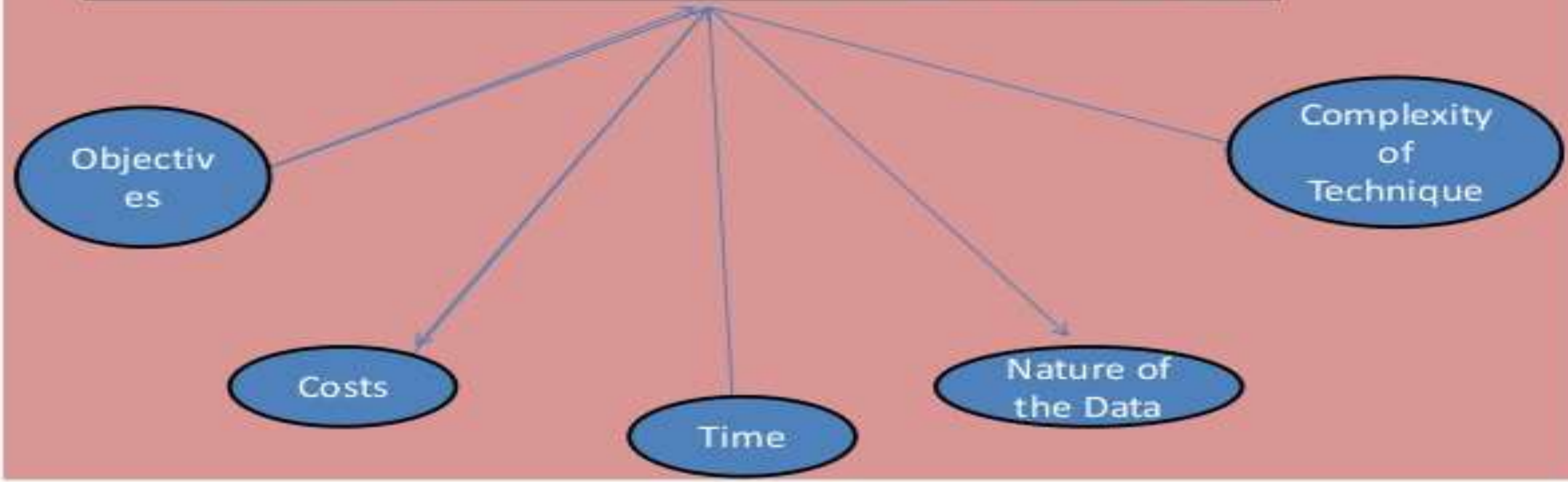


Categorization by Nature of Goods



Techniques of Forecasting

- **<u>Choice of a Forecasting Technique</u>**



Objectives of Forecasting

- To forecast for a new product
- To gauge the impact of new advertisement
- The cost of forecasting should not be more than it's benefits
- Calculating the opportunity costs of resources
- Time perspective- for short run or for long run?
- Complexity of techniques in relation to availability of expertise , that is whether the firm would look for experts in house or outsource it.

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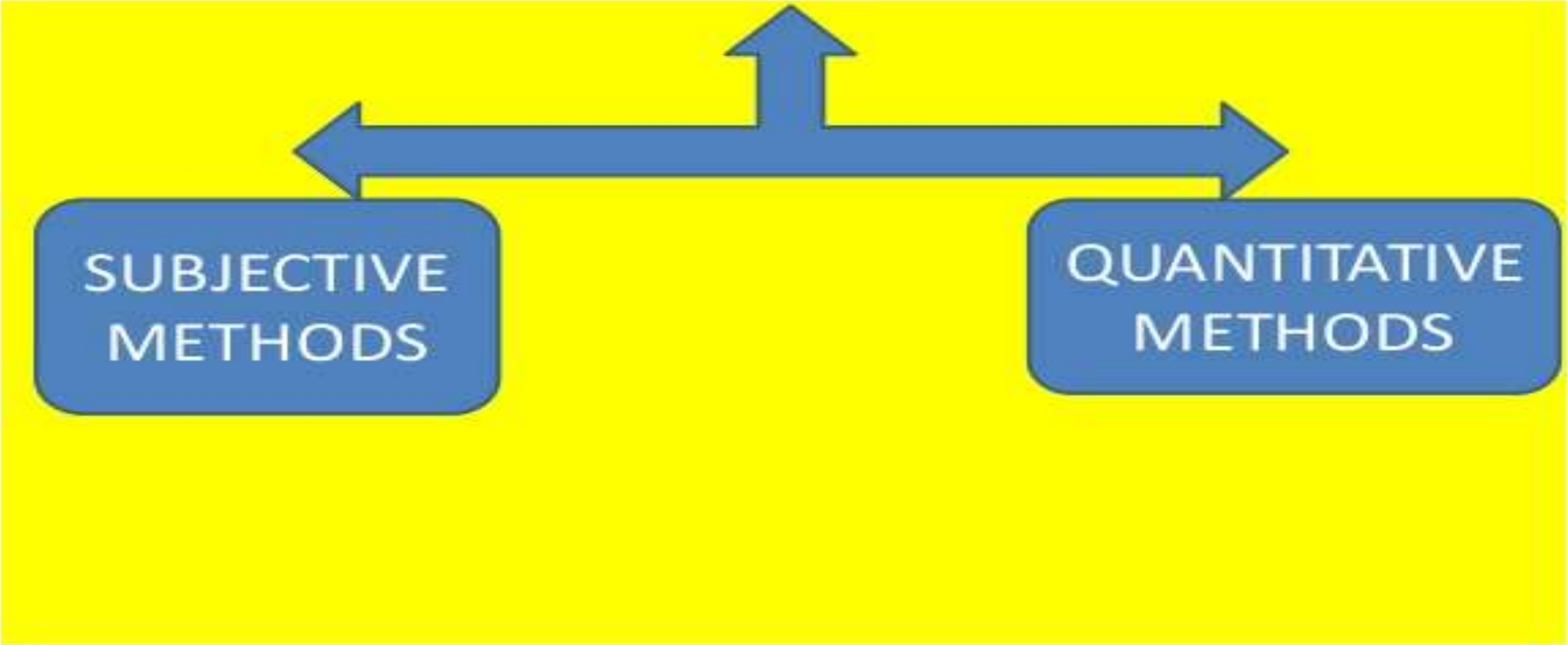
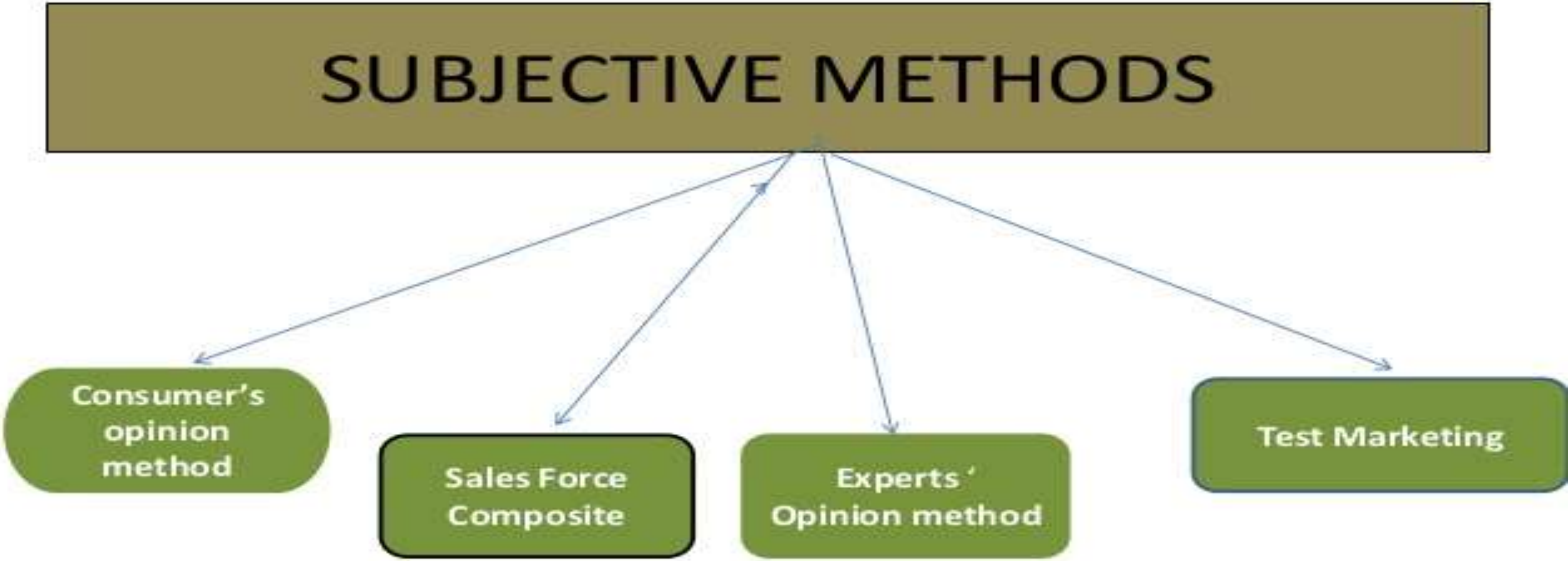
- To know the nature and quality of the data usually taken at regular intervals over a period of time.
- i.e does the time series show a clear trend or is it highly unstable?

