

## Accepted Manuscript

combining machine-based and econometrics methods for policy analytics insights

Robert J. Kauffman, Kwansoo Kim, Sang-Yong Tom Lee, Ai-Phuong Hoang, Jing Ren

PII: S1567-4223(17)30014-5

DOI: <http://dx.doi.org/10.1016/j.elerap.2017.04.004>

Reference: ELERAP 708

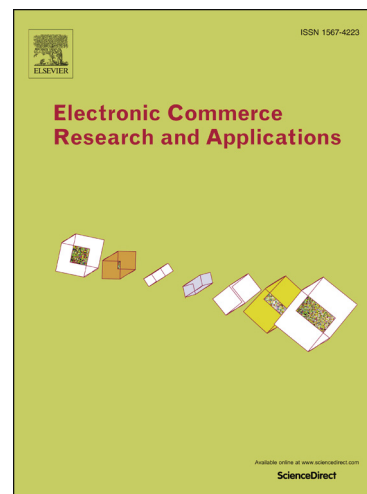
To appear in: *Electronic Commerce Research and Applications*

Received Date: 19 March 2017

Accepted Date: 17 April 2017

Please cite this article as: R.J. Kauffman, K. Kim, S.T. Lee, A-P. Hoang, J. Ren, combining machine-based and econometrics methods for policy analytics insights, *Electronic Commerce Research and Applications* (2017), doi: <http://dx.doi.org/10.1016/j.elerap.2017.04.004>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



## COMBINING MACHINE-BASED AND ECONOMETRICS METHODS FOR POLICY ANALYTICS INSIGHTS

**Robert J. Kauffman (contact author)**

Singapore Management University (rkauffman@smu.edu.sg)

**Kwansoo Kim**

Izmir University of Economics (kwansoo.kim@iz mirekonomi.edu)

**Sang-Yong Tom Lee**

Hanyang University (tomlee@hanyang.ac.kr)

**Ai-Phuong Hoang**

Singapore Management University (aphoang.2013@phdis.smu.edu.sg)

**Jing Ren**

Singapore Management University (jing.ren.2012@phdis.smu.edu.sg)

Last revised: April 20, 2017

Forthcoming in *Electronic Commerce Research and Applications*.

---

### ABSTRACT

*Computational Social Science* (CSS) has become a mainstream approach in the empirical study of *policy analytics issues* in various domains of e-commerce research. This article is intended to represent recent advances that have been made for the discovery of new policy-related insights in business, consumer and social settings. The approach discussed is *fusion analytics*, which combines machine-based methods from Computer Science (CS) and explanatory empiricism involving advanced Econometrics and Statistics. It explores several efforts to conduct research inquiry in different functional areas of Electronic Commerce and Information Systems (IS), with applications that represent different functional areas of business, as well as individual consumer, social and public issues. Recent developments and shifts in the scientific study of technology-related phenomena and Social Science issues in the presence of historically-large datasets prompt new forms of research inquiry. They include blended approaches to research methodology, and more interest in the production of research results that have direct application to industry contexts. This article showcases the methods shifts and several contemporary applications. They discuss: (1) feedback effects in mobile phone-based stock trading; (2) sustainability of top-rank chart popularity of music tracks; (3) household TV viewing patterns; and (4) household sampling and purchases of video-on-demand (VoD) services. The range of applicability of the ideas goes beyond the scope of these illustrations, to include issues in public services, healthcare, product and service deployment, public opinion and elections, electronic auctions, and travel and tourism services. In fact, the coverage is as broad as for-profit and for-non-profit, private and public, and governmental and non-governmental institutions.

**Keywords:** Causality, Computational Social Science, data analytics, econometrics, e-commerce, empirical research, fintech, fusion analytics, music popularity, stock trading, policy analytics, TV viewing, video-on-demand (VoD)

---

**Acknowledgments.** This research was supported by the Singapore National Research Foundation under its International Research Centre @ Singapore Funding Initiative and administered by the Infocomm Development Authority. Readers should recognize that non-disclosure agreements prevent us from sharing the organization identities and names of key informants, as well as details of the data and the findings that our sponsors view as privileged information. A related version of this work was presented at the 50<sup>th</sup> Anniversary Hawaii International Conference on Systems Science (HICSS) in January 2017, held in Waikoloa, Hawaii, in the Minitrack on 'Integrating Business Operations, IT and Consumer Behavior' in the Organizational Systems and Technologies Track. We are grateful to a number of individuals for their comments and interest in this research: Avi Seidmann, Jennifer Zhang, Yabing Jiang, Huaxia Rui, Rajiv Dewan, and several anonymous reviewers of the conference submission. We benefitted from the input at different times of other colleagues: Ee-Peng Lim, Steven Miller, Steve Fienberg, Hoong Chuin Lau, Archan Misra, Alexis Tsoukiàs, and Ramayya Krishnan, as well as Pulak Ghosh, Bing Tian Dai, Zhuolun Li, Gwangjae Jung, Peiran Zhang, Myung-Rae Chang, and YoungOk Kwon, when they were at SMU's Living Analytics Research Centre (LARC). We also appreciated suggestions from Kustini Lim-Wavde, Ryan Sougstad, Bin Wang, Jennifer Chen, Ursula Higgins, Morad Benyoucef, Tuan Anh Hoang, Jiali Du, Zhiyuan Gao, David Phang, Zhaoxia Wang, Qihong Wang, and Chris Yang. The authors are solely responsible for any errors and omissions.

---

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات