Lei Hua

January 2021

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EDUCATION

University of Texas at Arlington — Arlington, Texas
Ph.D. Business Administration (Management Science) – GPA 4.0 — 2017 - 2021 (Expected)

University of Rochester — Rochester, New York
M.S. Accounting – GPA 3.8 — 2015

Winthrop University — Rock Hill, South Carolina
B.S. Accounting – GPA 4.0 — 2013

RESEARCH INTERESTS

Supply chain network, behavioral operations management, competitive bargaining, supply chain contracting, procurement auction, e-commerce, artificial intelligence.

WORKING PAPERS

"Bargaining under Supply Chain Competition with Network Asymmetry"

- Authors: Lei Hua, Alper Nakkas, Kay-yut Chen
- Job market paper
- Target at Management Science

Abstract: We examine implications of retail level competition on supply contract negotiations when retailers have asymmetric supplier bases. We represent the asymmetric supplier bases with a two-retailer-two-supplier network in which one retailer has access to both suppliers and other retailer has access to only one supplier. The retailers first negotiate supply contracts with their suppliers to gain exclusive selling rights and then the retailers who manage to secure a contract with a supplier choose their market prices. The asymmetric structure of supply network together with retailer level competition dynamics determine the contract bargaining incentives of retailers and suppliers. We find that supply chain network asymmetry can lead to a retail monopoly when the suppliers' products are sufficiently substitutable. Further, if the substitutability level continues to rise, the retailer with larger supplier base gain benefits in contract agreement through negotiations. We also show that total industry profits can be higher under asymmetric network structure as compared to that under complete network structure. Overall, our research suggests that the supply chain network structure can fundamentally impact firms' contracting behaviors, and thus, needs to be considered to better reflect the reality of contractual negotiation under competition.

"Bargaining on Supply Chain Contract in a Two-sided Network: A laboratory Investigation"

- Authors: Lei Hua, Alper Nakkas, Kay-yut Chen, Jason Xianghua Wu
- Target at Management Science

Abstract: This paper studies contract bargaining in two-sided supply chain networks where retailers on the demand side order products from suppliers on the supply side and then sell to the consumer market. In such a supply chain network, a retailer and a supplier need a business relationship or "link" to bargain and trade with each other, and the retailers may have heterogeneous valuations on the products ordered from the supply partner. With both theoretical and behavioral

studies, we reveal behavioral regularities on contract bargaining outcomes due to both network structure and market value heterogeneity. We find that players who link with more potential partners or who have more perceived values tend to earn more in contract bargaining procedure. We develop a new behavioral theory, referred to as *desperateness theory*, to better capture and predict the actual behaviors in the networked supply chain contract bargaining game.

"Buyer-side Supply Chain Contract Auction"

- Authors: Lei Hua and Kay-yut Chen
- Target at Management Science

Abstract: This paper analyzes a selling problem with one supplier and multiple potential buyers who hold private information about their own processing costs. We theoretically and behaviorally study two versions of this supply contract auction mechanism called Bid on F mechanism and Bid on W mechanism. Our experimental data suggests systematic deviations from the theoretical benchmark. In particular, suppliers tend to overset per-unit wholesale price (W) under Bid on F mechanism and underset lump-sum fee (F) under Bid on W mechanism and can earn a higher expected profit under Bid on F mechanism than the other. As for buyers, they tend to overparticipate and overbid in almost all treatments of the experiment. Additionally, we also find significant order quantity overshooting behavior for winning buyers in all treatments, which breaks the well-known "pull-to-center" effect in the standard newsvendor model. We further build up the behavioral model and find out that bounded rationality and prospect theory together are reasonable explanations for the new experimental phenomenon.

"Can Artificial Intelligence Discover Trust and Trustworthiness?"