Methods of Forecasting




SUBJECTIVE METHODS
Consumer's opinion method
Sales Force Composite
Experts ' Opinion method
Test Marketing

Consumers’ Opinion Method

- This is the most effective way to gauge the demand by taking the opinion of the *users* of the product.
- Buyers are asked about their future buying intentions of the products.
- Are asked about their brand preferences & quantities of purchase
- Are asked about their possible response to an increase in price.

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- Are enquired for probable changes in the product’s features
- This may bring out the implied comparison with competetors’ products

Consumers' Opinion Survey

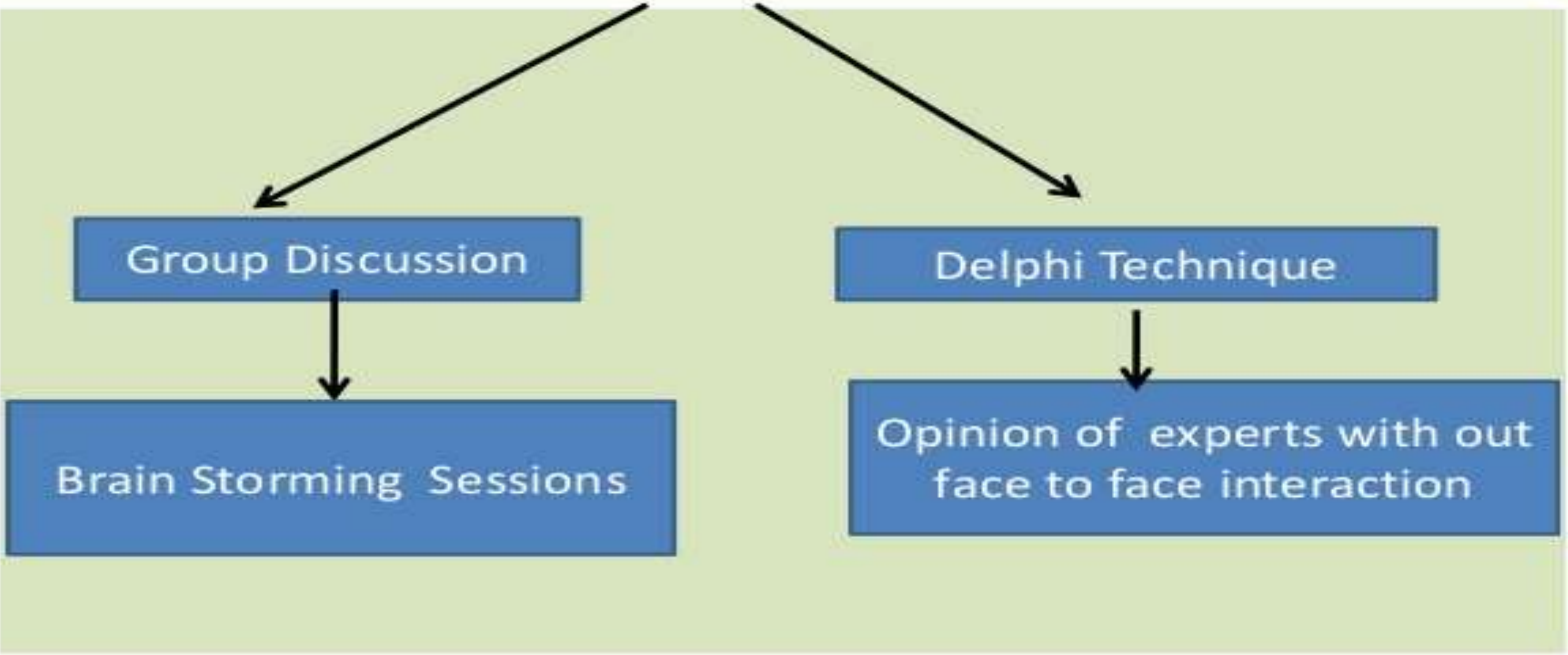
•SAMPLE SURVEY METHOD

- Care should be taken that the samples are representative of the universe.
- <u>STRATIFIED SAMPLING</u> can be used for more detailed information
- Information from sample can be collected either by questionnaire method or by personal interview method.
- The method will be chosen based on size of the sample and objective of the survey.

