Graduate School of Engineering
The University of Tokyo
Kimita Laboratory

Research Themes

Economic/environmental evaluation of sharing business

Dynamic pricing of subscription

Institutional design of recycled material market

Data platform for new/used products

STI policy for Circular Economy

Design for Circular Economy Ecosystem

Design of products/services, business models, and systems for resource efficiency and economic rationality

Eco-design

Service Design

Servitization

Platform(PF) /Ecosystem

Science, Technology & Innovation Policy

Design Engineering

Life Cycle Assessment

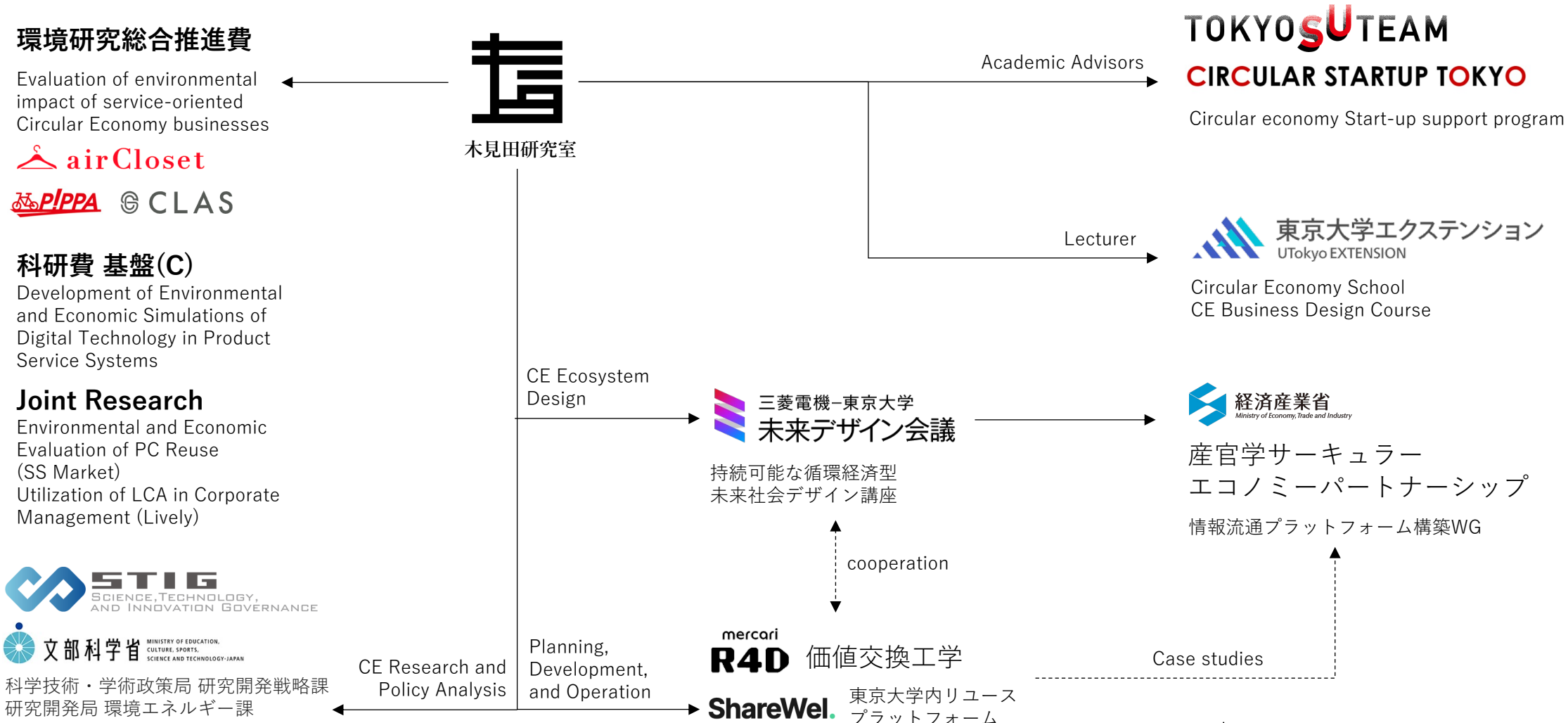
Game Theory

Structural Estimation

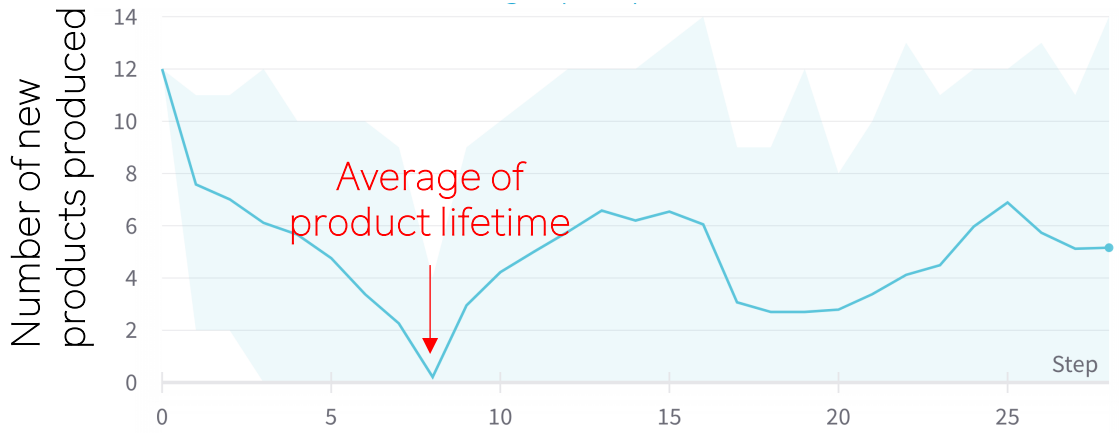
