

# Statistical Methods in **Food and Consumer Research**

Second Edition

**Maximo Gacula Jr.  
Jagbir Singh  
Jian Bi  
Stan Altan**



Food Science and Technology, International Series



# Statistical Methods In Food And Consumer Research

**John A. Bower**



## **Statistical Methods In Food And Consumer Research:**

*Statistical Methods in Food and Consumer Research* Maximo C. Gacula Jr., Jagbir Singh, Jian Bi, Stan Altan, 2008-12-01  
Statistical Methods in Food and Consumer Research Second Edition continues to be the only book to focus solely on the statistical techniques used in sensory testing of foods pharmaceuticals cosmetics and other consumer products This new edition includes the most recent applications of statistical methods and features significant updates as well as two new chapters Covering the application of techniques including R index the Bayesian approach for sensory differences tests and preference mapping in addition to several other methodologies this is the comprehensive reference needed by those studying sensory evaluation and applied statistics in agriculture and biological sciences Research professionals working with food beverages healthcare cosmetics and other related areas will find the book a valuable guide to the variety of statistical methods available Provides comprehensive coverage of statistical techniques in sensory testing Includes data compiled from real world experiments Covers the latest in data interpretation and analysis Addresses key methods such as R index Thurstonian Discriminal Distances group sequential tests beta binomial tests sensory difference and similarity tests just about right data signal to noise ratio analysis of cosmetic data Descriptive Analysis claims substantiation and preference mapping

Statistical Methods in Food and Consumer Research Maximo C. Gacula Jr., 2013-10-22 Food Science and Technology A Series of Monographs Statistical Methods in Food and Consumer Research focuses on the applications of statistical methods and specialized techniques in food and consumer research The publication begins with a review of tools for statistical inference statistical sensory testing and analysis of variance and multiple comparison tests Discussions focus on principles of experimental design psychophysical aspects of sensory data scales of measurement distribution of sensory data sample size estimation and analysis of variance The text then ponders on experimental design and incomplete block experimental designs The book touches on factorial experiments and response surface designs and analysis Topics include fitting of response surface design considerations simple confounding and fractional factorial experiments composite and rotatable designs and response surface analysis approach for sensory data The manuscript then examines shelf life testing experiments nonparametric statistical methods and sensory difference tests and selection of panel members The publication is a dependable source material for researchers instructors and applied statisticians *Statistical Methods for Food Science*

John A. Bower, 2013-06-21 The recording and analysis of food data are becoming increasingly sophisticated Consequently the food scientist in industry or at study faces the task of using and understanding statistical methods Statistics is often viewed as a difficult subject and is often avoided because of its complexity and a lack of specific application to the requirements of food science This situation is changing there is now much material on multivariate applications for the more advanced reader but a case exists for a univariate approach aimed at the non statistician This second edition of Statistical Methods for Food Science provides a source text on accessible statistical procedures for the food scientist and is aimed at professionals and

students in food laboratories where analytical instrumental and sensory data are gathered and require some form of summary and analysis before interpretation. It is suitable for the food analyst, the sensory scientist and the product developer and others who work in food related disciplines involving consumer survey investigations will also find many sections of use. There is an emphasis on a hands on approach and worked examples using computer software packages and the minimum of mathematical formulae are included. The book is based on the experience and practice of a scientist engaged for many years in research and teaching of analytical and sensory food science at undergraduate and post graduate level. This revised and updated second edition is accompanied by a new companion website giving the reader access to the datasets and Excel spreadsheets featured in the book. Check it out now by visiting [www.wiley.com/go/bowerstatistical](http://www.wiley.com/go/bowerstatistical) or by scanning the QR code below.

**Sensory and Consumer Research in Food Product Design and Development** Howard R.

Moskowitz, Jacqueline H. Beckley, Anna V. A. Resurreccion, 2009-03-03 The food and beverage industries today face an intensely competitive business environment. To the degree that the product developer and marketer as well as general business manager can more fully understand the consumer and target development and marketing efforts, their business will be more successful. *Sensory and Consumer Research in Food Product Design and Development* is the first book to present from the business viewpoint the critical issues faced by sensory analysts, product developers and market researchers in the food and beverage arena. The book's unique perspective stems from the author team of Moskowitz, Beckley and Resurreccion, three leading practitioners in the field who each combines an academic and business acumen. The beginning reader will be introduced to systematic experimentation at the very early stages to newly emerging methods for data acquisition, knowledge development and to points of view employed by successful food and beverage companies. The advanced reader will find new ideas backed up by illustrative case histories to provide yet another perspective on commonly encountered problems and their practical solutions. Aimed toward all aspects of the food and beverage industry, *Sensory and Consumer Research in Food Product Design and Development* is especially important for those professionals involved in the early stages of product development where business opportunity is often the greatest.

**Food Packaging and Shelf Life** Gordon L.

Robertson, 2009-12-21 The importance of food packaging hardly needs emphasizing since only a handful of foods are sold in an unpackaged state. With an increasing focus on sustainability and cost effectiveness, responsible companies no longer want to over package their food products yet many remain unsure just where reductions can effectively be made. *Food Packaging and Shelf Life: A Practical Guide* provides package developers with the information they need to specify just the right amount of protective packaging to maintain food quality and maximize shelf life. Current food packaging must take into consideration the biochemical, chemical, physical and biological changes that occur during processing, distribution and storage. Organized according to chapters devoted to specific food products, this practical handbook defines the indices of failure for foods as diverse as milk, fruits, bottled water, juices, vegetables, fish and beef. It discusses the deteriorative reactions for each food and

reviews how different packaging materials may influence time to failure and thus shelf life Other topics included biobased packaging packaging and the microbial shelf life of foods and shelf life testing methodology *Methods in Consumer Research, Volume 1* Gaston Ares,Paula Varela,2018-01-02 Methods for Consumer Research Volume One New Approaches to Classic Methods brings together world leading experts in global consumer research who provide a fully comprehensive state of the art coverage of advances in the classical methods of consumer science The book touches on the latest developments in qualitative techniques including coverage of both focus groups and social media while also focusing on liking a fundamental principle of consumer science consumer segmentation and the influence of extrinsic product characteristics such as packaging and presentation on consumer liking In conjunction with the second volume which covers alternative approaches and special applications this book is an invaluable reference for academics working in the fields of in sensory and consumer science psychology marketing and nutrition And with examples of the methodology being applied throughout it serves as a practical guide to research and development managers in both food and non food companies Presents a fully comprehensive coverage of the latest developments in the classical methodologies of consumer research Provides examples of successful application of the methodologies presented Includes focus groups and social media discussions Encompasses consumer segmentation with a focus on psychographics and genetics **Statistics for Sensory and Consumer Science** Tormod Næs,Per Bruun Brockhoff,Oliver Tomic,2011-06-20 As we move further into the 21st Century sensory and consumer studies continue to develop playing an important role in food science and industry These studies are crucial for understanding the relation between food properties on one side and human liking and buying behaviour on the other This book by a group of established scientists gives a comprehensive up to date overview of the most common statistical methods for handling data from both trained sensory panels and consumer studies of food It presents the topic in two distinct sections problem orientated Part I and method orientated Part II making it to appropriate for people at different levels with respect to their statistical skills This book succesfully Makes a clear distinction between studies using a trained sensory panel and studies using consumers Concentrates on experimental studies with focus on how sensory assessors or consumers perceive and assess various product properties Focuses on relationships between methods and techniques and on considering all of them as special cases of more general statistical methodologies It is assumed that the reader has a basic knowledge of statistics and the most important data collection methods within sensory and consumer science This text is aimed at food scientists and food engineers working in research and industry as well as food science students at master and PhD level In addition applied statisticians with special interest in food science will also find relevant information within the book **Measuring Diets and Food Choice in the Context of a Changing World** Winnie Bell,Christine Blake,Shauna Downs,2025-08-06 Historically research in low and middle income countries has been focused on what people consume with less attention to how and why people choose to consume the foods that they do As incomes rise and local food environments undergo rapid

