Demand Estimation and Forecasting

Demand Estimation

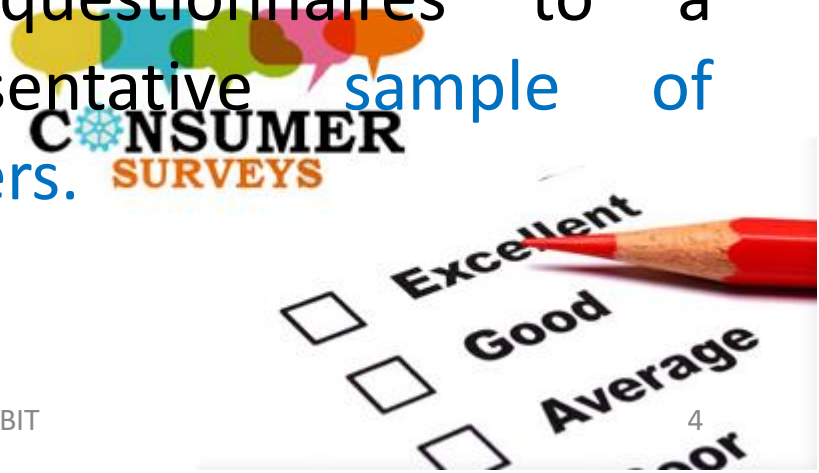
- In Demand estimating manager attempts to quantify the links or relationship between the level of demand and the variables which are determinants to it and is generally used in designing pricing strategy of the firm.
- In demand estimation manager analyse the impact of future change in price on the quantity demanded.
- Over estimation of demand may lead to an excessive price and lost sales whereas under estimates may lead to setting of low price resulting in reduced profits.
- It is for a short period.

DEMAND ESTIMATION: MARKETING RESEARCH APPROACHES

- Consumer Surveys
- Observational Research
- Consumer Clinics
- Market Experiments

CONSUMER SURVEYS:

- These surveys require the questioning of a firm's customers in an attempt to estimate the relationship between the demand for its products and a variety of variables perceived to be for the marketing and profit planning functions.
- These surveys can be conducted by simply stopping and questioning people at shopping centre or by administering sophisticated questionnaires to a carefully constructed representative sample of consumers by trained interviewers.



Advantages:

- They may provide the only information available;
- They can be made as simple as possible;
- The researcher can ask exactly the questions they want.

Disadvantages:

- Consumers may be unable or unwilling to provide reliable answers;
- Careful and extensive surveys can be very expensive.

Observational Research

Researcher

Non-participant Observation

Participant Observation

Watching people in their natural environment

OBSERVATIONAL RESEARCH

- It refers to gathering information on consumer preferences by watching them buying and using product.
- Observation research relies on product scanners which are increasingly formed in stores and on people meters in homes.
- Observation research, however, render consumer surveys useless.

Sometimes consumer surveys are the only ways to obtain information about possible consumer responses.

Advantages:-

- Very direct method of collecting information.
- Data collection is accurate and reliable.
- Detecting changes in consumer taste and preferences.

Disadvantages:-

- It requires some special tools for effective working.
- It is very much costly.
- Complete answer cannot be obtained.

CONSUMER CLINICS

- These are laboratory experiments in which the participants are given a sum of money and asked to spend it in simulated store to see how they react to changes in the commodity price, product packaging, displays, price of competitor products and other factors affecting demand.
- Consumer clinics are more realistic than consumer surveys.
- By being able to control the environment, the consumer clinics also avoid the pitfalls of actual market experiments which can be ruined by extraneous events.
- The results are questionable because participants know that they are in an artificial situation and that they are being observed.

Advantages:

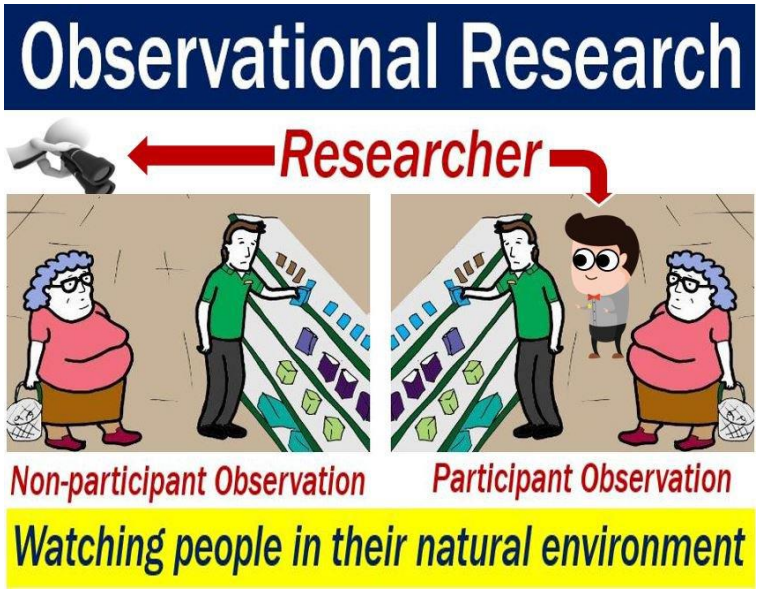
- Can be conducted on a large scale to ensure the validity of the results.
- Useful in determining its best pricing strategy.

Disadvantages:-

- Competitors could be try to destroy the experiment by also changing prices.
- In the process of raising price in the market, a firm might permanently lose customers.

MARKET EXPERIMENTS:

Attempts by the firm to estimate the demand for the commodity by changing price and other determinants of the demand for the commodity in the actual market place.



Advantages:

- Consumers are in a real market situation;
- They do not know that they being observed;
- They can be conducted on a large scale to ensure the validity of results.

Disadvantages:

- In order to keep cost down, the experiment may be too limited so the outcome can be questionable.
- Competitors could try to spoil the experiment by changing prices and other determinants of demand under their control;
- Competitors can monitor the experiment to gain very useful information about the firm would prefer not to disclose.

Modern Methods for Demand Estimation:-

- Virtual shopping a representative sample of consumer shop, a virtual store on the computer screen, instead of physical store.
  - It eliminates the high cost in terms of time and money.
  - It can be helpful in making intelligent decision quickly.
  - It can track closely the buying behavior of consumer.

Demand forecasting

- Demand forecasting mangers forecast the most likely future demand of a product so that he can make necessary arrangement for the various factor of production i.e labor, raw material, machines, money etc.
- Demand forecasting tells the expected level of demand at some future date on the basis of past and present information.
- It helped in production planning, new product development, capacity enhancement or new schemes etc.
- Demand forecasting is generally used for short term estimation as well as long term forecasting.

Features of Demand Forecasting

1. Demand Forecasting is a process to investigate and measure the forces that determine sales for existing and new products.
2. It is an estimation of most likely future demand for a product under given business conditions.
3. It is basically an educated and well thought out guesswork in terms of specific quantities
4. Demand Forecasting is done in an uncertain business environment.
5. Demand Forecasting is done for a specific period of time (i.e. the sufficient time required to take a decision and put it into action).
6. It is based on historical and present information and data.
7. It tells us only the approximate expected future demand for a product based on certain assumptions and cannot be 100% precise.

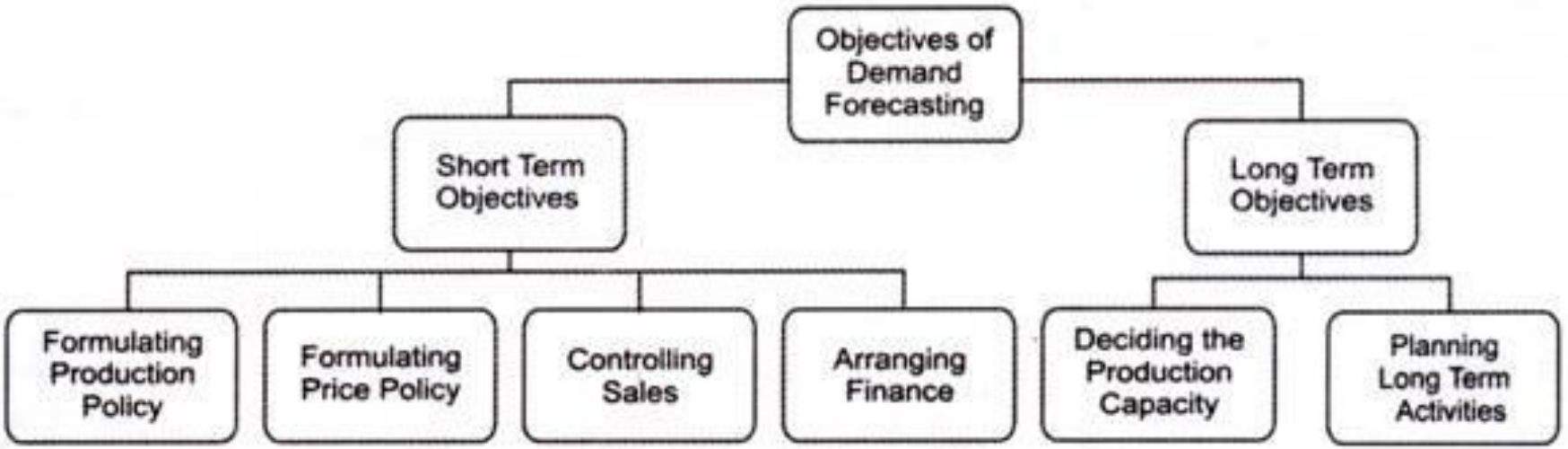


Figure-1: Objectives of Demand Forecasting

1. Trend Projection Method
2. The Semi average method
3. Moving average Method
4. Expert opinion poll method
5. Delphi Method

