**Contents**

**02-sampling-design-and-exploratory-data-analysis.**

**03-point-estimates.**

**04-accounting-for-uncertainty.**

## ****05-inference-via-hypothesis-testing-mean-proportion.****

## ****06-inference-via-confidence-intervals-mean-proportion.****

## ****07-inference-on-two-categorical-variables.****

## ****08-one-way-anova.****

## ****09-multiway-anova****

## ****10-block-designs****

## ****11-regression.****

## ****12-general-linear-model****

## ****13-mixed-models****

## ****14-repeated-measures-and-split-plots.****

## ****15-logistic-regression-and-generalized-linear-models.****

## ****16-generalized-linear-mixed-models.****

## Statistics for Research 3rd edition by Dowdy&Wearden&Chilko

## Ch. 3 Binomial Distribution

## - Using a Binomial Distribution to Test a Hypothesis (59p)

## -Test of Hypotheses for a Binomial Parameter (64p)

## -Estimation(70p)

## -Nonparametric Stiatistics : Median Test – The One Sample Median Test(77p)

## Ch. 4 Poisson Distribution

## -Test of Hypothesis for a Poisson Parameter(85p)

## -Estimation(88p)

## -Using a Poisson Distribution to Approximate a Binomial Distribution(91p)

## Ch. 5 Chi-squar Distribution

## -A multinomial Chi-square Test(98p)

## -Goodness of Fit Tests(104p)

## -Chi-square Test of Homogeneity(110p)

## -Chi-square Test of Independence(112p)

## -Nonparametric Stiatistics : Median Test – Two Sample Median Test(122p)

## Ch. 7 Normal Distribution

## -Testing a Hypothesis about a Mean with a Sample of one observation(153p)

## -Using a Standard Normal Distribution to Test a Hypothesis about (157p)

## -Using a Standard Normal Distribution to Find a Confidence Interval on (159p)

## -Using a Normal Distribution to Approximate Probabilities for a Binomial Random Variable(164p)

## -Using a Normal Distribution to Test a Hypothesis about (165p)

## -Using a Normal Distribution to Approximate Probabilities for a Poisson Random Variable(167p)

## -Nonparametric Stiatistics : A Test based on Ranks(173p)

## Ch. 8 Student’s *t* Distribution

## -Using a *t* Distribution to Find a Confidence Interval for (182p)

## -Using a *t* Distribution to Test a Hypothesis about (184p)

## -Matched Pair *t* Test(185p)

## -Group Comparison *t* Test(191p)

## -Testing for the Equality of Two Variances(198p)

## -Testing if (200p)

## -Nonparametric Stiatistics : Matched-pair and two sample rank Tests(204p)

## -Wilcoxon Signed-Rank Test(205p)

## Ch. 9 Distribution of two variables

## -Model Testing(223p)

## -Testing the Slope Parameter(230p)

## -Test of *H0*: with (246p)

## -Nonparametric Stiatistics : Rank Correlation(250p)

## -Estimating only one linear trend parameter(256p)

## -Ratio Estimation(257p)

## -Difference Estimation(260p)

## -Linear Trend Estimation(261p)

## Ch. 10 Techniques of One-way Analysis of Variance

## -Multiple Comparison Procedures(283p)

## -Nonparametric Stiatistics : Kruskal-Wallis Anova for Ranks(309p)

## Ch. 11 The Analysis-of-Variance Model

## -Testing the Assumption for ANOVA(324p)

## - Test for Homogeneity of Variances(325p)

## Ch. 12 Other Analysis-of-Variance Design

## -Nested Design(344p)

## -Randomized Complete Block Design(350p)

## -Latin Square Design(360p)

## -*a* X *b* Factorial Design(368p)

## -*a* X *b* X *c* Factorial Design(368p)

## -Split-Plot Design(387p)

## Ch. 13 Analysis of Covariance

## -One-Way Analysis of Covariance(413p)

## -Testing the Assumption for Analysis of Covariance(418p)

## Ch. 14 Multiple Regression and Correlation

## -Inference about effects of Independent Variables(444p)

## -Model Fitting(458p)

## -Logarithmic Transformations(475p)

## -Polynomial Regression(484p)

## -Logistic Regression(495p)

**Statistical Research Methods in the Life Sciences By P.V. Rao**

## Ch. 1 Statistics: Its Objectives and Scope

## Ch. 2 Describing Statistical Populations

## -The empirical rule(33p)

## -The binomial experiment(38p)

## -Normal approximation to a binomial(55p)

## Ch. 3 Statistical Inference: Basic Concepts

## -The Sampling distribution of (82p)

## -Central Limit Theorem(84p)

## -The *t*-distribution(87p)

## -The Chi-Squared-distribution(89p)

## -The *F*-distribution(90p)

## -Estimating parameters(95p)

## -Testing Hypotheses(104p)

## Ch. 4 Inferences about One or Two Populations: Interval Data

## -Inference about population mean with unknown population standard deviations and large sample sizes(130p)

## -Inference about the mean of a *N*( population with unknown (132p)

## -Inference about for normal populations with unknown but equal variance(136p)

## -Inference about for normal populations with unknown (139p)

## -Inference about the mean of differences between paired observations (143p)

## -Inference about the variance of a normal population (150p)

## -Inference about the variance of two normal populations (152p)

## Ch. 5 Inferences about One or Two Populations: Ordinal Data

## -The sign test procedure for inferences about a population median (173p)

## -The Wilcoxon signed rank statistics (179p)

## -The Wilcoxon rank sum statistic(189p)

## Ch. 6 Inferences about One or Two Populations: Categorical Data

## -Large-sample inference about a population proportion(206p)

## -The binomial test for a population proportion(208p)

## -The Chi-squared goodness-of-fit test of a completely specified set of proportions(213p)

## -The Chi-squared goodness-of-fit test of a partially specified set of proportions(216p)

## -Large-sample inferences about the difference between two proportions: Independent samples(227p)

## -Fisher’s exact test for comparing two proportions(229p)

## -Large-Sample McNemar test for inferences about the difference between population proportions(233p)

## -The Chi-squared test of the equality of distribution of two categorical populations: Large samples(235p)

## Ch. 7 Designing Research Studies

## -Determining Sample size(262p)

## Ch. 8 Single-Factors Studies: One-Way ANOVA

## -Analysis of Variance(ANOVA) (283p)

## -The ANOVA *F*-test of : ==…=(284p)

## -Analysis of a CRD: Computational details(287p)

## -Analysis of transformed data(305p)

## -The Kruskal-Wallis Rank Test(314p)

## -Large-sample Chi-squared test(321p)

## Ch.9 Single Factor Studies: Comparing Means and Determining Sample Size

## -Linear combinations of means(329p)

## -Orthogonal comparisons(334p)

## -The Fisher critical contrast value(343p)

## -The Scheffe critical contrast value(343p)

## -Alternatives to the Tukey method(356p)

## -Simultaneous confidence intervals for k contrasts(383p)

## -Determining sample sizes(367p)

## Ch. 10 Simple Linear Regression

## -Comparison of the ANOVA and simple linear regression models(387p)

## -Predicted and residuals values(392p)

## -Least squares estimates of regression parameters(395p)

## -Estimate of the error variance in the simple linear regression model(398p)

## -Inferences about expected and predicted responses(400p)

## -Simultaneous confidence intervals for several expected responses(421p)

## -Simultaneous prediction intervals in simple linear regression(423p)

## -Exact Sample test of :

## -Large-Sample inferences about the Fisher transformation of a correlation coefficient(440p)

## -Rank regression analysis with a single independent variable(453p)

## Ch. 11 Multiple Linear Regression

## -Estimation of regression parameters (485p)

## -Estimation of error variance(487p)

## -Inferences about regression parameters(498p)

## -Inferences about mean responses(502p)

## -Testing a subset of regression parameters(509p)

## -Simultaneous and one-at-a-time tests(514p)

## Ch. 12 The General Linear Model

## -Analysis of covariance model(575p)

## -Estimating adjusted mean response(576p)

## -Selecting covariances(579p)

## Ch. 13 Completely Randomized Factorial Experiments

## -Testing for interaction(593p)

## -Experiments with equal subclass numbers(602p)

## -The two-way ANOVA model with fixed treatment effects(620p)

## -Experiments with nested factors(634p))

## Ch. 14 Random- and Mixed-Effects ANOVA

## -The one-way ANOVA model with random effects(646p)

## -Estimation of the overall mean(657p)

## -The power of the ANOVA *F-*test for one-way random-effects models(662p)

## -Two-way ANOVA with random- and mixed-effects models(672p)

## -Estimate of the degrees of freedom for a linear combination of mean squares in two-way ANOVA(682p)

## -One-way ANOVA models with subsampling(690p)

## Ch. 15 ANOVA Models with Block Effects

## -Two-way ANOVA models for randomized complete block designs(706p)

## -Tukey test for nonadditivity(729p)

## -The Friedman rank test(734p)

## -The Cochran test for inferences about the equality of population proportions(739p)

## Ch. 16 Repeated-Measures Studies

## -Split-plot experiments(752p)

**Applied Linear Statistical Models By Kunter, Nachtscheim, Neter & Li**

## Ch. 1 Linear Regression with One Predictor Variable

## -Estimation of Regression Function(15p)

## -Estimation of Error Terns Variance (24p)

## -Normal Error Regression Model(26p)

## Ch. 2 Inference in Regression and Correlation Analysis

## -Inferences Concerning (40p)

## -Inferences Concerning (48p)

## -Some Considerations on Making Inferences Concerning and (50p)

## -Interval Estimation of E{}(52p)

## -Prediction of New Observation(55p)

## -*F*-test of versus (50p)

## -General Linear Test Approach(72p)

## -Inferences on Correlation Coefficients(83p)

## Ch. 3 Diagnostics and Remedial Measures

## -Overview of Tests Involving Residuals(114p)

## -Correlation Test for Normality(115p)

## -Tests for Constancy of Error Variance(116p)

## -*F*-test for Lack of Fit(119p)

## Ch. 4 Simultaneous Inferences and Other Topic in Regression Analysis

## -Joint Estimation of and (154p)

## -Simultaneous Estimation of Mean Responses(157p)

## -Simultaneous Prediction Intervals for New Observations(160p)

## Ch. 5 Matrix Approach to Simple Linear Regression Analysis

## -Expectation of Random vector or Matrix(193p)

## -Least Squares Estimation of Regression Parameters(199p)

## -Fitted Values and Residuals(202p)

## -Inferences in Regression Analysis(206p)

## Ch. 6 Multiple Regression Ⅰ

## -Estimation of Regression Coefficients(223p)

## -Fitted values and Residuals(224p)

## -*F*-test for regression relation(226p)

## -Inferences about Regression Parameters(227p)

## -Estimation of Mean Response and Prediction of New Observation(229p)

## -Correlation Test for Normality(234p)

## -Brown-Forsythe Test for Constancy of Error variance(234p)

## -Breusch-Pagan Test for Constancy of Error Variance(234p)

## -*F*-test for Lack of Fit(235p)

## -An Example-Multiple Regression with Two Predictor Variables(236p)

## Ch. 7 Multiple Regression Ⅱ

## -Test whether All (266p)

## -Test whether a Single (267p)

## -Test whether some (267p)

## -Estimated Standardized Regression Coefficient(275p)

## Ch. 9 Building the Regression Model Ⅰ: Model Selection and Validation

## -Criteria for Model selection(353p)

## Ch. 10 Building the Regression Model Ⅱ: Diagnostics

## -Identifying Outlying *Y* Observations-Studentized Deleted Residuals(390p)

## -Identifying Outlying *X* Observations-Hat Matrix Leverage Values(398p)

## -Identifying Influential Cases-*DFFITS*, Cook’s Distance, and *DFBETAS* Measures (400p)

## Ch. 11 Building the Regression Model Ⅲ: Remedial Measures

## -Unequal Error Variances Remedial Measures-Weighted Least Squares(421p)

## -Multicollinearity Remedial Measures-Ridge Regression(431p)

## -Remedial Measures for Influential