Mir Adnan Mahmood

Office Address
Department of Economics
The Ohio State University
1945 N High St., 410 Arps Hall
Columbus, OH 43210

https://madnanmahmood.com
mahmood.69@osu.edu
+1 (614) 680-8950

Citizenship and Visa Status
Pakistani (F-1 Visa)

Education
Ph.D. Economics, The Ohio State University, 2023 (expected)
Dissertation: "Essays on Experimental Game Theory"
Committee: Paul J. Healy, John H. Kagel (co-chairs), and John Rehbeck
M.A. Economics, The Ohio State University, 2018
B.Sc. (Hons) Economics, Lahore University of Management Sciences, 2017

Teaching and Research Fields
Primary fields: Experimental Economics, Microeconomic Theory, Economics of Information
Secondary fields: Industrial Organization

Publications
Mahmood, Mir Adnan and Rehbeck, John (2022). "Correcting for Random Budgets in Revealed Preference Experiments." *Games* 13(2): 30

Research Papers
"Global Games with Strategic Substitutes: An Experimental Investigation." **(Job Market Paper)**
We experimentally investigate the theory of global games in a simultaneous three-agent market entry game with strategic substitutes. The payoff from staying out is constant, whereas the payoff from entering depends on a random state, a heterogeneous cost of entry, and decreases in the number of entrants. The game predicts multiple Nash equilibria for intermediate state values. The (global) game, however, where agents observe a noisy but precise private signal about the state has a unique equilibrium where agents adopt threshold strategies that are ordered by the entry cost. This equilibrium persists in the limit and characterizes the unique equilibrium that is selected in the game without noise. The experiment provides support for the theory. Aggregate and individual behavior follow comparative static predictions. A majority of subjects adopt threshold strategies with few mistakes. Finally, a majority of outcomes in the game without noise correspond to the equilibrium selected by the theory.

"To Follow the Herd or Break Away? Overconfidence and Social Learning," with Jason Tayawa
We study the effects of overconfidence in a sequential social learning setting. In a lab experiment, we let subjects form beliefs about their own and others' quality of information by tying the accuracy of their signal to their score on a trivia quiz. Their beliefs about the expected scores allow us to measure and study the effects of confidence on social learning. Our results show that there are two distinct effects of confidence manifesting in their behavior of breaking herds. First, subjects that exhibit more confidence about their relative quiz performance are more likely to follow their signal than the herd. Second, subjects that realize their absolute performance is better than expected are also more likely to follow their signal. The relative overconfident subjects are more likely to benefit from following their signals in easy quizzes, while absolute underconfident subjects are more likely to benefit in hard quizzes after scores are revealed. These findings can be partially explained by a model of social learning where rational agents have information structures that induce overconfidence about their relative signal accuracy.

"Understanding Entry Games using Laboratory Experiments," with John Rehbeck

This laboratory experiment examines behavior in the two-player one-shot complete information entry game of Bresnahan and Reiss (1990) while varying payoff parameters. This entry game is regularly used in empirical industrial organization, but has not been examined experimentally. We find that subjects regularly play dominant strategies (98.2% on average), however there are violations of iterated dominance (13.6% on average). We find more coordination in regions of multiple equilibrium when there are payoff asymmetries (67.3% on average) compared to payoff symmetry (38.4% on average). We also find behavior is monotonic with respect to own and opponent's payoffs.

"Monetary and Non-Monetary Punishment in Public Goods Games: Comparing Teams with Individuals," with John Kagel and Christina Gore

Results from an experiment comparing monetary and non-monetary punishment (sanctions) in a voluntary contribution mechanism (VCM) public good game are reported. Monetary punishment (MP) increased contribution rates more for teams than for individuals, with teams targeting three times as much punishment to below average contributors compared to individuals. Non-monetary punishment (NMP) increased contribution rates for individuals but had no significant effect for teams. Absent punishment, teams had significantly greater reductions in end game contributions than individuals.