Trend Projection Method

- In trend analysis past data about the dependent and independent variables is used to project the sales in the coming years assuming that factors responsible for the past trends will continue to behave in similar manner in future also as they did in the past in determining the magnitude and trend of sales of a product.
- In this method a data set of past sales are taken at specified time, generally at equal intervals to depict the historical pattern under normal conditions.
- On the basis of derived historical pattern, the future sales of a company are projected.

Table-1

Sales data of XYZ Company

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Sales (₹, lakhs)	20	22	21	25	28	24	30	28	31	35	30

Figure-1

Trend Projection Sales of XYZ Company

The Semi average method

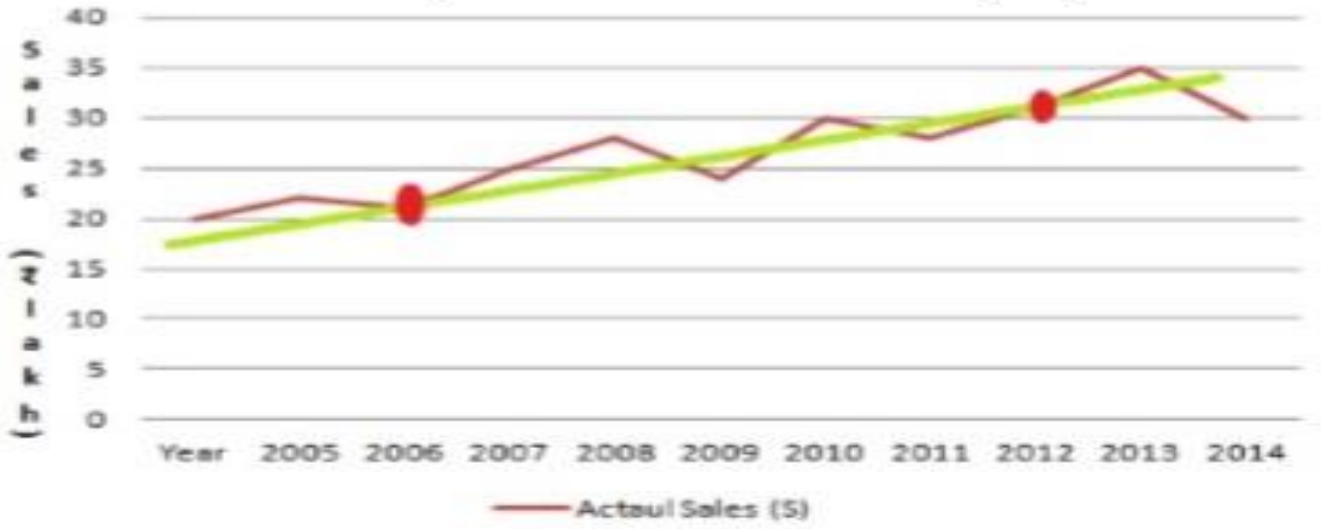
- In this method, first of all time series data of sale is divided into two equal parts and thereafter, separate average sale is calculated for each half.
- The two values of averages are plotted on graph corresponding to the time period.
- A straight line is then drawn by joining these two points.
- This line become the trend line and is used to forecast future sale.

Sales data of XYZ Company (₹, lakhs)

Year	Sales (S)	Average sale
2005	20	First half (20+22+21+25+28)/5 =23.2
2006	22	
2007	21	
2008	25	
2009	28	
2010	24	---
2011	30	(30+28+31+35+30)/5 =30.8
2012	28	
2013	31	
2014	35	
2015	30	

Figure-2

Trend Projection Sales of XYZ Company



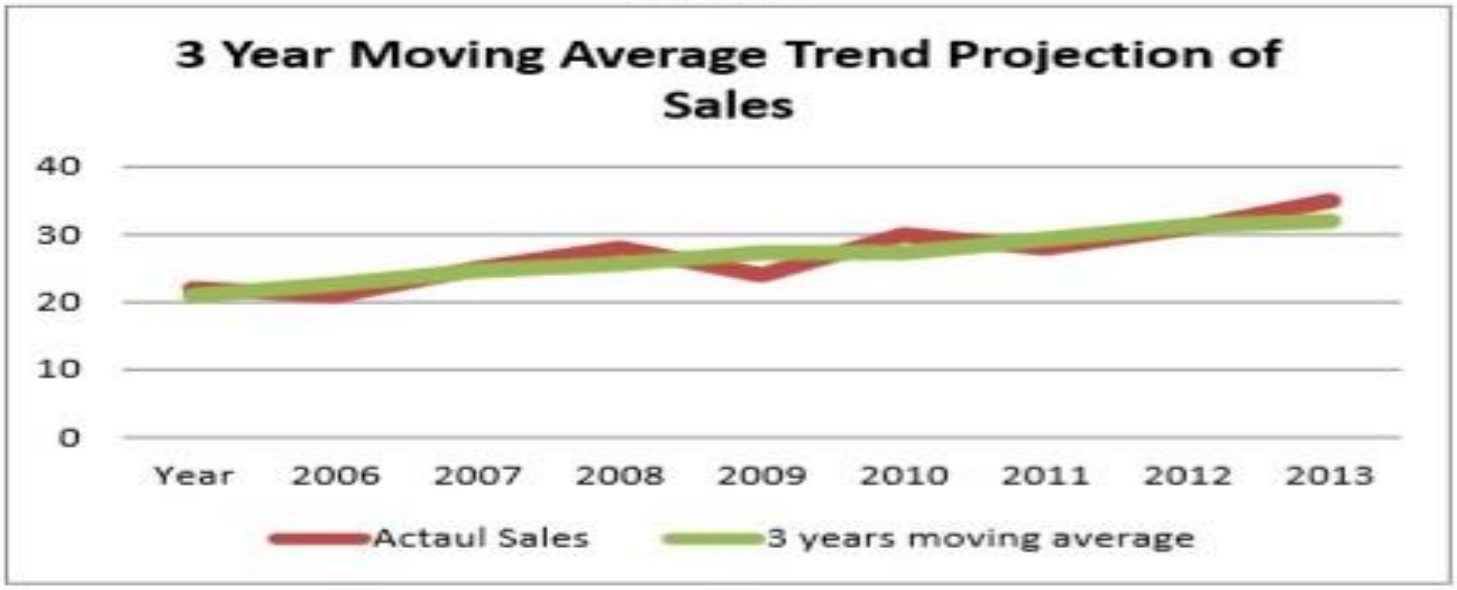
Moving average Method

- Moving average method is very widely used in practice.
- Under this method, moving average is calculated.
- One has to decide what moving year average – 3 year or 5 year or 7 year should be taken up and it depends upon the periodicity of the data.
- It is determined by plotting the data on the graph paper and noticing the average time interval of successive peaks or trough.
- After deciding the moving year average, moving average of the given sales data is calculated and these averages are plotted on the graph paper to fit the trend.

Sales data of XYZ Company (₹, lakhs)

Year	Sales (S)	3 years moving average
2005	20	-
2006	22	(20+22+21)/3 =21.00
2007	21	(22+21+25)/3 =22.67
2008	25	(21+25+28)/3 =24.67
2009	28	(25+28+24)/3 =25.67
2010	24	(28+24+30)/3 =27.33
2011	30	(24+30+28)/3 =27.33
2012	28	(30+28+31)/3 =29.33
2013	31	(28+31+35)/3 =31.33
2014	35	(31+35+30)/3 =32.00
2015	30	-

Figure-3



Expert opinion poll method

Expert opinion poll method

- Professional who has acquired knowledge and skills through study and practice over the years, in a particular field or subject, to the extent that his or her **opinion** may be helpful in fact finding, problem solving, or understanding of a situation. See also **expert** evidence.

- To counter this disadvantage of panel consensus, another approach is developed called the **Delphi method.** In this method a panel of experts is individually presented a series of questions pertaining to the forecasting problem. Responses acquired from the experts are analyzed by an independent party that will provide the feedback to the panel members.

Delphi Method

- Delhpi method of demand forecasting is an extension of the simple expert opinion poll method.
- This method is used to consolidate the divergent expert opinions and to arrive at a compromise estimate of future demand.
- The Process is simple.
- The experts may revise estimates in the light of forecasts made by other experts.
- The advantage of Delphi technique is that it helps individual panel members in assessing their forecasts. However Delphi method is quite expensive.
- Often, the most knowledgeable experts in the industry will command more fees. Besides, those who consider themselves as experts may be reluctant to be influenced by the opinions of others on the panel.


Thank you