**## 多变量方差分析（MANOVA）**

MANOVA(data=data,

dvs=c("dep\_var1", "dep\_var2", "dep\_var3"),

dvs.pattern="dep\_var(.)",

between=c("ind\_var1", "ind\_var2"),

within="dep\_var",

file="output.doc") %>%

EMMEANS("ind\_var2", "ind\_var1")

**## 线性模型 (Linear Model)**

# 线性回归模型及汇总

m1 <- lm(dep\_var ~ ind\_var1 \* ind\_var2, data=data)

model\_summary(list(m1))

**## 确定性因子分析 (CFA)**

# 多组CFA模型拟合与比较

configural\_fit <- cfa(model, data=data, group="group\_var")

metric\_fit <- cfa(model, data=data, group="group\_var", group.equal="loadings")

scalar\_fit <- cfa(model, data=data, group="group\_var", group.equal=c("loadings", "intercepts"))

fit\_comparison <- compareFit(configural\_fit, metric\_fit, scalar\_fit)

summary(fit\_comparison, fit.measures=TRUE)

**## 调节效应分析 (Moderation Analysis)**

# 用PROCESS进行调节效应分析

PROCESS(data,

y="dep\_var",

x="ind\_var",

meds="med\_var",

covs=c("covar1", "covar2"),

ci="boot",

nsim=1000,

seed=1,

file="moderation\_output.doc")

**## Alpha信度检验 (Alpha Reliability Test)**

# 计算Alpha信度系数

Alpha(data[group\_var == 0], vars=cc("item1", "item2", "item3", "item4", "item5", "item6"))

**## 相关性分析 (Correlation Analysis)**

# 生成相关矩阵表

apaTables::apa.cor.table(data[, .(var1, var2, var3, var4, var5, var6, var7, var8, covar1, covar2)],

show.conf.interval=FALSE,

filename="correlation\_output.doc")

**## 卡方检验 (Chi-Square Test)**

# 进行卡方检验

chi\_test <- chisq.test(table(data$var1, data$var2))

print(chi\_test)

**## 混合效应模型 (Mixed Effects Model)**

model0 <- lmer(dep\_var ~ (1|random\_effect), data=data)

summary(model0)

**## 数据数值化 (Data Conversion to Numeric)**

for (var in names(data)) {

if (var == "factor\_var") {

data[[var]] <- as.factor(data[[var]])

} else {

data[[var]] <- as.numeric(data[[var]])

}

}

**## 数据标准化 (Data Standardization)**

standardized\_data <- data %>%

mutate(standardized\_variable = (variable - mean(variable, na.rm=TRUE)) / sd(variable, na.rm=TRUE))