

# Essential of Mathematics in Business World

Quantitative Approach

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**Abstract:- Mathematics is universal it is used everywhere but it has a very important role in the business world. Managers use mathematic techniques (quantitative techniques) for making decision. Quantitative techniques are based on calculations that represent real time scenarios and helps in understanding the complex problems faced by the managers. As firms cannot work on probabilities these techniques are used by managers to gain accuracy and precision.**

## I. INTRODUCTION

The “science of quantity” or the “science that draws necessary conclusions”. Mathematics is basically the study of intuitive relation which enables us to understand relation between physical and natural phenomena, it is the study of manipulation of the meaningless symbols of first order language. Mathematics the subject of ‘insightful’ is generally used by everyone in their day to day life. Be it a top line manager of a firm making decision for expanding his firm to a teenager purchasing an outfit. Everyone uses mathematics in some way for comparison as it is easier to compare with numbers.

## II. USE OF MATHEMATICS

Decision making is an important component of business success. Decision based on foundation of knowledge and sound reasoning can lead into long term prosperity. Mathematics in the business world has a great role in decision making as decisions made by managers are based on research done which includes quantitative technique.

Quantitative approach is basically use of analytical and numeric techniques that bring factual data which makes it easier to compare real time scenarios and helps in studying the market. Quantitative techniques are used by every manager at every level but level of usage increases when we focus from first line to top line management as the top line management needs to solve more complex problems and for which they need number to get a good idea about the market. Quantitative approach basically focuses on improving managerial decision making by applying:

- Statistics
- Optimization Models
- Information Models

A. *Quantitative approach is divided into three branches:*

➤ *Management Science*

(Focuses on development of mathematical models)

➤ *Operation Management*

(Focuses on helping organization to produce output more efficiently)

➤ *Management operation system*

(Focuses on helping manager to design information system that provides information about events)

B. *Application of quantitative approach:*

➤ *Resource allocation*

Process of assigning and scheduling available resources in most effective and economical way, this is based on early estimation of project size, completion time which is done through quantitative approach.

➤ *Inventory management*

Inventory management involves keeping track of a company’s stocked good. Effective inventory management is necessary for ensuring a business has enough stock on hand to meet customer demand. Estimation of upcoming demand and supply which is essential for inventory management is done through quantitative technique.

➤ *Quality Management*

Quality management is used to ensure that an organization product or service is consistent, it is not only focused on quality of product but is also focused on method to achieve it. Estimation of production days, number of workers required is done through quantitative approach.

➤ *Advantages of quantitative techniques:*

- Adds accuracy, precision and factual data.
- Tends to be thorough and analytical.
- Models make it easier to consider alternatives.
- Provides a framework for analysis and discussion.
- Decreases the amount of decisions taken on intuition.

➤ *Disadvantage of quantitative technique*

- Sometimes difficult to apply in real world.
- Concentrates only on factual data which is available.
- Models are based on assumption.
- Instant decision cannot be taken through quantitative approach as quantitative technique is based on collection of data.

“A major strength of quantitative approach is the depth to which explorations are conducted and descriptions are written, usually resulting in sufficient details of the reader to grasp idiosyncrasies of the situation.”

## III. CONCLUSION

Every coin has two faces each face of the coin is distinct with some advantages and disadvantages but use of

quantitative technique is essential for a firm as firms cannot work on probabilities. Despite having some disadvantages managers prefer quantitative techniques because it provides accuracy and precision and the disadvantages of quantitative techniques can be nullified if managers do a rigorous study of the market.

### REFERENCES

For writing this article I have taken help from the following websites:

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