SpeedDating Research Question Model Equations

RQ1 Equations: Interaction of Shared Interests and Sincerity on Attraction

(Multiple Linear Regression)

Men Rating Women

$$LikeM = \beta_0 + \beta_1(SharedInterestsM) + \beta_2(SincereM) + \beta_3(SharedInterestsM \times SincereM) + \epsilon$$

Women Rating Men

$$LikeF = \beta_0 + \beta_1(SharedInterestsF) + \beta_2(SincereF) + \beta_3(SharedInterestsF \times SincereF) + \epsilon$$

RQ2 Equations: Does Attractiveness Predict Second-Date Decisions After Controlling for Personality?

(Logistic Regression - Log-Odds Format)

Men Deciding on Women

$$log(\frac{P(DecisionM = 1)}{1 - P(DecisionM = 1)}) = \beta_0 + \beta_1(AttractiveM) + \beta_2(IntelligentM) + \beta_3(FunM)$$

Women Deciding on Men

$$log(\frac{P(DecisionF = 1)}{1 - P(DecisionF = 1)}) = \beta_0 + \beta_1(AttractiveF) + \beta_2(IntelligentF) + \beta_3(FunF)$$

RQ3 Equations: Which Personality Traits best Predict Romantic Liking?

(Multiple Linear Regression)

Men Rating Women

$$LikeM = \beta_0 + \beta_1(FunM) + \beta_2(SincereM) + \beta_3(AmbitiousM) + \beta_4(IntelligentM) + \epsilon$$

Women Rating Men

$$LikeF = \beta_0 + \beta_1(FunF) + \beta_2(SincereF) + \beta_3(AmbitiousF) + \beta_4(IntelligentF) + \epsilon$$

RQ4 Equations: Missed Connections and Misperceptions

A. Two-Sample T-Test

(No formal equation, comparing group means)

$$PartnerYes_{Match} \text{ vs } PartnerYes_{Missed}$$

B. Logistic Regression Predicting Missed Connections

(Log-Odds Format)

$$log(\frac{P(MissedConnection = 1)}{1 - P(MissedConnection = 1)}) = \beta_0 + \beta_1(UnderestimateM) + \beta_2(UnderestimateF)$$

Where:

$$MissedConnection = 1 \rightarrow \text{both } Like \geq 7 \text{ but not a mutual match}$$

$$MissedConnection = 0 \rightarrow \text{both } Like \geq 7 \text{ and a mutual match}$$

C. Hypothetical "Perfect Information" Matching

(Deterministic, not a statistical model)

$$HypDecisionM = \begin{cases} 1, & \text{if } LikeM \geq 7 \\ 0, & \text{if } LikeM < 7 \end{cases}$$

$$HypDecisionF = \begin{cases} 1, & \text{if } LikeF \geq 7 \\ 0, & \text{if } LikeF < 7 \end{cases}$$

$$HypMatch = \begin{cases} 1, & \text{if } HypDecisionM = 1 \text{ and } HypDecisionF = 1 \\ 0, & \text{otherwise} \end{cases}$$