

EC 320 Replication Project: Learning Outcomes and Evaluation Design

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Overview

This document summarizes the evaluation plan for the EC 320 replication project. The goal is to assess whether engaging in an applied replication exercise improves students' econometric reasoning, confidence, and understanding of reproducible research practices.

Five key learning targets are assessed using a mix of midterm anchors, pre/post surveys, and open-ended reflections. Pre- and post-assessments will be administered as Canvas surveys to streamline implementation and preserve anonymity. Responses will be reported only in aggregate.

Learning Targets and Measurement Strategy

#1. Model Construction and Specification

Target: Students can translate an economic question into an empirical model, identifying dependent, independent, and control variables.

Measurement: Multiple-choice questions (6 items) on variable selection, omitted variable bias, and control choice.

Instrument: Pre-survey quiz in Canvas.

Anchor: Specification Score (*SpecScore_pre*).

#2. Estimation and Interpretation

Target: Students can estimate and interpret regression models, coefficients, and hypothesis tests.

Measurement: Selected items from the EC 320 midterm covering regression interpretation, significance, and control effects.

Instrument: Midterm and parallel post-project items.

Anchor: Midterm Subscore (*EstInterp_anchor*).

#3. Replication Mindset and Reproducibility Practices

Target: Students understand the role of replication in credible research and can structure a reproducible R project.

Measurement: Four Likert-scale items (1–5) on understanding, importance, project organization, and documentation.

Instrument: Pre- and post-survey in Canvas.

Anchor: Replication Mindset Index (*RepMindset_pre/post*).

#4. Critical Comparison and Reflection

Target: Students can compare their replication results with those of the published paper and identify plausible differences.

Measurement: Open-ended written reflection questions on comparison and learning.

Instrument: Post-survey (Canvas open-ended items).

Anchor: Reflection responses coded thematically (*CompareReflect_post*).

#5. Confidence and Belonging

Target: Students feel more confident reading empirical papers and perceive econometrics as relevant to their interests.

Measurement: Four Likert-scale items (confidence, belonging, relevance, comprehension).

Instrument: Pre- and post-survey in Canvas.

Anchor: Confidence-Belonging Index (*ConfBelong_pre/post*).

Survey Implementation Notes

- The pre-survey will include the specification quiz (6 MC items) and Likert scales for replication mindset and confidence/belonging.
- The post-survey will repeat the Likert items verbatim for comparability, and include two open-ended reflection questions.
- Each student will create a simple anonymous identifier (e.g., last 3 digits of student ID + month of birth) to link pre- and post-responses if needed.
- Canvas surveys will be set to “anonymous” mode; data will be exported in aggregate for analysis.

Analysis Plan

- Compute pre/post means for each index (*SpecScore*, *RepMindset*, *ConfBelong*); test differences with paired *t*-tests.
- Use midterm subscore as an anchor for estimation/interpretation learning.
- Thematically code reflection responses to illustrate learning processes and perceived value of replication.
- Report descriptive statistics, change scores, and representative quotes in the manuscript.