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A Survey of Forecasting Techniques in Marketing Area

Abstract

Research on forecasting is extensive and includes many studies that have tested alternative methods to determine the most effective method of forecasting. This paper reviews the empirical research in order to provide guidelines on forecasting in marketing. The coverage includes intensions, Delphi, role playing,conjoint analysis, judgemental bootstrapping , expert systems and econometric methods.

Keywords: Delphi Method, Conjoint Analysis, Judgemental Bootstrapping, Econometric Methods.

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Introduction

Marketing research is a systematic and objective study of problems pertaining to the marketing of goods and services. It is not restricted to any particular area of marketing but is applicable to its phases and aspects. The function of marketing research is to provide information to management so that it can identify and react to marketing opportunities and problems. It also provides the requisite information for making marketing decisions. This paper is organized to provide a framework for forecasting to the managers having unrealistic expectations about forecasting accuracy . It also provides an agenda for future research.

Aim of the Study

1. To provide information to management so that it can identify and react to marketing opportunities and problems.
2. To provide the requisite information for making marketing decisions.
3. To provide benefit of the research to the investors, shareholders, directors, regulators and other financial institutions as well as researchers in acadmea.

Different Forecasting Techniques

Forecasting includes methods that derive from judgemental sources . These methods and the relationship between them can improve forecasting accuracy. We provide a brief description of methods and their application.

Methods Based on Judgement

1. Intensions(or user's expectation)
2. Conjoint analysis
3. Judgemental bootstrapping
4. Role playing
5. Expert opinion

Methods Based on Statistical Sources

1. Extrapolation
2. Rule based forecasting
3. Expert opinions
4. Econometric methods

Methods Based on Judgement

Intensions (Or Users' Expectations)

With intensions surveys, people are asked to predict how they would behave in various situations . Intentions surveys are widely used for new product forecasting (i.e. when sales data are not available).It is most suitable when the number of buyers is small such as incase of industrial product. Mortwitz (2001) draws upon the best way to assess intensions to develop principles for using intensions in forecasting. It is difficult to use this method when the number of users is large .Though it indicates the users' intensions to buy, the actual purchase may be far less at a subsequent period.

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Conjoint Analysis

Conjoint analysis is a survey based method manager often use to obtain consumer input to guide their new product decisions. It is also known as Descrete Choice Estimation or Stated Preference Research.It involves presenting people with choices and then analysing what were the drivers for those choices.The commercial popularity of the methods suggests that the conjoint results improve the quality of those decisions. The output from conjoint analysis is a measurement of utility or value and is perfect for answering questions such as " which should we do ;build in more features or bring our prices down ?" Or " which of these changes will hurt our companions most ?" In addition, these utilities are used to build **"**market models**"** that enables forecasts to be made what the market would choose given different product or service designs. It will not only indicate the relative importance of product attributes but also the manner in which they are related to each other. This will enable the researcher to identify the best combination of the product attributes. Conjoint analysis doesn't always fit particularly if there are many levels or a deeper more emotional drive to decision -making.

Judgemental Bootstrapping

Judgemental bootstrapping is a type of expert system that infers that the expert's model by examining predictions made by that person (or group). The procedure is simple. Give a set of forecasting problem to an expert. Then using his forecasts and the inputs that he used, develop a model of his process by running a regression. The concept of judgemental bootstrapping was originally conceived and tested in the early 1900s in a problem concerning and an expert's forecast of the quality of the next summer's corn crop.By applying a Person's rules more consistently than the person can.

Judgemental bootstrapping produces reliable forecast. Judgemental bootstrapping is useful for comparing policy alternatives because it yields consistent forecasts. It is especially useful when data on the dependent variableis lacking or when the historical data show little variation. However forecasts seldom use judgemental boostrapping because they have too much confidence in their own opinions.

Role Playing

Role playing is useful for marketing forecasts of the behavior of the individuals who are interacting with others and especially when the situation involves conflict. Although role playing provides a realistic simulation of the interactions and have considerable potential for forecasting . Currently, it is seldom used .(Armstrong 2016)

Expert Opinion

When an expert is asked to predict the behavior of a market, the expert may be exceptional, there is no need to claim that this is a representative expert. The accuracy of expert forecasts can be improved through the use of structured methods such as the Delphi procedure.

