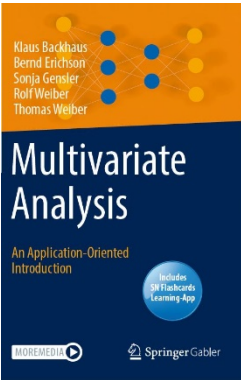# ANALYSIS OF VARIANCE (ANOVA)

MAIN RESEARCH QUESTION	HOW STRONG IS THE EFFECT OF NON-METRICALLY SCALED INDEPENDENT VARIABLES ON A METRICALLY SCALED DEPENDENT VARIABLE?
EXAMPLE	*A MANAGER OF A CINEMA WOULD LIKE TO KNOW WHETHER THE NUMBER OF VISITORS IS INFLUENCED BY THE TYPE OF ADVERTISING (RADIO, TELEVISION, NEWSPAPER).*
TYPE OF ANALYSIS	STRUCTURE-TESTING (CONFIRMATORY) METHOD

MEASUREMENT LEVEL
  DEPENDENT VARIABLE
  INDEPENDENT VARIABLES
	
	METRIC (ONE VARIABLE)
	CATEGORICAL

RECOMMENDATIONS	▪ CARRY OUT A MANIPULATION CHECK TO TEST THE EXPERIMENTAL DESIGN. ▪ LIMIT TO A FEW FACTORS SO THAT RESULTS REMAIN INTERPRETABLE. FACTORS WITH AT LEAST THREE FACTOR LEVELS EACH. ▪ AT LEAST 20 OBSERVATIONS PER FACTOR LEVEL (GROUP). EACH CELL SHOULD HAVE ABOUT THE SAME NUMBER OF CASES. ▪ IN THE CASE OF UNEQUAL GROUP SIZES, MAKE SURE TO CHECK THE ASSUMPTION OF VARIANCE HOMOGENEITY.
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