

Role of Statistics in Business Sector

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ABSTRACTS

Statistical research in business enables managers to analyze past performance, predict future business practices and lead organizations effectively. Statistics can describe markets, inform advertising, set prices and respond to changes in consumer demand. Descriptive analytics look at what has happened and helps explain why. By using historical data, managers can analyze past successes and failures. This is also called “cause and effect analysis.” Some common applications of descriptive analytics include sales, marketing, finance and operations. Statistical research gives managers the information they need to make informed decisions in uncertain circumstances. When managers analyze statistical research in business, they determine how to proceed in areas including auditing, financial analysis and marketing research.

I. INTRODUCTION

Statistics transforms raw data into meaningful results. It is the science behind the identification, collection, organization, interpretation, and presentation of data. Data could be qualitative or quantitative. Statistics makes information-based decision-making easier.

Statistics comprises useful data interpretation tools like mean, median, mode, standard deviation, coefficient of variance, and sample tests. Raw financial data in a numerical format is interpreted using mathematical formulas. Many sectors like science, government, manufacturing, population, psychology, banking, and financial markets rely on statistical data. The statistical process includes collection, organization, summarization, interpretation, and reporting of information.

Statistics is the systematic processing and interpretation of raw data to compile a conclusive result. These reports are drafted in a numerical format. They are presented in a succinct manner so that one can read and understand easily.

Financial data is in a numerical format and includes details about portfolios, investments, and assets. Historical data and present data are

interpreted using mathematical formulas. Forecasts are based on available information and requirements.

Application of Statistics

Statistics is indispensable for decision-making in various sectors and verticals. It is applied in marketing, e-commerce, banking, finance, human resource, production, and information technology. In addition, this mathematical discipline has been a prominent part of research and is widely used in data mining, medicine, aerospace, robotics, psychology, and machine learning.

Not to forget the economics, government, and public sectors where statistical data is a significant part of decision-making. For example, it is used for public surveys, weather forecasts, sports scoring, and budgeting.

OBJECTIVES

1. To study the role of statistics in the business & Industry.
2. To study the importance of statistical analysis.

RESEARCH METHODOLOGY

The study is based on secondary data. The data has been collected from various websites, newspapers and reputed journals.

ROLE OF STATISTICS IN FINANCE

In the finance sector, statistical data facilitate decision-making. For instance, a watch manufacturing company can use statistical tools to determine the percentage of defective watches in every lot.

At a macro level, it helps in understanding a country's financial state and measuring economic growth.

At a micro-level, statistics helps analysts determine a company's business income, earnings and revenue-generating capacity.

Be it preparing budgets, financial forecasts monitoring a company, or a country's performance, statistics are everywhere.

An example to understand the application of statistics: PNU Productions manufactures fashion clothes for kids. Now, the company is planning to expand into a new line of business, i.e., fashion garments for women. However, before expanding, the management prepares a forecast of customer preferences and expectations.

There are around 5 million women who can potentially be target customers. So, the management decided to survey 1000 women from different areas and of varying age groups. The survey aimed to find out needs and choices in fashion outfits. This way, the statistical analysis helped the company make an effective decision.

Statistics can be used for making sales projections, financial analysis of capital expenditure projects, constructing profit projections for a new product, setting up production quantities, and making a sampling analysis to determine the quality of a product. Using statistics provides real data about complex situations rather than making decisions based on unsubstantiated hunches.

THE IMPORTANCE OF STATISTICAL ANALYSIS IN MANUFACTURING COMPANIES

Through statistical analysis, companies can make good use of big data for greater success. This is a process that involves the collection, organization and critical examination of data to draw some conclusions. Statistical analysis in business can be achieved by hiring statisticians and making use of analysis software.

Following nine key benefits that manufacturing companies can realize by investing in statistical analysis.

a) Identifying Customer Base

A key benefit of statistical data analysis is that it plays a big role in identifying a company's customer base. When a business knows who their customers are, it becomes easier to manufacture products that meet the specific needs of the target group. Additionally, segmenting a customer base helps in targeted marketing which is more cost-effective and efficient compared to focusing on a general market.

b) Identifying Production Quantities

Analyzing data can help in identifying the ideal production quantity that will meet the demands of the target customer. When the production quantity is lower than the demand, the company will end up missing out on sales and profits. Excess production should also be avoided because it can cause a negative impact. For

instance, the company may be forced to lower prices in order to sell the excess products. By analyzing demand, sales history, customer data and other pieces of information, manufacturing companies can come up with more accurate figures for the production quantity.

c) Ability to Plan Production Based on Seasons

The demand for certain products fluctuates depending on the season. Some products will have a high demand during the holiday seasons whereas others will have a high demand during winter. Statistical analysis helps in identifying how consumer preferences change with the seasons, and this aids in planning production based on those preferences. By taking into account changing preferences and demand, manufacturing companies can exhaust all opportunities throughout the year.

d) Finding a Suitable Business Location

Analysis can also help in finding a suitable business location. You should choose a location wisely because it has an impact on your productivity, sales and operational costs. A good location is one where your customers can conveniently find you and you can easily reach out to them, one that gives you easy access to all the resources you need to keep your business going, and one whose cost isn't above your budget. Also, it should be one that gives you an advantage over your competition.

In that light, when choosing a location, you have to gather and analyze information about your customers, the characteristics of the locations you are considering, business needs, competition in the area, and business trends.

e) Identifying the Best Marketing Strategies

With so much competition in the manufacturing industry, you will require some solid marketing strategies to succeed. In addition to segmenting customers, statistical analysis can also help in identifying the best channels to use to communicate with customers and prospects. Using the right channel will boost the popularity of your brand and increase sales and profits. Also, when you stop focusing on the wrong audience, you get a better return for your marketing efforts while keeping marketing costs low. Finally, through analysis, companies can measure the success of their marketing efforts. You should assess the performance of your marketing campaigns regularly to avoid spending money on strategies that bear no fruit.

f) Developing New Products

Introducing new products is one of the strategies that manufacturing companies use to expand and increase profits. However, introducing new products is not easy and, if not done right, the product will not sell. An article on Harvard Business Review highlights a company's failure to support fast growth, lack of consumer education and lack of market for the product as some of the key causes of product launches fail.

These are some of the factors you need to take into account when launching a new product to ensure it is successful. Statistical analysis can provide valuable information needed to make decisions when introducing new products in the market. Analysis can be done to establish the reliable markets for the product, and also to predict demand and sales. It can also help in identifying the perfect launch timing.

g) Productivity Evaluation and Improvement

Profitability of manufacturing companies relies largely on productivity. Statistical analysis can help in evaluating the productivity of your team members and departments and identifying measures you can take to boost productivity. This can be achieved by analyzing factors such as units produced or tasks accomplished, input and output, sales and number of customers, among many others. Improvements could be as simple as reorganizing the work schedules. In other cases, you may have to invest in bigger or more advanced equipment to boost productivity. An analysis of your company's data will show you the areas that are ruining the productivity in your company. If you haven't done a performance evaluation in a while, consider seeking for help from a statistician with an online masters in statistics.

h) Establishing Future Capital Needs

Statistical analysis can help in projecting the future financial needs of your company. This is important in ensuring that you get enough time to plan for expansion. In addition to future financial needs, statistical analysis can also help in making solid financial decisions for the present.

i) Accurate Decision Making

Overall, statistical analysis can help manufacturing companies in making more accurate decisions. Since such decisions are backed up by information, they tend to be more reliable compared to the ones made based on guesswork.

Analysis reduces the risk of making wrong decisions that can lead to company losses.

To get the most out of statistical analysis, don't just make use of tools. Get some human input from qualified statisticians who have the skills to obtain and analyze complex data. Small manufacturing companies with fewer data analysis needs can hire freelance statisticians who are cheaper than full time employees.

II. CONCLUSION

Statistical data analysis plays a crucial role in scientific discoveries, research, economic decisions, government budgeting, public welfare activities, weather forecast, and stock analysis. In addition, this mathematical discipline makes decision-making more objective. It is an essential part of day-to-day life even. For instance, it is used in schools and colleges to find the average percentage of the students. Similarly, In households, it is used to determine the per-day expense.

REFERENCES

- [1]. <https://corporatefinanceinstitute.com/resources/knowledge/basic-statistics-concepts/>
- [2]. <https://www.wallstreetmojo.com/statistics/>
- [3]. <https://www.oreilly.com/library/view/statistics-for-finance>
- [4]. <https://www.toptal.com/finance/data-analysis-consultants/measuring-company-growth>
- [5]. <https://corporatefinanceinstitute.com/resources/knowledge/other/statistics/>
- [6]. <https://www.nobledesktop.com/classes-near-me/blog/role-of-statistics>
- [7]. <https://corporatefinanceinstitute.com/resources/data-science/basic-statistics-concepts/>
- [8]. https://iase-web.org/documents/papers/icots7/5G2_GI ME.pdf?1402524965
- [9]. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4562097/>