Reinforcement learning

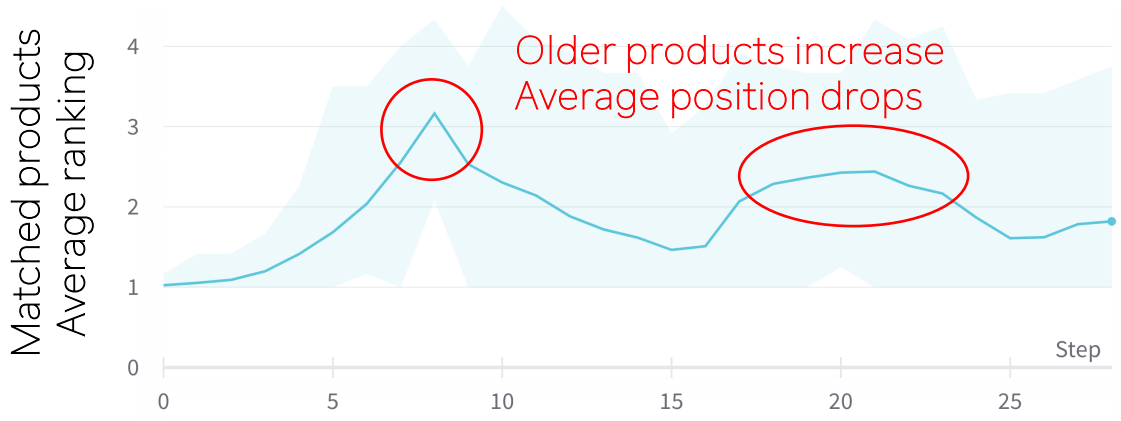
Bibliometrics

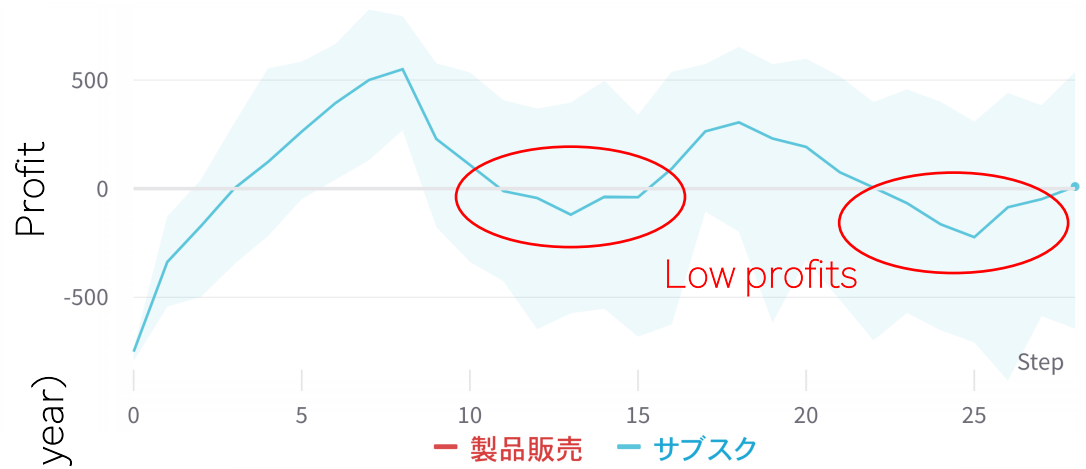
Research Projects

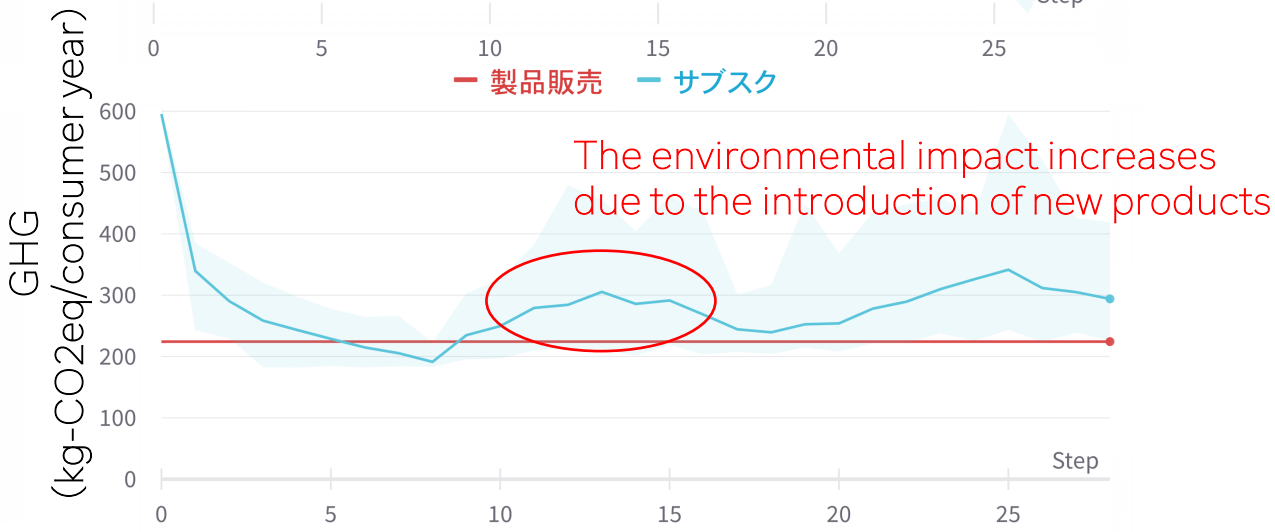


Economic/Environmental Simulation of Home Appliance Subscriptions

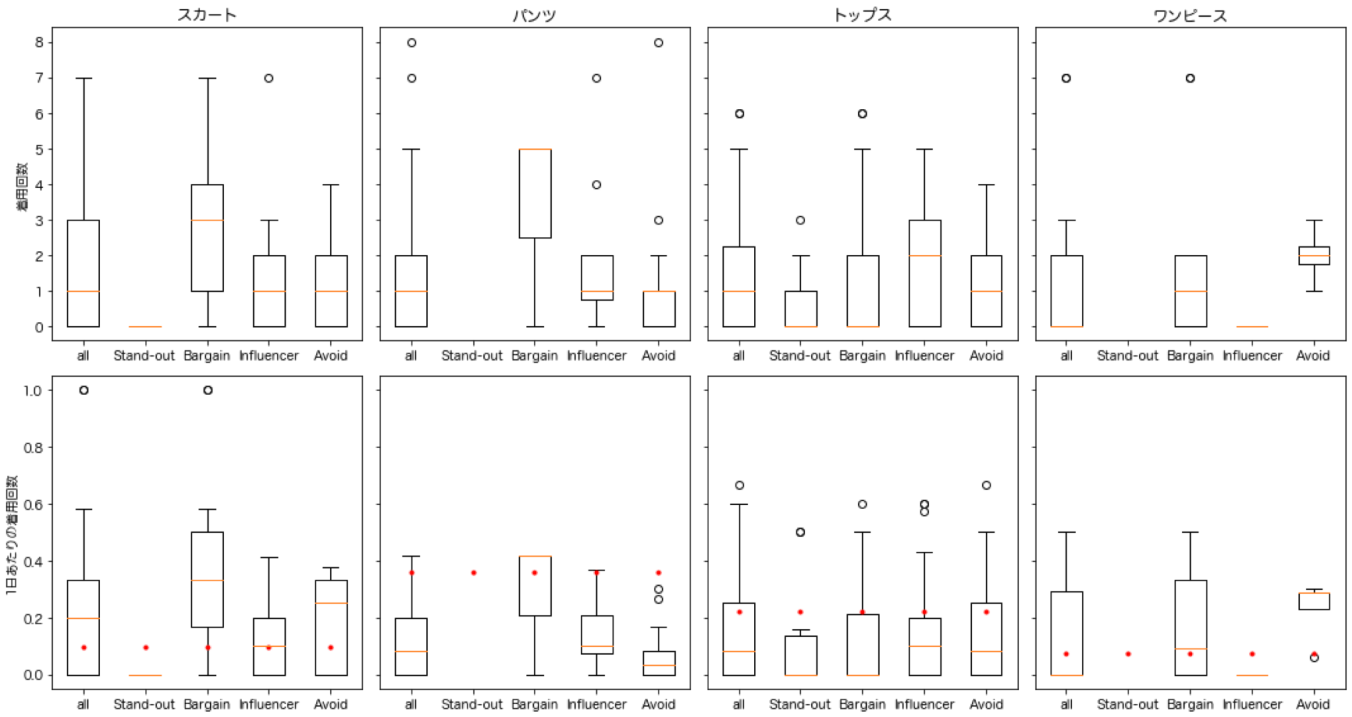


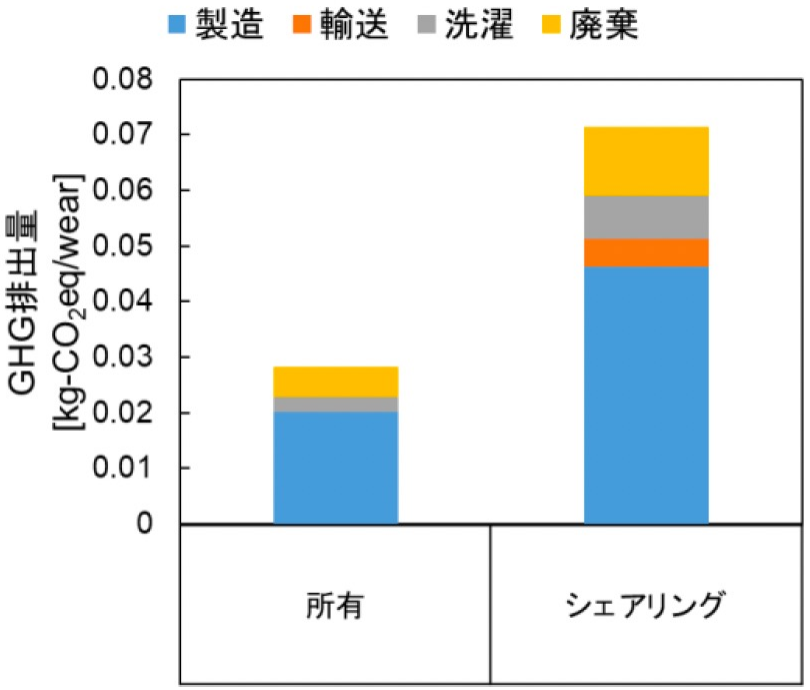






Economic and environmental evaluation of clothing sharing





ニット・セーター

Stand-out: 人とは違う、ユニークな服を買う　Bargain: バーゲン服やセールしている服を買う
Influencer: 流行している服を買う　Avoid: 服は必要になった時だけ買う

Sustainable Circular Economy Future Society Design

WP0：Circular ecosystem design

- WP1～WP4の統合、循環エコシステムの設計方法論の構築
- 循環エコシステムのモデリング手法とシミュレータの開発
- シナリオ設計などを用いて循環エコシステムのあるべき姿の設計と評価

