

Business Data Analysis
SCH-MGMT 650

STATISTICS FOR MANAGERS USING Microsoft® Excel

David M. Levine • David F. Stephan
Timothy C. Krehbiel • Mark L. Berenson

Custom Edition for
UMASS-Amherst
Professor Robert Nakosteen

Taken from:

Statistics for Managers: Using Microsoft® Excel, Fifth Edition
by David M. Levine, David F. Stephan, Timothy C. Krehbiel, and Mark L. Berenson



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*To our wives,
Marilyn L., Mary N., Patti K., and Rhoda B.,
and to our children
Sharyn, Mark, Ed, Rudy, Rhonda, Kathy, and Lori*

ABOUT THE AUTHORS

The textbook authors meet to discuss statistics at Shea Stadium for a Mets v. Phillies game. Shown left to right, Mark Berenson, David Stephan, David Levine, Tim Krehbiel.



David M. Levine is Professor Emeritus of Statistics and Computer Information Systems at Bernard M. Baruch College (City University of New York). He received B.B.A. and M.B.A. degrees in Statistics from City College of New York and a Ph.D. degree from New York University in Industrial Engineering and Operations Research. He is nationally recognized as a leading innovator in statistics education and is the co-author of 14 books including such best selling statistics textbooks as *Statistics for Managers using Microsoft Excel*, *Basic Business Statistics: Concepts and Applications*, *Business Statistics: A First Course*, and *Applied Statistics for Engineers and Scientists using Microsoft Excel and Minitab*.

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Over the years, Berenson has received several awards for teaching and for innovative contributions to statistics education. In 2005 he was the first recipient of The Catherine A. Becker Service for Educational Excellence Award at Montclair State University.

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Presentation on theme: "Statistics for Managers Using Microsoft Excel" Presentation transcript: 1 Statistics for Managers Using Microsoft Excel Fundamentals of Hypothesis Testing Chapter 7 Learning Objectives Describe the hypothesis testing process Distinguish the types of hypotheses Explain hypothesis testing errors Solve hypothesis testing problems One population mean One population proportion One & two-tailed tests As a result of this class, you will be able to... 73 One-Proportion Z Test Example The present packaging system produces 10% defective cereal boxes. Using a new system, a random sample of 200 boxes had 11 defects. Does the new system produce fewer defects? Test at the .05 level. $\frac{1}{4} n \hat{p}$ $\frac{3}{5} n (1 - p)$ 5. out of a million Statistics for Managers Using Microsoft Excel, 5e © 2008 Prentice-Hall, Inc. Chap 18-9 The Six Sigma® DMAIC Model DMAIC represents \hat{p} Define -- define the problem to be solved; list costs, benefits, and impact to customer \hat{p} Measure -- need consistent measurements for each Critical-to-Quality characteristic \hat{p} Analyze -- find the root causes of defects \hat{p} Improve -- use. A common causes of variation is too large, you need to alter the process Statistics for Managers Using Microsoft Excel, 5e © 2008 Prentice-Hall, Inc. Chap 18-21 Process In Control \hat{p} Process in control: points are randomly distributed around the center line and all points are within the control limits UCL Process Mean LCL time Statistics for Managers Using Microsoft Excel