STEPHANIE LEE

slee88@stanford.edu
http://www.stanford.edu/~slee88
Department of Economics
Stanford University
579 Serra Mall
Stanford, CA 94305
(650) 644-5484

ACADEMIC EXPERIENCE

2017 - Foster School of Business, University of Washington, Seattle.
Assistant Professor of Information Systems

EDUCATION

Ph.D. in Economics, Stanford University, 2011-2017.

B.A. in Economics, Stanford University, 2007-2011 (with Honors and Distinction).

GRANTS, FELLOWSHIPS AND AWARDS

2016-17 NBER Digitization Research Grant, Productivity, Innovation, and Entrepreneurship Program (with Pai-Ling Yin).
2016 Outstanding Teaching Assistant Award, Stanford University.
2016 Freeman Spogli Institute Research Grant for Travel, Stanford University.
2014 Gregory Terrill Cox Fellowship in Law and Economics, Olin Program, Stanford University.
2011-12 Stanford Economics Graduate Research Fellowship.
2011 Firestone Medal for Excellence in Undergraduate Honors Thesis, Stanford University.
2011 J. E. Wallace Sterling Award for Scholastic Achievement, Stanford University.
2010 Phi Beta Kappa.
2008 President's Award for Academic Excellence, Stanford University.

TEACHING EXPERIENCE

2016 Teaching Assistant for Prof. Pai-Ling Yin, Stanford University, Econ 101 (Economic Policy Analysis 101: Economics and Strategy).
2014, 2015 Teaching Assistant for Prof. Scott McKeon, Stanford University, Econ 102A (Introduction to Statistical Methods (Post Calculus) for Social Scientist).

RELEVANT POSITIONS

2014-16 Research Assistant for Prof. Timothy Bresnahan,
Mobile Innovation Group, Stanford University.
2013-14 Research Assistant for Profs. Liran Einav and Jonathan Levin, Stanford University.
2012-13 Research Assistant for Prof. Petra Moser, Stanford University.
2009-10 Research Assistant for Prof. Petra Moser, Stanford University.

PUBLICATIONS

Does Bundling Decrease the Probability of Switching Telecommunication Service Providers?, *Review of Industrial Organization*, 50 (2017): 303-322.

I examine whether bundling of telecommunications services makes individuals less likely to switch their service provider because of increased switching costs. Using a detailed survey dataset from the Korea Information Society Development Institute (KISDI), I find that Internet subscribers who previously bundled are less likely to switch their Internet service provider than are those who did not bundle. The results are robust to correction for the potential selection problem through the use of an endogenous treatment model. The finding that bundling reduces the probability of switching service providers and locks-in existing users can have important implications for market competitiveness and consumer welfare.

RESEARCH IN PROGRESS

Quantifying the Benefits of Smartphone Adoption: Digital Device Substitution and Digital Consumption Expansion (Job Market Paper)

Smartphones have revolutionized how individuals use consumer electronics and consume digital goods. I examine the extent to which smartphones have substituted other digital devices and expanded overall digital consumption, and I estimate the newly generated consumer surplus. To do so, I use newly available Korean panel survey data on individuals' digital device ownership and detailed usage. During the 2010-2014 observation period, smartphone penetration in Korea grew from less than 10% to over 70%. I begin by documenting the effect of smartphone adoption on device ownership and time use using a difference-in-differences strategy. I then develop and estimate a model of consumer demand for digital activities, allowing the set of activities to change as a function of the individual's smartphone ownership and physical location. The model allows me to quantify the overall consumer surplus from smartphones, how it varies across demographic groups, and how much of it results from substitution—using a smartphone for activities previously done on other devices—or expansion—using a smartphone for digital activities that were previously inconvenient or difficult. I find that the average monthly consumer surplus per person is $41, where $23 is the surplus from expansion, such as checking emails or searching for information online while commuting. The value is highest for individuals aged 20-30, who indeed constitute the group that adopted smartphones the most. Overall, the total consumer surplus from smartphones in Korea is approximately $49 million per day. I explore the market and policy implications of my estimates through counterfactual exercises. I find that providing free WiFi at public transportation locations in Seoul increases consumer surplus by $117 million per year, which substantially exceeds the annual budget allocated by the government to provide the service.

