

## SUMMARY

**Merlyn Deng, Class of 2011**

### **Evaluating Possible Performance Facts in Improving Yale's SOM Online Research Database**

**Professor Cade Massey**

#### Brief Description:

Yale's School of Management maintains a growing online research survey database – that is used daily to conduct research on behavioral economics and psychology -- of over 15,000 registrations. The advent of online research has eliminated such biases attributed to geographic isolation, enabling researchers to access larger and supposedly more diverse sample sizes. Little remains standardized or well known about this research method's own biases.

My overarching research objective was to evaluate this database. This summer, I examined user-performance on four well-defined psychology scales, user history, test-taking time, and demographics to evaluate the biases present in Yale's eLab. From these data, we focused on three types of "cuts" that researchers may use to reduce noise in data: asymmetry performance, test-taking time, and corrected usage-time.

Stage 1. A pre-test was administered to 3,600 eLab users that included the four psychology tests (LOT-R, STAI, Rosen's Self-Esteem, CFC), the Cognitive Reflection Test (CRT), other tests, directions checks, and demographical information. A STATA algorithm was written for the aforementioned tests to generate an "asymmetry score" based on differences in equally-weighted groups of reverse-coded items (positives and negatives). Dependent on the test, asymmetry scores close to 0 reflected users who consistently answered these questions.

Our findings suggest that while usage has a weak correlation with consistency measures, test-taking time and asymmetry have been correlated with CRT scores. Specifically, individuals in the bottom 15-20% perform poorly on the asymmetry scale and CRT. Finally, our analysis showed that performance had little to do with gender (females actually outnumber males 2:1 on eLab) but that self-proclaimed students did worse on these "performance tests."

Stage 2. Taking these results, we have turned our attention to how we can improve eLab's aggregate performance. I have designed a new study that examines these factors in a shorter test to confirm the results with our current database. The results will be taken to give Yale researchers a better idea of *how* research data will be affected based on cuts by asymmetry, time, and usage. The end goal is to provide a standardization measure to reduce unnecessary noise in Yale's eLab. Additionally, this study will investigate if and how "reformed" users can contribute to increasing the power of future studies. The desired outcome of this research is to provide Yale researchers with recommendations on how to treat data in context of behavioral performance. The study will be administered after my internship is over, but I will return to finish the analysis.

This project was an exciting opportunity to explore not just behavioral economics, scientific design, but also how research methods are developed and standardized. Overall, I think the best

opportunity was to implement my own ideas into a study, although the results have not been obtained yet. It was certainly an interesting transition into the economics major, and it clued me into an entirely different way of thinking.