

The Salience of Quantitative Methods Applied in Marketing

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Abstract

To quote the Operational Research definition, which includes the Quantitative Methods, given by the British Standard, this article is concerned with: the attack of modern science on complex problems arising in the direction and management of large systems of men, machines, materials and money, in industry, business, government and defence. The distinctive approach is to develop a scientific model of the system incorporating measurements of factors such as change and risk, with which to predict and compare the outcome of alternative decisions, strategies or controls. The purpose is to help management to scientifically determine its policy and action.

Key Words: *Operation Research, turbo marketing, Statistics, Information Theory*

Introduction

This article is designed to provide a sound understanding of Quantitative Methods Applied in Marketing (QMAM acronym) and is particularly relevant for:

1. Students preparing themselves for professional examinations of the following situations: Marketing Research Techniques, Statistics and Valuation in Marketing, Information Theory Applications in Marketing, Operations and Decision in Marketing Research, Mathematical-Statistics in Turbomarketing, a.s.o;
2. Students on Economics/Management/Business Administration Higher Level Courses and undergraduates reading Business Studies, Marketing Cases and any course including Quantitative Techniques and Methods;
3. Managers and others in industry, commerce, and local authorities who wish to obtain a working knowledge of quantitative methods in marketing to aid them in their own work and to facilitate communication with statisticians, teachers in applied Operations Research or Mathematics and marketing research specialists.

The Salience of Different Approaches

The essential features of the QMAM approach connected with the above summary definition are:

1. Application of a model-based scientific approach;
2. Systems approach to organizations;
3. The recognition of risk and uncertainty;
4. Assistance to management decision-making and control.

The syllabuses at which this intended course is aimed assume a basic knowledge of mathematics and statistics, which would normally be gained, in earlier studies (Foundation Level studies). Accordingly this forecomming course does not cover foundation level mathematics and statistics, but because of the step/by/step teaching approach used and the inclusion of some revision material (e.g. probability, information theory, marketing mix concepts) it should be readily comprehensible to all students, including those whose basic mathematics and statistics are a little rusty.

About the Contents of QMAM

To start with wisdom knowledge future scholars must follow the steps of:

1. Gaining fundamental concepts;
2. Identifying problems, decisions, and research objectives;
3. Research designs;
4. Information systems and secondary data;
5. Planning primary data needs and approaches;
6. Applying Decision theory;
7. Measurement and communication;
8. Composing questionnaires;
9. The sampling process and selection;
10. Probability sampling procedures;
11. Sample-size decisions;
12. Data analysis and interpretation: preliminary considerations;
13. Data analysis: analysis of differences;
14. Data analysis: experimental data;
15. Data analysis: measuring associations (dependence methods);
16. Data analysis: measuring associations (interdependence methods);
17. Presentation of research findings;
18. Monitoring performance and following through;
19. Managing marketing research;
20. Ethical issues in marketing research.

The marketing-management guru, Philip Kotler, describes in any of his tenth edition of the book: *Marketing Management, Analysis, Planning, Implementation and Control*, Prentice-Hall International, Inc., the following characteristics of Good Marketing Research:

- Scientific Method; effective marketing research uses the principles of the scientific method: careful observation, formulation of hypothesis, prediction, and testing;
- Research Creativity; at its best, marketing research develops innovative ways to solve a problem;

- Multiple Methods; competent marketing researchers shy away from over reliance on any one method, preferring to adapt the method rather than the other way around. They also recognize the desirability of gathering information from multiple sources to give greater confidence;
- Interdependence of Models and Data; competent marketing researchers recognize that the facts derive their meaning from models of the problem. These models guide the type of information sought and therefore should be made as explicit as possible;
- Value and Cost of Information; competent marketing researchers show concern for measuring the value of information against its cost. Value/cost helps the marketing research department determine which research project to conduct, which research designs to use, and whether to gather more information after the initial results are in. The cost of research is typically easy to quantify, while the value is harder to anticipate. The value depends on the reliability and validity of the research findings and management's willingness to accept and act on its findings.

This approach must include Scenarios and Related Tasks. An ongoing scenario is centered around an educational establishment which is the source of a variety of problems that lend themselves to solution using a combination of quantitative methods applied in marketing and marketing research.

The Saliency of Student Information Bank

The Student Information Bank must include both the statistical and models bank.

The Statistical Bank is a collection of statistical procedures for extracting meaningful information from data. It contains the usual statistical routines for calculating averages, measures of dispersion, and cross-tabulations of data. In addition to this, students can use various multivariate statistical techniques, Informational Statistics methods to discover important relationships in the data. The statistical bank include analysis as: regression, correlation, factor, discriminant, cluster, conjoint, information, entropy, negentropy. From KISS principle (keep it simple simple) to more advanced techniques, student started using Microsoft EXCEL routines up to SPSS, SAS, and other mathematical-statistics computer packages.

The Model Bank is a collection of models that will help marketers develop better marketing decision. A model itself is a set of variables and their interrelationships designed to represent some real system or process. Models are built by management scientists (the equivalent of Cybernetics, Statistics and Economic Informatics advanced graduates), who apply scientific methodology to achieve understanding, prediction, or control over some management problem.

About Further Tasks and Investigation, Case Studies, Review Questions

This intended course provides all the necessary teaching material for a quantitative methods applied in marketing for scientific management students. It enables students to acquire a sound grasp of both the underlying statistics and mathematics, information statistics and theory of constructing an accurate and workable application and the skills of mathematical-statistics model formulation and validation, interpretation of results and model evaluation.

References

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Relevanța metodelor cantitative aplicate în marketing

Rezumat

Pentru a cita definiția cercetării operaționale, care include și metode cantitative, definiție dată de British Standard, acest articol abordează impactul științei moderne asupra noilor probleme complexe apărute în cadrul managementului sistemelor ample compuse din ființe umane, mașini, resurse materiale și financiare, în industrie, afaceri, guvern și apărare. Această abordare diferită presupune elaborarea unui model științific al sistemului, care să încorporeze măsurări ale unor factori cum sunt schimbarea și riscul, care să servească la previziunea și comparația rezultatelor unor decizii, strategii și sisteme de control alternative. Scopul este acela de a ajuta managementul să își stabilească în mod științific politicile și acțiunile.