



Why Experimental Economics is Important

Not long ago, conventional wisdom in the economic community held that because economics is a science concerned with complex, naturally-occurring systems laboratory experiments – traditionally reserved for the ‘hard sciences’ – were of little value to researchers. Today, after decades of research and development, the field known as ‘experimental economics’ has become a well-established force in the academic community.

The experimental pioneer Dr. Vernon L. Smith – widely cited as the ‘father of experimental economics’ – is largely responsible for elevating this science from obscurity to popular acceptance.

The initial impetus for this transformation came from studies of individual choice behavior. Originally, economists focused on microeconomic theories that relied heavily on assumptions about individuals’ preferences. The fact that these preferences are difficult to observe in natural environments led Dr. Smith to look to the laboratory to see if the assumptions made about individuals were, in fact, descriptive of their behavior, and thus, provable in a scientific way. By devising and running markets and electronic trading systems, and through the use of actual people as ‘market actors,’ Smith established laboratory testing as a means of determining the validity of various economic theories.

Using cash-motivated human subjects, Smith’s experiments create real-world incentives to help researchers better understand why markets function as they do. In essence, experimental economics allows for the controlled study of markets. Through rigorous testing and re-testing, Smith’s experimental method allows researchers to learn how and why markets react to changes in the ‘rules of the game’ – laws, regulations and institutions. The lessons drawn from experimental economics are of immense value to both researchers and policymakers, and can be applied widely to such areas as financial market theory and behavior, natural resource economics, and the deregulation of network industries.

Vernon Smith conducted his first experiments in the mid-1950s while teaching at Purdue and Stanford Universities. Using his students as subjects, Smith found that even with very little information and a modest number of participants, subjects converge rapidly to create a competitive equilibrium. Specifically, Smith’s experiments proved large numbers of perfectly informed economic agents were not prerequisites for market efficiency – a radical departure from conventional economic thought.

Smith compiled his early experiments and, in 1962, published his findings in the Journal of Political Economy. His article, “*An Experimental Study of Market Behavior*,” is today considered the landmark paper on experimental economics.

The slow but steady development in experimental economics in the 1950s and 1960s was superseded by accelerated development in the 1970s and 1980s. After establishing himself as the field’s preeminent researcher, Smith collaborated with several noted economists to refine and improve his subject. His early research in experimental economics resulted in three significant discoveries that set the stage for a revolution in experimental methodology.

The first discovery was the posted price effect, which elevated the importance of institutions as a key focus of research in market economics.

The second was Smith's discovery and development of an measure that could be applied to assess the efficiency of institutions implemented in experimental markets in exactly the same way that cost benefit analysis is used to assess the efficiency of naturally occurring markets.

The combination of the posted price effect and the efficiency measure established a laboratory scientific window for the first attempts to use laboratory economics in an active policy context. Smith's third noteworthy discovery was that speculation could be studied in experimental markets and speculative activity could be observed equilibrating markets along the lines of classical theory.

From Smith's foundation of research, the modern experimental methods in economics began to gain acceptance. The research expanded to include the economic performance of many real-world institutions. Attempts to apply laboratory experimental methods to policy problems became systematic. The convergence properties of multiple markets were discovered. Conspiracy, price controls and other types of market interventions were examined experimentally for the first time. New forms of markets were studied, such as methods for deciding on programs for public broadcasting. All of this research stems from the initial and continuing contributions of Dr. Vernon Smith.

Dr. Smith's groundbreaking work has led to an explosion of the applications of laboratory experimental methods. Volumes of experimental papers are being published each year and the number of experimental laboratories are growing rapidly around the world.

The Interdisciplinary Center for Experimental Science ([ICES](#)), which Smith founded and directs, is now the preeminent facility serving as a model for experimental economic and laboratory development throughout the world.