

Topics in Management Science

ROBERT E. MARKLAND

Wiley, New York, U.S.A., 1979. 694 pp. £11.95. ISBN 0-471-01745-0

This book was written mainly for business students but it is thorough enough to also be of use to O.R. students.

Half the book is devoted to mathematical programming, including the simplex method, duality and sensitivity, transportation and assignment problems, integer, non-integer and dynamic programming.

The remaining topics, even in a book of this size, are treated rather superficially. These include network models, inventory and waiting line models, markov processes, simulation and decision analysis.

Thus the strong emphasis on linear programming limits the appeal, but the book has many good features. It is well written, each chapter provides a good general introduction to a topic and concludes with an excellent set of problems (even-numbered ones have answers). Some of these problems are computational exercises and some give practice in "formulation". Unfortunately the latter simply require the student to translate a verbal problem into mathematical terms and then to derive a solution, thus continuing the myth that real life problems are just as easy. A few more realistic case studies would have been an advantage.

Each chapter contains a set of references, and the book also provides a calculus review, a revision of linear algebra and various mathematical tables, which make it very self contained.

So much for the conventional book review. Standing back a little from the detailed content, the whole thing is much less satisfying. The book starts promisingly by saying the major objective is to "provide the student with a basic understanding of the usefulness and limitations of a wide range of management science". Unfortunately Professor Markland prejudices this understanding by giving the impression that O.R. techniques have been far more widely and successfully applied than is the case. He finally admits this in the last chapter by saying "The implementation problem has not been resolved, and in many instances has not even been satisfactorily analysed". It is certainly not satisfactorily analysed in this book.

But should it be dealt with in an introductory text? I would say quite definitely, yes. The last sentence of the book is: "Thus to be a truly successful management science practitioner one must not only have a firm understanding of the tools and techniques of the field, but must also be able to effectively utilise the findings of other disciplines, particularly those of the behavioural sciences, in achieving implementation". It is a pity that this sentiment was not put into practice.

This book deals with the applied mathematics aspects of Operational Research well. It fails, as most books do, to give any real guidance on the crucial aspects of (real) problem formulation, and on implementation.

JOHN FRIPP

Operations Research—An Introduction (2nd edn)

H. A. TAHA

Collier/Macmillan, U.K./U.S.A., 1979. 648 pp. £6.50

Taha's book is a well-known standard text. It covers most of the basic techniques but has little on O.R. methodology. There is only one case study discussed, a piece of work done by the author himself over ten years ago. Students would find this book useful because of the range of material it covers, indeed it would almost be easier to say what is not included than what is. I shall stick to the useful reviewing practice and list all the topics: