

Segment: Basics of Managerial Economics

Topic: Methods or Techniques of Demand Forecasting

Methods or Techniques of Demand Forecasting

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Introduction

Demand forecasting is a highly complicated process as it deals with the estimation of future demand. It requires the assistance and opinion of experts in the field of sales management. While estimating future demand, one should not give too much importance to either statistical information, past data or experience, intelligence, and judgment of the experts. To become more realistic, demand forecasting should consider the two aspects in a balanced manner. The application of common-sense is needed to follow a pragmatic approach in demand forecasting. In this topic, we will discuss the survey methods of demand forecasting.



Learning Objectives

At the end of this topic, you will be able to:

- Identify the methods of demand forecasting
- discuss the survey methods of demand forecasting.

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1. Methods or Techniques of Demand Forecasting

Broadly speaking, there are two methods of demand forecasting namely, survey methods and statistical methods. Figure 1 depicts the methods of demand forecasting.

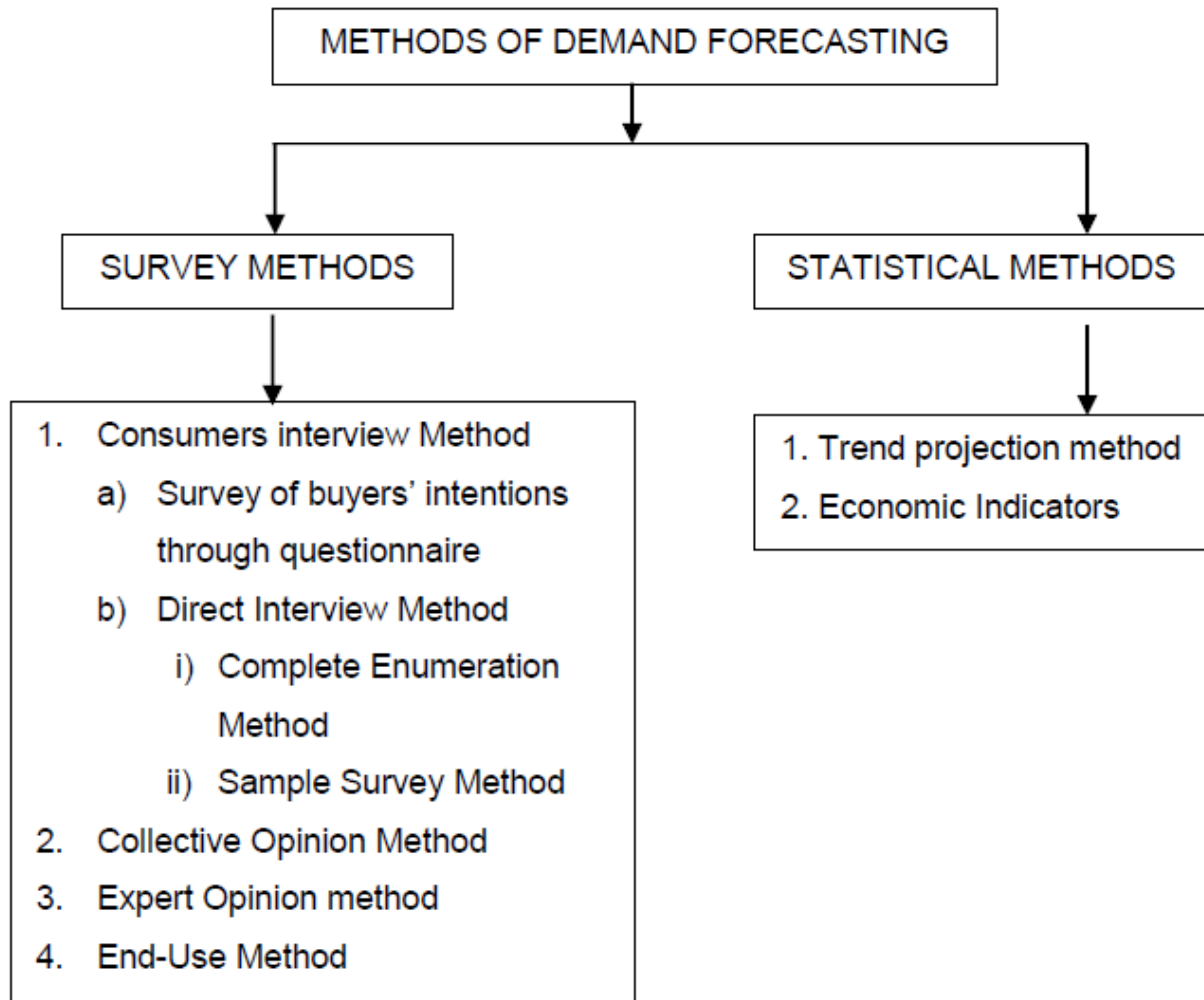


Fig. 1: Methods of Demand Forecasting

2. Survey Methods

In this section, we will discuss the survey methods. Survey methods help us in obtaining information about the future purchase plans of potential buyers through collecting the opinions of experts or by interviewing the consumers. These methods are extensively used in the short run and for estimating the demand for new products. There are different approaches to survey methods. Let us discuss them in detail.