changes providing consumers with a wider array of options at competitive prices understanding the underlying drivers of food choice including the preferences and values that underpin them has become increasingly important In recent years there have been renewed efforts to understand the drivers of food choice in the context of changing food environments and broader food system and how these drivers link with food consumption The goal of this Research Topic is to look beyond dietary consumption what people eat by considering more holistically the various drivers of food choice how and why people eat the foods they do to better understand what underpins individual decisions Ultimately by understanding why people make the choices they do especially when situated in the local food environment and or broader food system we can identify important entry points for behavior change interventions develop a better understanding about the role of food safety in food choice decisions improve the environment climate and food systems through improved knowledge on the drivers of food choice and learn about how changing livelihoods shifts dynamics related to food choice amongst other important research tied to drivers of food choice

**New Publications** Ontario. Ministry of Agriculture and Food. Library,1987

Interdisciplinary Consumer Research H. Keith Hunt,Frances M. Magrabi,1980 Chemistry and Industry ,1987

*Statistical Methods in Food en Consumer Resarch* Maximo C. Gacula,1984 **Biometrics** ,1989 Emphasizes the role of statistics and mathematics in the biological sciences *Statistics in Food Science and Nutrition* Are Hugo Pripp,2012-09-10 Many statistical innovations are linked to applications in food science For example the student t test a statistical method was developed to monitor the quality of stout at the Guinness Brewery and multivariate statistical methods are applied widely in the spectroscopic analysis of foods Nevertheless statistical methods are most often associated with engineering mathematics and the medical sciences and are rarely thought to be driven by food science Consequently there is a dearth of statistical methods aimed specifically at food science forcing researchers to utilize methods intended for other disciplines The objective of this Brief will be to highlight the most needed and relevant statistical methods in food science and thus eliminate the need to learn about these methods from other fields All methods and their applications will be illustrated with examples from research literature

**Whitaker's Cumulative Book List** ,1985 *A Statistical Analysis of the Relationship Between Frozen Food Quality and Temperature* Yi-ding Chu,1983 Annual Report Iowa State University. Center for Agricultural and Rural Development,1993 **Battelle Technical Review** Battelle Memorial Institute,1966 **Individual Differences in Sensory and Consumer Science** Tormod Næs,Paula Varela,Ingunn Berget,2018-02-21 Individual Differences in Sensory and Consumer Science Experimentation Analysis and Interpretation presents easily readable state of the art coverage on how to plan and execute experiments that give rise to individual differences also providing the framework for successful analysis and interpretation of results The book highlights the different methodologies that can be applied and how to select the correct methodology based on the type of study you are performing be it product research and development quality control or consumer acceptance studies Written by an experienced team of statisticians and sensory and consumer scientists the

book provides both academics and industry professionals with the first complete overview of a topic of ever increasing importance Identifies how to plan and execute experiments in sensory and consumer science Analyzes and interprets individual variances in sensory and consumer research Differentiates best practices for examining product development quality control and consumer acceptance      **Journal of the Royal Statistical Society** ,1966

## Whispering the Techniques of Language: An Psychological Journey through **Statistical Methods In Food And Consumer Research**

In a digitally-driven earth where monitors reign supreme and instant communication drowns out the subtleties of language, the profound techniques and emotional nuances concealed within phrases often get unheard. However, set within the pages of **Statistical Methods In Food And Consumer Research** a interesting fictional prize pulsating with raw thoughts, lies an extraordinary journey waiting to be undertaken. Penned by an experienced wordsmith, this charming opus attracts viewers on an introspective journey, softly unraveling the veiled truths and profound influence resonating within ab muscles cloth of each and every word. Within the mental depths of the moving evaluation, we will embark upon a sincere exploration of the book is key styles, dissect its interesting writing model, and succumb to the strong resonance it evokes strong within the recesses of readers hearts.

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