

THE HONG KONG POLYTECHNIC UNIVERSITY DEPARTMENT OF MANAGEMENT AND MARKETING

Departmental Research Seminar

The Effect of AI-Enabled Credit Scoring on Financial Inclusion: Evidence from One Million Underserved Population

By

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Date : 9 Mar 2023 (THU)

Time : 9:30 – 11 am

Venue : Online via Zoom

Abstract

We studied the effect of adopting an AI-enabled credit scoring model by a major bank on financial inclusion as measured by changes to the approval rate, default rate, and utilization level of a personal loan product for the underserved population. The bank served over 50 million customers and used a traditional rule-based model in their evaluation process. It recently developed and deployed an AI model to complement the traditional model as motivated by a series of government policies. We applied a difference-in-differences approach to investigate the impacts of the AI model. We found that the adoption of the AI model enhanced financial inclusion for the underserved population by simultaneously increasing the approval rate and reducing the default rate. Further analysis attributed the enhancement in financial inclusion to the use of weak signals by the AI model and its sophisticated AI algorithm. We also found the impacts of the AI model heterogeneous across subgroups, and those with missing weak signals or unfavorable weak signals saw smaller improvements or no improvement in the approval rate. A simulation-based analysis showed that a simpler AI model could still increase the approval rate and reduce the default rate of the underserved population. Our study provided rich practical implications on social justice by documenting how AI models can complement traditional models in affecting financial inclusion.

Prof. Bin Gu is Everett W. Lord Distinguished Faculty Scholar, Professor and Department Chair of Information Systems at the Questrom School of Business, Boston University. His research focuses on using information technologies to address information asymmetry in business and society with over 30 journal articles in leading business school journals including *Management Science*, *MIS Quarterly*, *Information Systems Research*, *Journal of Management Information Systems* and others. Professor Gu was recently named a Distinguished Fellow by the INFORMS Information Systems Society for his intellectual contribution to the IS field. He currently serves as a senior editor for *Information Systems Research* and has served as a senior editor for *MIS Quarterly*. Professor Gu obtained his PhD and MA degrees from the Wharton School of Business at University of Pennsylvania and his BEng dual degrees in International Business and Computer Science from Shanghai Jiaotong University.

All interested are welcome.



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