Are Returns to Innovation Cumulative or Decreasing in Scale? Evidence from Human Embryonic Stem Cells (with Petra Moser).

This paper exploits a restriction in federal funding for human embryonic stem cells (hESCs) under President George W. Bush in 2001 to examine whether research output increases or declines with the amount of prior research in the same field. Publication data indicate that research fields associated with the original set of 21 approved hESCs were significantly more productive, even though the original hESCs lacked genetic diversity and were not connected with any specific disease. We also link hESCs and publications with patents, as a proxy for steps toward commercialization. Patent data reveal an even stronger advantage in output for the originally approved lines. These results suggest that research output for hESCs increases with the amount of prior research, consistent with the concept of cumulative innovation.

War as the Mother of Invention? Effects of the War Powers Acts on US Invention (with Petra Moser).

Less than two weeks after Pearl Harbor, the War Powers Acts of December 18, 1941 expanded the power of the U.S. executive branch and reorganized government agencies to support the war efforts. Part of this effort was the re-activation of the Office of the Alien Property Custodian, which appropriated all patents owned by nationals from enemy countries and licensed them for a nominal fee to U.S. firms. Patent data indicate a significant increase in U.S. invention after U.S. firms were allowed to produce inventions that had been previously protected by enemy-owned patents. The gains from Japanese-owned patents were minimal, whereas the gains from German-owned patents were substantially larger. The gains were also strongest for invention in organic chemistry, in which U.S. demand for invention had been strong before the war.

The Impact of Financial Incentives on Health and Healthcare: Evidence from a Large Wellness Program (with Liran Einav and Jonathan Levin).

Workplace wellness programs have become increasingly common in the United States, although there is not yet consensus regarding the ability of such programs to improve employees' health and reduce healthcare costs. In this paper, we study a program offered by a large US employer that provides substantial financial incentives directly tied to employees' health. The program has a high participation rate among eligible employees, around 80%, and we analyze data on the first four years of the program, linked to healthcare claims. We document robust improvements in employee health, and a correlation between certain health improvements and reductions in healthcare cost. Despite the latter association, we cannot find direct evidence causally linking program participation to reduced healthcare costs, although it seems plausible that such a relationship will arise over longer horizons.

The Advent of New Technology and its Implications on Digital Media Markets: Evidence from Smartphones, Tablets, and Computers (with Timothy Bresnahan and Pai-Ling Yin).

We use unique individual-level German panel data that track and monitor individuals' smartphone, tablet, and computer usage to empirically examine the impact of mobile innovation on individuals' media consumption. We quantify the extent to which computer, smartphone, and tablet use complement and substitute one another. Each digital technology offers different features and user experiences, and we seek to address the following research questions: do individuals engage in similar activities on different digital devices? Or do individuals choose to use different digital devices to engage in different types of digital activities? Which media markets have changed the most with the advent of mobile innovations?

Have vs. Want: Mobile App Complementarity and Substitution in Installation and Usage (with Timothy Bresnahan and Pai-Ling Yin).

The rapid growth of smartphones has been accompanied by the dramatic expansion of the mobile applications (apps) market. We collaborate with a private company and utilize individual-level click-stream data on individuals' mobile app installs and usage. The novel data provide a unique opportunity to empirically examine how consumers download and use their mobile apps. We will examine the heterogeneity in mobile app installs and usage across individuals, as well as the complementarity and substitutability among apps. In addition, most new smartphones come with pre-installed mobile apps that are installed by device manufacturers and carriers. We will examine how individuals use pre-installed apps and whether pre-installed apps are useful to individuals.

REFERENCES

Prof. Liran Einav
Economics Department, Stanford University
(650) 723-3704
leinav@stanford.edu

Prof. Timothy Bresnahan
Economics Department, Stanford University
(650) 723-9471
tbres@stanford.edu

Prof. Jonathan Levin
Graduate School of Business, Stanford University
(650) 723-5962
jdlevin@stanford.edu