MATHEMATICS IN ECONOMIC, SOCIAL AND MANAGEMENT SCIENCES

A topic I almost skipped this topic in this book. I believe it should be fine though because from all you have seen in this book, I'm sure you should be able to list even ten applications of mathematics to your faculty and department and to your business life on a general note.

Yes, I mean your department.

The use of some concepts of mathematics such as matrices, calculus and most importantly, optimization are very important aspects in social sciences and economics in general.

Mathematics has become so basic that its usefulness has become so important, indispensable and overwhelming in economic and management sciences. Economists and management scientists nowadays employ a very

increasing use of mathematics for different sorts of analysis.

Mathematics is not a different branch of study in economics and management sciences but is rather merely an approach to express phenomena and events of economics and management sciences.

Mathematics is not only a powerful tool for knowing logical deduction in social and management sciences, it is also used to allocate solutions to resource management and also helps in making decisions between variables involved in a problem. Mathematics must be used in economics and indeed in social and management sciences.

Mathematics basically plays two roles in economic and management sciences which are:

- Direct roles
- Indirect roles

The direct roles involve comparative statics analysis in economics. Such analyses are often difficult and complicated to deal with unless with the aid of mathematics.

The indirect roles involve static and economic problems stated in mathematical forms in order to subject such problems to scrutiny and examination and possibly expose them in order to correct fallacies that would have remained concealed in a mass world, if the knowledge of mathematics is not involved.

***

We will be seeing several uses over here for the sake of examination situations, I'm very sure you have seen real applications but for the sake of putting them down, here are quite a number of applications:

- It helps social scientists to state their research problems in specific and clear terms.

- Mathematics provide considerable insight into the way by which numerical information can be generated and presented to aid decision making in the social and management science.
- It helps in Identifying and quantifying the relationship between variables that determine the outcome of the decisions and their alternatives in the social and management science.
- It minimizes subjectivity and enhances the chance of making objective decision.
- It assists in the prediction or forecasting of future events.
- The language of mathematics is very easy to understand.
- Mathematics makes problems that could take lengthy periods to be resolved in minutes;

- With calculus, we can find the relative optima of different economical functions to easily find desired optimum results;
- Mathematical optimization helps consumers to maximize their utilities; this helps consumers in making decisions.
- Mathematics allows treatment of multi-variables cases. With the concept of partial differentiation, we can find optimal points for functions of multiple situations.
- Mathematics is a fast method of solving critical problem that are relevant to the study of economics and management science for example, the price of the quantity demand and supply of a commodity.
- The use of matrices is very useful in solving cases of multiple inputs;

- Mathematical optimization helps producers to make optimum number of products to help minimize loss.
- Mathematical optimization helps producers help producers in production to find optimum quantity to minimize cost and maximize revenue.
- Mathematics help firms to be able to achieve equilibrium between all factors of production in the production function and help in using the production functions to maximize the quantity of products produced while maintaining minimum cost.

Like everything in life though, as beautiful as mathematics is in economic and management sciences, it still has some shortcomings. Such shortcomings include;

- Real life human affairs are too complex for mathematics precision and as such, the knowledge of mathematics cannot solve everything.
- Even though the language of mathematics is very easy to understand, the language is not universal, that is, it is not notable, and not everybody understands it.
- Some assumptions in mathematics are used for convenience research but in reality, they do not hold.

Tons of applications of mathematics up there! You can still brainstorm and think of more if you like.

Don’t mind the few shortcomings mentioned, mathematics is practically indispensable in the field of economics and social

sciences, **just indispensable.** **Don't let anyone lie to you, you really should like mathematics.** You really need to love and cherish it!

I hope you enjoyed SSC106?

I'll cherish your feedbacks, find the contact of the author in the 'ABOUT' section of this application.