Sales force Composite

- What is sales force?
- Sales force consists of sellers, sales representatives , sales managers, dealers & distributors.
- METHOD :Since sales force is in direct contact with the customers they are asked to give their estimated sales targets in their respective sales territories in given period of time.
- It is expected that they have a better understanding of the market

Experts' opinion method



Delphi

- The Delphi method is a structured communication technique or method, originally developed as a systematic, interactive forecasting method which relies on a panel of experts.
- Delphi is being used as Qualitative research method.

Merits of Delphi Method

1. No subjective bias as the experts answer two or more rounds of questionnaires sent to panel of experts .
2. Anonymous summary of each expert’s opinion is provided.
3. By revising all the opinions a correct estimation is eventually found.

Market Simulation

1. This is a kind of laboratory experiment by creating an artificial market.
2. Useful to ascertain consumers’ reactions to changes in price ,packing and even location of the product in the shop
3. This method is invented by economists Grabor-Granger in 1960s.
4. This method is highly useful in the case of new product.

Test Marketing

- This is a step ahead of market experimentation.
- The product is actually sold in certain segments of the market with out the consciousness of being observed by the consumers.
- Demand is forecasted on the basis of actual sales in the test market and the product is launched in the entire market on the basis of the results of sales in the test area.
- It is most reliable and suitable for new products.

Quantitative methods/Statistical tools

- These methods are useful when past data is available.
- These are more scientific and cost effective.
- There is no scope for subjective bias in these methods

B) Quantitative Techniques/ Statistical or Analytical Methods

These are forecasting techniques that make use of historical quantitative data.

A statistical concept is applied to the existing data in order to generate the predicted demand in the forecast period.

The statistical methods, which are frequently used, for making demand projection are:

1) Trend Projection Method
2) Barometric Method
3) Regression Method
4) Econometric Method

1) Trend Projection Method

-An old firm can use its own data of past years regarding sales in past years.

-These data are known as time series of sales.

-**Assumes that past trend will continue in future.**

-Past trend is extrapolated (generalised).

The trend can be estimated by using any one of the following methods:

a) Graphical Method

b) Least Square Method

c) Time Series Data

d) Moving Average Method

e) Exponential Smoothing

1) Trend Projection Method

a) Graphical Method:

A trend line can be fitted through a series graphically.

The direction of curve shows the trend.

The main drawback of this method is that it may show the trend but not measure it.

b) Least Square Method:

1) Trend Projection Method

c) Time Series Data:

Data collected over a period of time recording historical changes in price, income, and other relevant variables influencing demand for a commodity.

Time series analysis relates to the determination of changes in a variable in relation to time.

d) Moving Average Method:

The moving average of the sales of the past years is computed.

The computed moving average is taken as forecast for the next year or period.

This is based on the assumption that future sales are the average of the past sales.

1) Trend Projection Method

e) Exponential Smoothing:

It uses a weighted average of past data as the basis for a forecast.

The procedure gives heaviest weight to more recent information and smaller weights to observations in the more distant past.

The reason for this is that the future is more dependent on the recent past than on the distant past.

Barometric forecasting uses past **demand** to predict future **demand**. The **barometric method** differs from trend analysis by using a combination of three "indicators" to gauge **demand**. Those indicators may change based on external factors and **demand** is forecasted based on the analysis of all three indicators.

In regression method, the **demand** function for a product is estimated where **demand** is dependent variable and variables that determine the **demand** are independent variable. If only one variable affects the **demand**, then it is called single variable **demand** function. Thus, simple **regression techniques** are used.

Econometric methods combine statistical tools with economic theories for **forecasting**. The **forecasts** made by this **method** are very reliable than any other **method**. An **econometric** model consists of two types of **methods** namely, regression model and simultaneous equations model.

Limitations of Demand forecasting

- Change in fashion.
- Consumers psychology.
- Lack of availability of experts.
- Uneconomical
- Lack of past data

Criteria for a good forecasting

- Accuracy
- Simplicity
- Economy
- Availability
- Durability

Purposes of forecasting

- **Purposes of short-term forecasting**

b. Appropriate production scheduling.

c. Reducing costs of purchasing raw materials.

d. Determining appropriate price policy

e. Setting sales targets and establishing controls and incentives.

f. Evolving a suitable advertising and promotional campaign.