Delphi Method

Delphi method is a structured communication technique or method originally developed as a systematic, interactive forecasting method which relies on a panel of experts. The experts answer questionnaires in two or more bounds.The anonymous responses are aggregated and shared with the group after each round. The experts are allowed to adjust their answers in subsequent rounds.

After receiving anonymous summery feedback on the forecasts made by other experts, further forecast is made. An approach of this type is more appropriate when long – term forecasts are involved.Delphi method retain the wisdom of a group and at the same time reduces the effect of group pressure. Cost effective and flexible /adaptable fast versatile. The anonymity and confidentiality of responses is preserved.Bring geographically dispersed panel experts together.

Method Based on Statistical Sources (Objective or Quantitative)

Extrapolation (Or Univariate Time-Series Model)

In time-series forecasting, the past data sales are extrapolated as a linear or a curvilinear trend. Even if such data are plotted on graph, one can extrapolate for the desired time –period.

Extrapolation can also be made with the help of statistical techniques.

When the values are to be estimated for the future period, the methods of obtaining them is called extrapolation. Thus extrapolation is made on the basis of past information.

Assumptions of Extrapolation

There is no violent or disturbing situation in the intervening period.

There is uniformity in the changes of known figures. It means that there is regularity in fluctuation and rise and fall is uniform.

There is definite and stable relationships between both the variables.

Empirical studies have led to the conclusion that relatively simple extrapolation methods perform as well as more complex methods. e. g. Box –Jenkins procedure, one of the more complex approaches has produced no measurable gains in forecast accuracy relative to simple procedures.

Rule- Based Forecasting

Rule –based forecasting is an expert system that uses judgement to develop and apply rules for combining extrapolation. The judgement comes from two sources – forecasting expertise and domain knowledge.Rule-based forecasting uses rules to combine forecasts from simple extrapolation methods Weights for combining the rules use statistical and domain based features of time-series. It was originally developed, tested and validated only on annual data.

Econometric Methods

Econometric method is the process of making procedures about the movements of the economy. Forecasts can be carried out at a high level of aggregation. e.g. for GDP, inflation, unemployment or the fiscal deficit or at a more disaggregated level for specific sectors of the economy or even specific firms.They can relate directly to planning and decision making .They can provide framework to examine the effects of marketing activity as well as key concepts of the market and the environment thus providing information for contingency planning. Incorrect assumptions about the outside or exogenous variables which are called input errors.

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Econometric equations that are only approximations to truth. As compared to an ordinary regression equation, econometric equations bring out the casualities involved more distinctly. The econometric models enable them to predict turning points more accurately. However, their use at the micro level for forecasting has so far been extremely limited.

Limitations of Forecasting Techniques in Marketing Area

1. Very many times, marketing research tends to be fragmentary in its approach as a result of which it becomes difficult to have an overall perspective in which a marketing problem is to be viewed and studied.
2. Marketing research is criticized on the ground that it becomes too superficial and faulty in industry.
3. There is an absence of a meaningful dialogue between the marketing management and marketing research team. As a result, marketing researchers get divorced from the main stream of marketing.
4. Marketing research is not an exact science. Analytical tools of marketing research are still deficient and cannot give us a precise data , especially on the behavioral aspects.

Conclusion

Significant gains have been made in forecasting for marketing in the past quarter century.Advances have occurred in the development of qualitative method such as Delphi, Role playing, intensions, boots trapping and opinion surveys. They have also occurred for quantitative methods such as extrapolation and econometric methods. In the 1990s , gains have come from positive integration of statistical and judgemental forecasts. The challenge now is to build up experience in applying these methods so generalization can be made about which methods are more appropriate in the different areas where forecast is needed in marketing. Moreover, efforts should be made to ensure that forecasts are free from political consideration in a firm .Emphasis should be given in gaining agreement about the forecasting methods rather than the forecasts.

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