- Authors: Jason Xianghua Wu, Kay-yut Chen, Dianna Yan Wu and Lei Hua
- Target at Science

Abstract: We develop deep neural network-based artificial intelligent (AI) agents to play the trust game, a simple economics scenario popular in the literature, to study trust and trustworthiness behaviors in human subjects. We establish that trust and trustworthiness behaviors, defined by the trust game, can be discovered by, and emerged from, self-learning processes of these artificial intelligence agents, under the right conditions. The training process involved no data that contains any information about trust, nor specific assumptions about trusts built into the process. Hence, we show that artificial intelligent agents can discover trust and trustworthiness behaviors by pure interacting and learning with one another. We also identify conditions, including caring about the future, have access to records of past actions and stable training partners, that enable trust and trustworthiness to emerge.

CONFERENCES & WORKSHOPS

INFORMS Business Analytics Conference (scheduled)	2021
POMS Annual Conference (scheduled)	2021
Northeast Decision Sciences Institute Annual Conference (scheduled)	2021
Workshop on Innovative Research in Digital Operations	2021
The 12th Workshop on Behavioral Operations Management	2020
POMS Annual Conference	2018

Honors & Awards

Carla Buss Memorial Scholarship, UT Arlington	2020
Scholarships COB/Lawrence Schkade Endowed Fellows Fund, UT Arlington	2020
ISOM Excellence Scholarship, UT Arlington	2020
Business Deans Restricted Research Grant, UT Arlington	2020
College of Business Dissertation Research Grant, UT Arlington	2019
ISOM Departmental Research Grant, UT Arlington	2018
Graduate Doctoral Fellowship, UT Arlington	2016-2020
Dean's List (Highest Honor), University of Rochester	2015
Merit Scholarship, University of Rochester	2014-2015
President's List (Highest Honor), Winthrop University	2011-2012
Peabody Scholarship, Winthrop University	2011-2013

Teaching Interests

Operations Management	Supply Chain Management	Sourcing and Contract Management
Healthcare Operations Management	Business Analytics	Business Statistics
Business Data Mining	R/Python Programming	Business Intelligence

Teaching Experience

Instructor - University of Texas at Arlington

- Operations Management — Fall 2020, Spring 2020, Fall 2019
  - Teaching evaluation: 4.40/5.0; 4.32/5.0; 4.42/5.0
  - Enrollment: 76; 72; 70
- Business Statistics — Summer 2020, Summer 2019, Spring 2019
  - Teaching evaluation: 4.38/5.0; 4.66/5.0; 4.14/5.0
  - Enrollment: 69; 65; 63

Teaching Assistant - University of Texas at Arlington

- Game Theory Seminar (Ph.D. level) — Spring 2021
- Operations Management (Master's level) — Spring 2020
- Global Supply Chain Management (Master's level) — Fall 2019, Fall 2018
- Introduction to Management Science (Master's level) — Fall 2018
- Enterprise Resource Planning (Master's level) — Fall 2018

Computer Skills

Programming and Analysis: R, Python, Mathematica, Stata, SAS

Experimental Research Platforms and Software: SoPHIE Lab, oTree, Qualtrics

Others: HTML, CSS, JavaScript, PHP, LaTeX

Professional Organization Membership

Academy of Management (AOM)

Association for Supply Chain Management (ASCM)

Decision Sciences Institute (DSI)

Institute for Operations Research and the Management Sciences (INFORMS)

Production and Operations Management Society (POMS)

Society for Judgment and Decision Making (SJDM)

References

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Alper Nakkas (Dissertation Committee Member)
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UNIVERSITY OF TEXAS ARLINGTON | COLLEGE OF BUSINESS

January 20, 2021

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Faculty Search Committee
Name of University
Name of Department
Address of Department
City, State. Zip Code

Dear Sir or Madam,

My name is John Smith and I'm applying to the academic position in this subject at the Name of University. I have experience teaching something and something else and my research focuses on this and that. I completed my Ph.D. in this subject in September 2015 at my alma mater.

My educational background is in this and that at the former university along with an earned Master's and Ph.D. degree in this recent subject at this alma mater. I have taught this, that, and everything else. My research is in this area, that area, and another area still.

My dissertation advisor, Professor Head Adviser, and committee members Professor Two and Professor Three have been instrumental throughout my time at Home University. Please feel free to contact me with any questions.

Sincerely,

John Smith