

Practical Rules for Graphic Presentation of Business Statistics. by L. Edwin Smart; Sam Arnold
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Practical Rules for Graphic Presentation of Business Statistics. *L. Edwin Smart* (Professor of Economics) and *Sam Arnold* (Assistant Professor in Business Research). (Ohio State University.) Columbus, Ohio: Bureau of Business Research, College of Commerce and Administration, Ohio State University, 1947. Pp. xii, 86. $2.00.

REVIEW BY RUDOLF MODLEY
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THE authors of this small book have set themselves the task to write a simple "How to Do" book on the graphic presentation of statistics for businessmen and students. In going about their job they have set forth specific rules applying to all charts and rules applying only to some types of charts. Each text discussion is accompanied by one or more illustrations. The book deals with bar charts, pie charts, line charts, three dimensional charts, pictorial charts, and maps. The last third of the book presents samples of business charts. In presenting text and charts the authors do not discuss why something should be done in a certain way. They rarely present alternative methods of presentation; they only give the rules and leave it at that.

There can be little doubt that a simple book of this nature is badly needed today. The use of charts has been increasing rapidly and many businessmen need quick and simple guidance on how to draw charts. Unfortunately, "Practical Rules" cannot be recommended as filling this need. There are several reasons why it does not.

a) The proof of a chart is in its looks. The least we can expect from a book on graphic presentation is that the charts are well laid out, well designed, and fit harmoniously into the book. This is not the case in the book under review. Nearly all the charts look awkward; they lack proper balance within themselves and on the page. There is poor selection of size for lettering and poor weight selection for rulings and curves, The instructions on lettering sizes (p. 6) are insufficient, instructions on grid and curve weights (p. 34) limited to "light" and "heavy." Unnecessary or incorrect rules, as for instance, "that the grid will be wider than it is long in somewhat the same proportion as 5 is to 3" (p. 7) or that pictorial symbols should be "mere outlines with little detail" (p. 48) also make it more difficult to obtain clear and forceful charts.

b) This leads us to the second shortcoming of the book. Instructions are usually given as if there were "generally accepted standards" of chartmaking. While there are some such standards it is obvious to all of us who deal with charts that effective presentation calls for considerable flexibility. Most of us will make trial layouts before we draw up a chart. We do so because this permits us to make adjustments in the many different elements which go into a chart. We reorganize or eliminate some elements, we emphasize others, we adjust dimensions and sizes of lettering until we are satisfied that the chart is truly effective. Only then do we begin the final draft. If the authors had tried harder to make the draftsman understand what one can "get out"

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of a chart by different treatments instead of giving a set of seemingly inflexible rules, a more helpful book would have resulted.

c) The authors state that they did not want to "give the pros and cons of various practices." (Actually they have done so occasionally displaying a preference for 100 per cent component bar charts over pie charts and absolute component bar charts.) It seems to this reviewer that an objective listing of the advantages and disadvantages of certain types would be essential in a practical book for those who cannot be expected to judge all the elements which go into making a chart correct and effective. Alternative ways of presenting the same set of data would also have been helpful. The wealth of samples included in Brinton's *Graphic Presentation* is a considerable help to the layman. It gives him a chance to select from different methods the one which fits his needs most clearly.

d) This reviewer has spent about twenty-five years in pioneering the development of pictorial presentation of statistical data. The shortcomings of the book under review naturally become most clearly obvious to him at this point. Pictographic presentation is advantageous in a limited field. These limitations in regard to audience, accuracy, and cost should be stated if we are to give a prospective chartmaker practical help. If the chartmaker decides for pictographs he will have to follow a set of simple rules; the authors give one of these and leave out all others. Several ways are available to duplicate pictorial symbols so that charts can easily be prepared. They can be photostated, photo-offset, type-stamped, or rubber stamped. Symbol sheets are sold by some organizations. None of this is mentioned in the book. The stencil suggested in the book is not being used by any chartmaker known to this reviewer. The statement that "pictorial charts are more effective if the classification is qualitative" is not correct. There is ample literature in existence on pictorial presentation to have avoided the textual and graphic shortcomings in this section.

e) A short book of this type needs a bibliography. Many readers will want to know where to turn for more information.

In 1926 the American Society of Mechanical Engineers formed a Sectional Committee on Standards for Graphic Presentation. In April 1936, the Society published a *Code of Preferred Practice for Graphic Presentation—Time-Series Charts.* On the basis of comments and suggestions received, a revision, *Time Series Charts—A Manual of Design and Construction,* was published in November 1938 with the approval of the American Standards Association. Nevertheless, the manual is not a compilation of rigid rules. The Committee believed that effective presentation calls for flexibility of treatment rather than for standardization, that each chart should be individually planned with due reference to the special characteristics of the data and the particular use to which the chart is put. Within these limitations there is now available a set of well-tested rules for the presentation of time-series charts. The authors could have performed a real service to students and businessmen if they had tried to popularize the more important elements

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contained in the manual. At present this little volume, *Time-Series Charts*, is still the best guide for those who want to draw charts of the conventional type.

Control Charts: An Introduction to Statistical Quality Control. *Edward S. Smith* (Professor of Mathematics, University of Cincinnati, Cincinnati, Ohio), New York 18: McGraw-Hill Book Co., Inc. (330 West 42nd St.), 1947. Pp. xi, 161. $3.00. (London, W.C. 2: McGraw-Hill Publishing Co. Ltd. [Aldwych House, Aldwych]. 15*s*.) *Two reviews follow:*

REVIEW BY JOSEPH M. JURAN
Professor of Administrative Engineering and Chairman of the Department
New York University, New York, N. Y.

HERE is another of the numerous books now emerging to expound the use of statistical methods to control quality of product.

There is a good discussion of the use of control charts for averages, ranges, and number or fraction of defectives. Visual aids in the form of charts or tables are well prepared. The exercises are well chosen.

The claim that the book is "a test for the busy executive" is wishful thinking. In this work, and for that matter, in others, there is little evidence that the authors have truly grasped the quality problems of the industrial executive.

Industry's problem has been and still is to make product to meet specifications. The statistical methods, if they are to be grasped by industry, must be presented as a means to the solution of that problem. The emphasis must, in the first instance, be *not* on (*a*) how to achieve controlled processes; the emphasis must rather be on (*b*) the fact that through a controlled process it is easier to make products to meet specifications.

To a statistician, (*b*) seems only too obvious; ergo the executive should take (*b*) for granted, and thus only (*a*) remains to be learned. The precise opposite is true. The practical problem is to convince the executive of the truth of (*b*). Even after he is convinced of (*b*) he will ordinarily not be concerned with (*a*); instead he will delegate the learning of (*a*) to another.

With the exception of the unrealistic first chapter Professor Smith's book can well serve as a supplemental text for undergraduate engineers.

REVIEW BY MASON E. WESCOTT
Assistant Professor of Mathematics, Northwestern University
Evanston, Illinois

PROFESSOR SMITH has long been a successful teacher of college mathematics. During and since the war, he has participated as an instructor in numerous 8- and 10-day intensive training courses in statistical quality control for industrial people. He has conducted several successful in-plant training courses and has served as technical advisor for the installation and operation of statistical quality control programs. Drawing on this back-

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