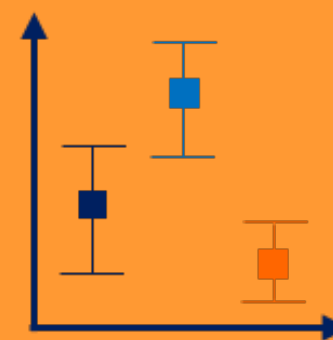
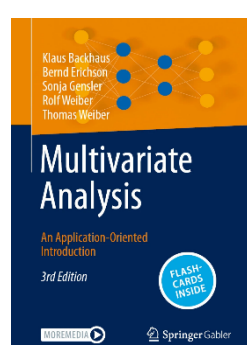


# ANALYSIS OF VARIANCE (ANOVA)



MAIN RESEARCH QUESTION	HOW STRONG IS THE EFFECT OF NON-METRICALLY SCALED INDEPENDENT VARIABLES ON A METRICALLY SCALED DEPENDENT VARIABLE?
EXAMPLE	<i>A MANAGER OF A CINEMA WOULD LIKE TO KNOW WHETHER THE NUMBER OF VISITORS IS INFLUENCED BY THE TYPE OF ADVERTISING (RADIO, TELEVISION, NEWSPAPER).</i>
TYPE OF ANALYSIS	STRUCTURE-TESTING (CONFIRMATORY) METHOD
MEASUREMENT LEVEL	
DEPENDENT VARIABLE	METRIC (ONE VARIABLE)
INDEPENDENT VARIABLES	CATEGORICAL
RECOMMENDATIONS	<ul style="list-style-type: none"><li>▪ CARRY OUT A MANIPULATION CHECK TO TEST THE EXPERIMENTAL DESIGN.</li><li>▪ LIMIT TO A FEW FACTORS SO THAT RESULTS REMAIN INTERPRETABLE. FACTORS WITH AT LEAST THREE FACTOR LEVELS EACH.</li><li>▪ AT LEAST 20 OBSERVATIONS PER FACTOR LEVEL (GROUP). EACH CELL SHOULD HAVE ABOUT THE SAME NUMBER OF CASES.</li><li>▪ IN THE CASE OF UNEQUAL GROUP SIZES, MAKE SURE TO CHECK THE ASSUMPTION OF VARIANCE HOMOGENEITY.</li></ul>
KEYWORDS	ONE-WAY AND TOW-WAY ANOVA, ANOVA-TABLE, ANCOVA, BONFERRONI TEST, CONTRAST ANALYSIS, ETA-SQUARED, EXPERIMENTAL DESIGN, FACTORIAL DESIGN, F-TEST, HOMOSCEDASTICITY, INTERACTION EFFECTS, LEVENE TEST, MANCOVA, MANOVA, OMNIBUS HYPOTHESIS, POST-HOC TEST, SCHEFFE TEST, TUKEY TEST, VARIANCE DECOMPOSITION, VARIANCE HOMOGENEITY



BACKHAUS, KLAUS; ERICHSON, BERND; GENSLER, SONJA; WEIBER, ROLF; WEIBER, THOMAS (2025)  
MULTIVARIATE ANALYSIS – AN APPLICATION-ORIENTED INTRODUCTION, SPRINGER: BERLIN

[WWW.MULTIVARIATE-METHODS.INFO](http://WWW.MULTIVARIATE-METHODS.INFO)