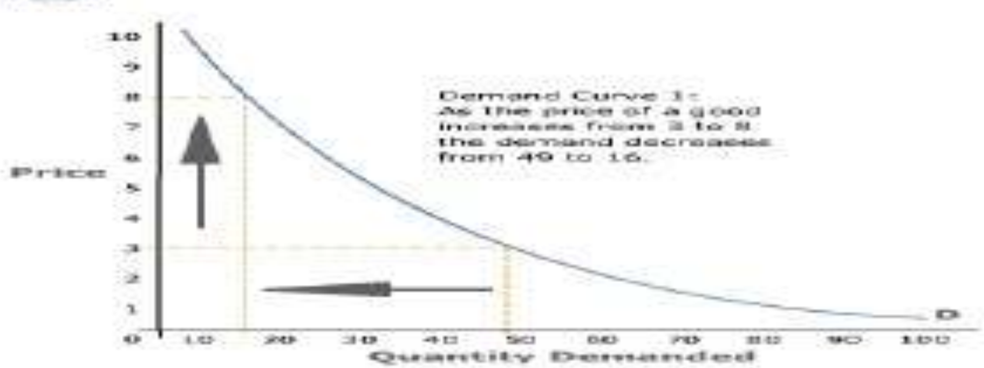
g. Forecasting short term financial requirements.

- **Purposes of long-term forecasting**

i. Planning of a new unit or expansion of an existing unit.

j. Planning long term financial requirements.

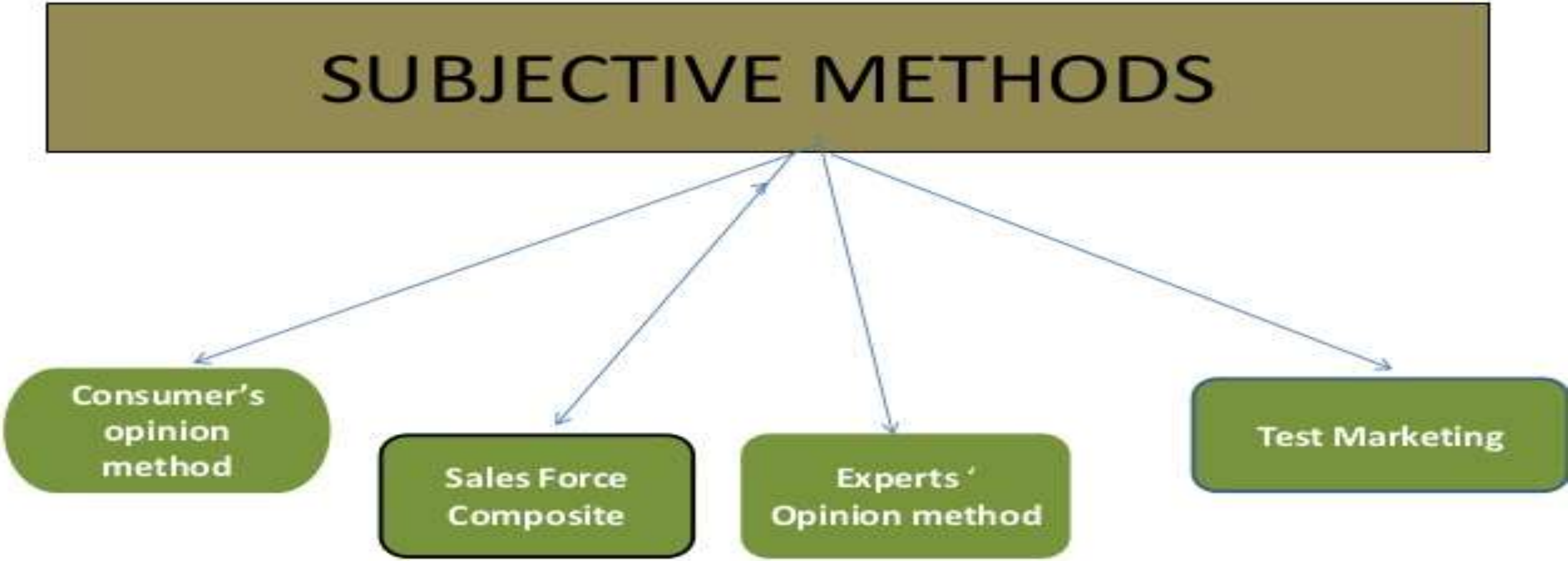
k. Planning man-power requirements.



Importance of demand forecasting

- Useful for planning of production
- Sales forecasting depends upon demand forecasting
- Useful for controlling inventories
- Helps in achieving targets of firm
- To stabilize production and employment
- Useful for policy making regarding long term investment programmes

DEMAND FORECASTING METHOS FOR NEW PRODUCTS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