The Impact of Generative AI on Individual Career Choice Preferences Data Analysis

1. Research Question and Hypotheses

This study investigates whether generative AI influences individuals' career choice preferences, and whether this effect varies across decision-making contexts and is moderated by job familiarity.

Hypotheses:
H1: In the subjective ideal context, generative AI significantly increases individuals' preference for skill-matched jobs.
H2: In the expert guess context, generative AI significantly increases individuals' preference for skill-matched jobs.
H3: In the peer guess context, generative AI significantly increases individuals' preference for skill-matched jobs.
H4: Job familiarity moderates the effect of AI, such that the effect is stronger for individuals with lower job familiarity.

2. Sample and Data

2.1 Sample Size and Recruitment

We recruited 93 participants. Participants were randomly assigned to either the control group (N = 47) or the AI intervention group (N = 46). Randomization was conducted at the individual level using a computer-generated random number sequence.

2.2 Inclusion Criteria

Participants were included if they:
- Were currently enrolled as undergraduate or graduate students at HIT(SZ);
- Completed all three experimental phases;
- Passed the comprehension check (5 questions on the role-playing material).

2.3 Attrition and Compliance

All recruited participants completed the experiment. No attrition occurred. Compliance was ensured through minimum time restrictions (2 minutes per phase) and mandatory responses.

3. Experimental Design

The study employs a 2 (AI intervention: with vs. without) × 3 (decision context: subjective ideal, expert guess, peer guess) mixed factorial design. AI intervention is a

between-subjects factor; decision context is a within-subjects factor.

3.1 Experimental Phases

1. Subjective Ideal Context: Participants rate 6 jobs based on personal preference.
2. Expert Guess Context: Participants rate jobs to match the score of a human resource expert.
3. Peer Guess Context: Participants rate jobs to match the average score of other participants.

Participants in the AI intervention group received AI-generated advice for each job before rating.

3.2 Randomization and Blinding

Participants were randomly assigned to control or AI group. The experimenter was not blinded to group assignment, but participants were unaware of the study hypotheses.

4. Variable Definitions

4.1 Outcome Variables

Skill-matched job rating: Average rating (1 – 10) for three skill-matched jobs (pre-defined based on job descriptions and AI advice).
Skill-matched job rank: Ranking of skill-matched jobs among the six options (1 = highest preference).
Top-1 choice indicator: Binary variable = 1 if the most preferred job is a skill-matched job, 0 otherwise.

4.2 Independent Variables

AI intervention: Binary variable = 1 for AI group, 0 for control group.
Decision context: Categorical variable with three levels (subjective ideal, expert guess, peer guess).

4.3 Moderator

Job familiarity: 7-point Likert scale measured post-experiment (1 = very unfamiliar, 7 = very familiar).

4.4 Control Variables

Gender, age, education level, major (business vs. non-business), GPA, internship

experience.

5. Analytical Strategy

5.1 Descriptive and Balance Checks

We will report means, standard deviations, and frequencies for all demographic and experimental variables. Balance across treatment groups will be tested using chi-square tests for categorical variables and independent t-tests for continuous variables.

5.2 Main Effects

5.2.1 Hypothesis $1 - 3$ (AI Effect Across Contexts)

Parametric: Independent t-tests and linear regression models with robust standard errors to compare skill-matched job ratings and ranks between AI and control groups, separately for each decision context.
Non-parametric: Mann-Whitney U tests for robustness.
Top-1 choice: Logistic regression with AI intervention as the key independent variable, controlling for individual characteristics.

5.2.2 Contextual Moderation

We will use linear mixed models (LMM) with skill-matched job rating as the dependent variable, AI intervention, decision context, and their interaction as fixed effects, and participant random intercepts. This tests whether the AI effect differs across contexts.

5.3 Moderation by Job Familiarity

We will estimate a linear regression model with skill-matched job rating as the dependent variable, AI intervention, job familiarity (mean-centered), and their interaction term as predictors. Control variables will be included. Simple slope analysis will be conducted at ± 1 SD of job familiarity.

5.4 Robustness Checks

- Re-estimate main models using non-parametric tests.
- Exclude participants with low attention or low AI trust (measured post-experiment).
- Re-run moderation analysis using alternative operationalization of job familiarity (e.g., median split).