Application to the NBER Digital Economics and AI Tutorial 2023

Name: **Verina Fanyu Que**
University: Rotman School of Management, University of Toronto
Home Address: 41 Evershot Cres, Markham, ON L6E 0L5, Canada
Email Address: f.que@rotman.utoronto.ca

I. A short description of graduate study

I am currently enrolled as a fifth-year Ph.D. student in Quantitative Marketing at Rotman School of Management, University of Toronto.
Major: Quantitative Marketing
Minor: Industrial Organization

My courses of graduate study mainly fall into the Marketing Department at Rotman School of Management and the Economics Department. So far, in my major field, I have taken Marketing Theory I–Consumer Behavior, Marketing Theory II–Strategy, Current Topics in Marketing Strategy, Econometric Methods in Marketing, and Special Topics in the Economics of Technology and Innovation at Rotman.

Marketing Theory I–Consumer Behavior introduces me to basic theories of and research in consumer behavior with perspectives of social psychology as well as behavioral decision theory. *Marketing Theory II–Strategy* introduces me to the key questions and most popular methods used in quantitative marketing. Topics include demand estimation, advertising, pricing, CRM, distribution, sales force management, search, learning, loyalty, branding, behavioral marketing, social media and word-of-mouth, digitization, and marketing policy. *Current Topics in Marketing Strategy* has the focus on theoretical work. We examine the key theory papers in advertising, credence goods, salesforce compensation, innovation, non-rational consumers, green marketing, and two-sided media markets. *Econometric Methods in Marketing* focuses on dynamic structural models. Examples include consumer learning models, inventory and stockpiling problems, durable goods adoption, dynamic price competition, and product positioning. We also explore areas on the frontier, such as approaches that incorporate machine learning and large-scale datasets. *Special Topics in the Economics of Technology and Innovation* addresses three classic questions in the economics of innovation: the relationship between competition and innovation, the impact of innovation on various economic outcomes, and the role of policy in determining the rate of innovation. Moreover, it discusses the direction of innovation, who becomes innovators, and the role of innovation (especially artificial intelligence) in shaping labor markets.

Furthermore, on the econ side, I also took Microeconomic Theory I and II, Econometrics I and II, Industrial Organization I and II, and Empirical Applications of Economic Theory from the Econ Department. The IO courses cover important works in demand estimation (eg. BLP), dynamic demand, production functions, market structure (eg. antitrust, horizontal mergers, vertical markets), static models of market entry, spatial competition, and dynamic games of oligopoly competition.

II. A short description of research

My research interests lie broadly in the economics of digitization, digital privacy, and data economy. I am interested in how the emergence of digital platforms and technologies influence/reshape consumers' preferences and behaviors; how digitization provides new opportunities for startups and small firms to build their brand resilience and marketing channels; and most importantly, how these results draw implications for better policy designs.

Current work-in-progress research projects:

- "The Economics of Digital Privacy", with Avi Goldfarb. *Accepted at Annual Review of Economics*

  This is a review work that goes through recent development in the study of the economics of digital privacy and discuss future directions. There has been increasing attention to privacy in the media and in regulatory discussions. This is a consequence of the increased usefulness of digital data. The literature has emphasized the benefits and costs of digital data flows to consumers and firms. The benefits arise in the form of data-driven innovation, higher-quality products and services that match consumer needs, and increased profits. The costs relate to intrinsic and instrumental values of privacy. Under standard economic assumptions, this framing of a cost-benefit tradeoff might suggest little role for regulation beyond ensuring consumers are appropriately informed in a robust competitive environment. The empirical literature thus far has focused on this direct cost-benefit assessment, examining how privacy regulations have affected various market outcomes. However, an increasing body of theory work emphasizes externalities related to data flows. These externalities, both positive and negative, suggest benefits to the targeted regulation of digital privacy.

Dissertation title: “State-Dependence of Consumer Privacy Choices on Digital Platform”

- I analyze state dependence in consumer privacy choices on a sequence of different apps using a forced data request acceptance in the out-of-battery shocks. Using time series of consumer choice data from a large digital platform with users and third-party apps on both ends, I show the rejection rates to the data request from third-party apps decrease substantially after the shock. I explore the potential mechanisms that lead to the phenomenon of state dependence in online data-consent decisions. The existence of state dependence in consumer online privacy choices provides implications for the policymakers and the platform, such as whether mandatory data requirements for app categories are needed, or whether the platform should develop a “privacy quality" index to rank the apps to better inform consumers.

Committee members: Avi Goldfarb (Advisor), Matthew Osborne, Heski Bar-Isaac, Nitin Mehta