"Sharing Information: Could Experts Consolidate?" with Jason Tayawa

In this paper, we analyze a cooperative model of information sharing among experts under four types of information structures, three of which are standard assumptions in the literature. We construct a transferable utility game, called commission games, which captures the value of information for a coalition of experts. We find that the core is empty for commission games that have information structures that satisfy symmetric monotone likelihood ratio property, conditional independence, or perfect correlation. We find a necessary condition that a weaker form of monotone likelihood ratio property leads to indifference between sharing and no sharing if the core exists. Lastly, we give a sufficient condition on the information structure for existence of the core, which imposes strong complementarity of information between experts.

"A Matching Theory approach to the Time Minimization Assignment Problem,"

We apply a mechanism design approach to the time minimization assignment problem studied in the operations research literature. A group of workers is to be assigned to tasks. Workers have preferences over tasks as well as scores that determine their compatibility with the tasks. Tasks have a priority schedule that is dependent on the workers' scores. We introduce a notion of time taken to complete a task based on the weakest link principle and use the metric of time minimization as a means of comparison. We look at existing matching mechanisms and compare how they perform in terms of notions of stability and time minimization. We find inconclusive evidence of a particular mechanism outperforming the others in this regard.

Research in Progress

"Rational Inattention and Non-Bayesian Individuals," with Jason Tayawa

"Gender Biases in Social learning," with Sam Stelnicki and Xiaomin Bian

"How Far I'll Go: Coordination with Disparate Types," with J. Braxton Gately and Ashley McCrea

Conference and Seminar Presentations

2022	MEA Annual Meeting; ESA World Meeting; Stony Brook Game Theory; ESA North American Regional Meeting (scheduled)
2021	MEA Annual Meeting; ESA Global Online Meeting; ESA North American Regional Meeting

Workshops

2022	CTESS Summer School on Theory-Based Experiments, Caltech
2020	25th Annual IFREE Workshop, Chapman University

Research Experience and Other Employment

2020 – Present	The Ohio State University, Graduate Research Associate for Dr. John Kagel
2016 – 2017	Lahore University of Management Sciences, Research Assistant for Dr. Husnain Fateh Ahmad

Professional Activities

Referee for: *American Economic Review: Insights*
Treasurer for the Economics Graduate Student Society at Ohio State (2019-2020)

Honors, Scholarships, and Fellowships

2022	Decision Sciences Collaborative Small Research Grant ($3,000, OSU)
2021	Burton Abrams Dissertation Award (OSU), JMCB Small Research Grant ($2,500, OSU)
2020	Departmental Citation for Excellence in Teaching (OSU)
2019	Decision Sciences Collaborative Research Grant ($2,858, OSU), JMCB Small Research Grant ($2,500, OSU)
2017-2018	University Fellowship (OSU), NMF Scholar (LUMS)

Teaching Experience

Spring 2020	ECON 8714 (Microeconomic Theory IIB), The Ohio State University, TA for Professor Huanxing Yang
Spring 2019	ECON 2001.01 (Principles of Microeconomics), The Ohio State University, TA for Ida Mirzaie
Spring 2017	ECON 435 (Advanced Game Theory), Lahore University of Management Sciences, TA for Professor Bilal Khan
Fall 2016	ECON 100 (Principles of Economics), Lahore University of Management Sciences, TA for Professor Husnain Fateh Ahmad

Skills

Programming: Python, Stata, SQL, LaTeX, oTree, zTree, HTML, JavaScript
Languages: English (native), Urdu (native), Punjabi (native), French (beginner)

References

Professor Paul J. Healy
Department of Economics
The Ohio State University
+1 614-247-8876
healy.52@osu.edu

Professor John H. Kagel
Department of Economics
The Ohio State University
+1 614-292-4812
kagel.4@osu.edu

Professor John Rehbeck
Department of Economics
The Ohio State University
+1 614-292-6701
rehbeck.7@osu.edu