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Titolo	Understanding Inferential Statistics [[electronic resource]] : From A for Significance Test to Z for Confidence Interval / / by Markus Janczyk, Roland Pfister
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Altri autori (Persone)	PfisterRoland
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Soggetti	Bioinformatics Statistics in Life Sciences, Medicine, Health Sciences
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Nota di contenuto	Introduction and descriptive statistics -- Basics of inferential statistics 1: random variables -- Basics of inferential statistics 2: population and parameter estimation -- Hypothesis testing and significance -- Difference hypotheses with a maximum of two groups: t-tests. Confidence intervals -- Error types, effect size and power -- Single factor analysis of variance -- Multifactorial analysis of variance -- Analysis of variance with repeated measures -- Correlation hypotheses: Correlation and regression -- Concluding remarks.
Sommario/riassunto	What actually is a p-value for? And what is a significant result? This book answers such questions by providing a compact introduction to inferential statistics. Our major focus is on the logic of inferential statistics and hypothesis testing: We cover the logic behind statistical tests, we then walk through the most common procedures (t-test, analysis of variance with and without repeated measures, correlation/regression) and discuss pitfalls of data analysis. The book thus helps developing a solid understanding of how common test procedures work, and how to interpret their results correctly. Hands-on examples from everyday research – including exemplary calculations with the programs SPSS and R – supplement each chapter. In addition to classical methods, we briefly discuss recent developments in psychological research methods. This book is a translation of the

original German 3rd edition of “Inferenzstatistik Verstehen” by Markus Janczyk and Roland Pfister. It is based on an AI-powered machine translation (by the service DeepL.com), with thorough follow-up editing by both authors. The authors Markus Janczyk studied psychology at the Universities of Halle-Wittenberg and Reno (USA), earned his doctorate at TU Dortmund University, and completed his habilitation at Julius-Maximilians-Universität Würzburg. He is currently a professor at the University of Bremen, where he heads the Research Methods and Cognitive Psychology Group. In his research, he is primarily interested in action control, multitasking, language, applied statistics, and cognitive modeling. Roland Pfister studied psychology at the Julius-Maximilians-University of Würzburg, where he wrote his doctoral thesis on the cognitive mechanisms of deliberate rule violations. In addition, he works on basic mechanisms of action control, the interplay of perception and action, applied statistics, and the history of psychology.