Cases-Robust Regression(437p)

## -Nonparametric Regression: Lowess Method and Regression Trees(449p)

## -Remedial Measures for Evaluating Precision in Nonstandard Situations-Bootstrapping(458p)

## Ch. 14 Logistic Regression, Poisson Regression, and Generalized Linear Models

## -Maximum Likelihood Estimation (564p)

## -Inferences about Regression Parameters(577p)

## -Test Concerning a Single : Wald Test(578p)

## -Interval Estimation of a Single (579p)

## -Test whether Several : Likelihood Ratio Test(580p)

## -Test for Goodness of Fit(586p)

## -Pearson Chi-Square Goodness of Fit test(586p)

## -Deviance Goodness of Fit Test(588p)

## -Hosmer-Lemeshow Goodness of Fit Test(589p)

## -Inference about Mean Response(602p)

## -Prediction of a New Observation(604p)

## Ch. 16 Single-Factor Studies

## -F-test for Equality of Factor Level Means(698p)

## -Randomization Test(712p)

## Ch. 17 Analysis of Factor Level Means

## -Estimation and Testing of Factor Level Means(737p)

## -Tukey Multiple Comparison Procedure(746p)

## -Scheffe Multiple Comparison Procedure(753p)

## -Bonferroni Multiple Comparison Procedure(756p)

## Ch. 18 ANOVA Diagnostics and Remedial Measures

## -Tests for Constancy of Error Variance(781p)

## -Hartley Test(782p)

## -Brown-Forsythe Test(784p)

## -Nonparametric Rank *F* Test(795p)

## Ch. 19 Two-Factors Studies with Equal Sample Sizes

## -Evaluation of Appropriateness of ANOVA Model(842p)

## -*F* Test(843p)

## -Test for Interactions(844p)

## -Test for Factor A Main Effects(844p)

## -Test for Factor B Main Effects(845p)

## -Analysis of Factor Effects when Factors Do Not Interact(848p)

## Ch. 20 Two-Factors Studies-One Case per Treatment

## -Tukey Test for Additivity(886p)

## Ch. 21 Randomized Complete Block Designs

## -Evaluation of Appropriateness of Randomized Complete Block Model(901p)

## Ch. 22 Analysis of Covariance

## -Test for Treatment Effects(928p)

## -Test for Parallel slopes(932p)

## Ch. 23 Two-Factors Studies with Unequal Sample Sizes

## -Inferences about Factor Effects when Sample Sizes Are Unequal(959p)

## -ANOVA Inferences when Treatment Means Are of Unequal Importance(970p)

## -Estimation of Treatment Means and Factor Effects(971p)

## -Test for Interactions(972p)

## -Tests for Factor Main Effects by Use of Equivalent Regression Models(972p)

## -Tests for Factor Main Effects by Use of Matrix Formulation(975p)

## -Tests for Factor Main Effects when Weights Are Proportional to Sample sizes(977p)

## Ch. 24 Multi-Factor Studies

## -Unequal Sample Sizes in Multi-Factor Studies (1019p)

## Ch. 25 Random and Mixed Effects Models

## -Test whether (1035p)

## -Estimation of (1038p)

## -Estimation of (1040p)

## -Estimation of (1041p)

## -Point Estimation of (1042p)

## -Interval Estimation of (1042p)

## -Estimation of Variance Components(1055p)

## -Estimation of Fixed Effects in Mixed Model(1056p)

## Ch. 26 Nested Designs, Subsampling, and Partially Nested Designs

## -Analysis of Variance for Two-Factor Nested Designs(1093p)

## -Analysis of Factor Effects in Two-Factor Nested Designs(1100p)

## -Subsampling in Single-Factor Study with Completely Randomized Design(1106p)

## -Pure Subsampling in Three Stages(1113p)

## Ch. 27 Repeated Measures and Related Designs

## -Single-Factor Experiments with Repeated Measures on All Treatments(1129p)

## -Two-Factor Experiments with Repeated Measures on All Treatments(1140p)

## -Two-Factor Experiments with Repeated Measures on Both Factorss(1153p)

## Ch. 28 Balanced Incomplete Block, Latin Square, and Related Designs

## -Analysis of Latin Square Experiments (1188p)

## -Test for Treatment Effects(1190p)

## -Power of F test(1193p)

## Ch. 29 Exploratory Experiments: Two-Level Factorial and Fractional Factorial Designs

## -Two-Level Full Factorial Experiments(1210p)