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Consumers' interview method: Under this method, efforts are made to collect the relevant information directly from the consumers with regard to their future purchase plans. In order to gather information from consumers, a number of alternative techniques are developed from time to time. Among them, the following are some of the important ones:

a) Survey of the buyer's intentions or preferences: It is one of the oldest methods of demand forecasting. It is also called "Opinion surveys". Under this method, consumer-buyers are requested to indicate their preferences and willingness about particular products. They are asked to reveal their future purchase plans with respect to specific items. They are expected to give answers to questions like what items they intend to buy, how much quantity, why, where, when, what quality they expect, how much money are they planning to spend, etc. Generally, the field survey is conducted by the marketing research department of the company or by hiring the services of outside research organizations consisting of learned and highly qualified professionals.

The heart of a survey is the questionnaire. It is a comprehensive one, covering almost all questions either directly or indirectly in a most intelligent manner. It is prepared by an expert body who are specialists in the field of marketing.

The questionnaire is distributed among the consumer buyers either through mail or in person by the company. Consumers are requested to furnish all relevant and correct information.

The next step is to collect the questionnaire from the consumers for the purpose of evaluation. The material collected is classified, edited, and analysed. If any bias, prejudices, exaggerations, artificial or excess demand creation, etc., are found at the time of answering, they are eliminated.

The information so collected is consolidated and reviewed by the top executives with a lot of experience. It is examined thoroughly. Inferences are drawn, and conclusions are arrived at. Finally, a report is prepared and submitted to management for taking final decisions.

The success of the survey method depends on many factors including:

1. The nature of the questions asked
2. The ability of the surveyed
3. The representative of the samples
4. Nature of the product

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5. Characteristics of the market

Consumer-buyers' behaviour, intentions, attitudes, thoughts, motives, honesty, etc.

7. Techniques of analysis

8. Conclusions are drawn, etc

The management should not entirely depend on the results of the survey reports to project future demand. Consumer buyers may not express their honest and real views and they may give only the broad trends in the market. In order to arrive at the right conclusions, field surveys should be regularly checked and supervised.

This method is simple and useful to the producers who produce goods in bulk. Here, the burden of forecasting is put on customers.

However, this method is not very useful in estimating the future demand of the households, as they run in large numbers and do not express their future demand requirements, freely. It is expensive and difficult. The preparation of a questionnaire is not an easy task. At best, it can be used for short term forecasting.

b) Direct interview method: Experience shows that due to varied reasons, many customers do not respond to questionnaires addressed to them, even if it is simple. Hence, an alternative method is developed. Under this method, customers are directly contacted and interviewed. Direct and simple questions are asked to them. They are requested to answer specifically about their budget, expenditure plans, particular items to be selected, the quality and quantity of products, relative price preferences, etc. for a particular period of time. There are two different methods of direct personal interviews. They are as follows:

i) Complete enumeration method: Under this method, all potential customers are interviewed in a particular city or a region. The answers elicited are consolidated and carefully studied to obtain the most probable demand for a product. The management can safely project the future demand for its products. This method is free from all types of prejudices. The result mainly depends on the nature of the questions asked and answers received from the customers.

However, this method cannot be used successfully by all sellers in all cases. This method can be employed to only those products whose customers are concentrated in a small region or locality. In case consumers are widely dispersed, this method may not be physically adopted or

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prove costly both in terms of time and money. Hence, this method is highly cumbersome in nature.

ii) Sample survey method or the consumer panel method: Experience of the experts show that it is impossible to approach all customers therefore, careful sampling of representative customers is essential. Hence, another variant of a **Consumers' interview method:** Under this method, efforts are made to collect the relevant information directly from the consumers with regard to their future purchase plans. In order to gather information from consumers, a number of alternative techniques are developed from time to time. Among them, the following are some of the important ones:

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The success of the survey method depends on many factors including:

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2. The ability of the surveyed
3. The representative of the samples
4. Nature of the product
5. Characteristics of the market

Consumer-buyers' behaviour, their intentions, attitudes, thoughts, motives, honesty etc.

7. Techniques of analysis
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ii) Sample survey method or the consumer panel method: Experience of the experts show that it is impossible to approach all customers therefore, careful sampling of representative customers is essential. Hence, another variant of complete enumeration method has been developed, which is popularly known as the sample survey method. Under this method, different cross-sections of customers that make up the bulk of the market are carefully chosen. Only such consumers, who are selected from the relevant market through some sampling method, are interviewed or surveyed. In other words, a group of consumers are chosen and queried about their preferences in concrete situations. The selection of a few customers is known as sampling. The selected consumers form a panel. This method uses either random sampling or the stratified sampling technique. The method of the survey may be a direct interview or mailed questionnaire to the selected consumers. On the basis of the views expressed by these selected consumers, the most likely demand may be estimated. The advantage of a panel lies in the fact that the same panel is continued, and a new expensive panel does not have to be formulated, every time a new product is investigated.

As compared to the complete enumeration method, the sample survey method is less tedious, less expensive, much simpler, and less time consuming. This method is generally used to estimate short run demand by government departments and business firms.

The success of this method depends upon the sincere co-operation of the selected customers. Hence, the selection of suitable consumers for the specific purpose is of great importance.

Even with careful selection of customers and the truthful information about their buying intention, the results of the survey can only be of limited use. A sudden change in price, inconsistency in buying intentions of consumers, the number of sensible questions asked, and dropouts from the panel for various reasons put a serious limitation on the practical usefulness of the panel method.

c) Collective opinion method or opinion survey method: This is a variant of the survey method. This method is also known as “Sales-force polling” or “Opinion poll method”. Under this

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method, sales representatives, professional experts, the market consultants, and others are asked to express their considered opinions about the volume of sales expected in the future. The logic and reasoning behind the method is that these salesmen and other people connected with the sales department are directly involved in the marketing and selling of the products in different regions. Salesmen, being very close to the customers, will be in a position to know and feel the customers' reactions towards the product. They can study the pulse of the people and identify the specific views of the customers. These people are quite capable of estimating the likely demand for the products with the help of their intimate and friendly contact with the customers and their personal judgments based on past experience. Thus, they provide approximate, if not accurate estimates. Then, the views of all salesmen are aggregated to get the overall probable demand for a product.

Further, the opinions or estimates collected from the various experts are considered, consolidated, and reviewed by the top executives to eliminate the bias, optimism, or pessimism of different salesmen. These revised estimates are further examined in the light of factors like proposed change in selling prices, product designs, advertisement programs, expected changes in the degree of competition, income distribution, population, etc. The final sales forecast would emerge after these factors have been considered. This method heavily depends on the collective wisdom of salesmen, departmental heads, and the top executives.

It is simple, less expensive, and useful for short run forecasting, particularly in the case of new products.

The main drawback is that it is subjective and depends on the intelligence and awareness of the salesmen. It cannot be relied upon for long term business planning.

d) Delphi method or expert's opinion method: This method was originally developed at Rand Corporation in the late 1940s by Olaf Helmer, Dalkey, and Gordon. This method was used to predict future technological changes. It has proved more useful and popular in forecasting non-economic rather than economic variables.

It is a variant of opinion poll and survey method of demand forecasting. Under this method, outside experts are appointed. They are supplied with all kinds of information and statistical data. The management requests the experts to express their considered opinions and views about the expected future sales of the company. Their views are generally regarded as most objective ones. Their views generally avoid or reduce the "Halo – Effects" and "Ego –

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Involvement” of the views of the others. Since experts’ opinions are more valuable, a firm gives lot of importance to them and prepares their future plan on the basis of the forecasts made by the experts.

e) End use or input – output method: Under this method, the sale of the product under consideration is projected on the basis of demand surveys of the industries using the given product as an intermediate product. The demand for the final product is the end-user demand of the intermediate product used in the production of the final product. An intermediate product may have many end-users, for e.g., steel can be used for making various types of agricultural and industrial machinery, for construction, for transportation, etc. It may have demand both in the domestic market as well as the international market. Thus, end–use demand estimation of an intermediate product may involve many final goods’ industries using this product, at home and in abroad. After we know the demand for final consumption of goods including their exports, we can estimate the demand for the product which is used as intermediate goods in the production of these final goods with the help of input–output coefficients. The input–output table containing input–output coefficients for particular periods is made available in every country either by the Government or by research organizations.

This method is used to forecast the demand for intermediate products, only. It is quite useful for industries which are large producers of goods, like aluminium, steel, etc.

The main limitation of the method is that as the number of end-users of a product increase, it becomes more inconvenient to use this method.

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2. Summary

Here is a quick recap of what we have learnt so far:

- Broadly speaking, there are two methods of demand forecasting namely, survey methods and statistical methods.
- Survey methods help us in obtaining information about the future purchase plans of potential buyers through collecting the opinions of experts or by interviewing the consumers. These methods are extensively used in short run and for estimating the demand for new products.
- Under consumers interview method, efforts are made to collect the relevant information directly from the consumers with regard to their future purchase plans. In order to gather information from consumers, a number of alternative techniques are developed from time to time.
- Under direct interview method, customers are directly contacted and interviewed. Direct and simple questions are asked to them. They are requested to answer specifically about their budget, expenditure plans, particular items to be selected, the quality and quantity of products, relative price preferences, etc. for a particular period.
- Under complete enumeration method, all potential customers are interviewed in a particular city or a region. The answers elicited are consolidated and carefully studied to obtain the most probable demand for a product.
- As compared to the complete enumeration method, the sample survey method is less tedious, less expensive, much simpler and less time consuming. This method is generally used to estimate short run demand by government departments and business firms.
- Under end use or input – output method, the sale of the product under consideration is projected on the basis of demand surveys of the industries using the given product as an intermediate product.