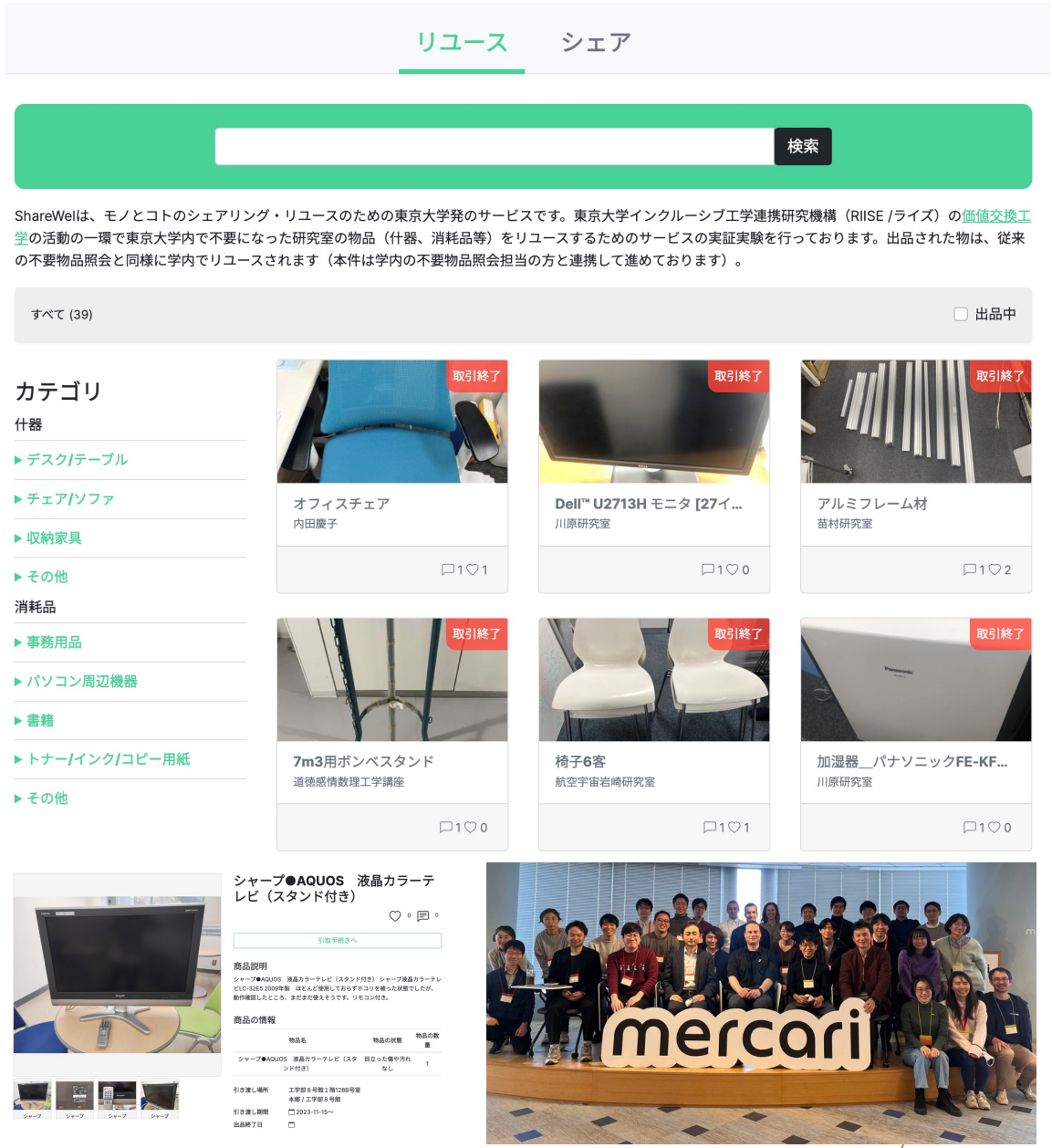
WP1	WP2	WP3	WP4
Business Model transition	Products & Circulation Integrated Design	Life cycle management	Institutional design
CEビジネスモデルの環境性・経済性の評価	動静脈データ連携のあるべき姿の探索	データ駆動型ライフサイクルマネジメント手法の開発	エコシステムへの参加を促す規制等の検討

Case

(Mitsubishi Electric's Business; FA, air conditioning, home appliance…)

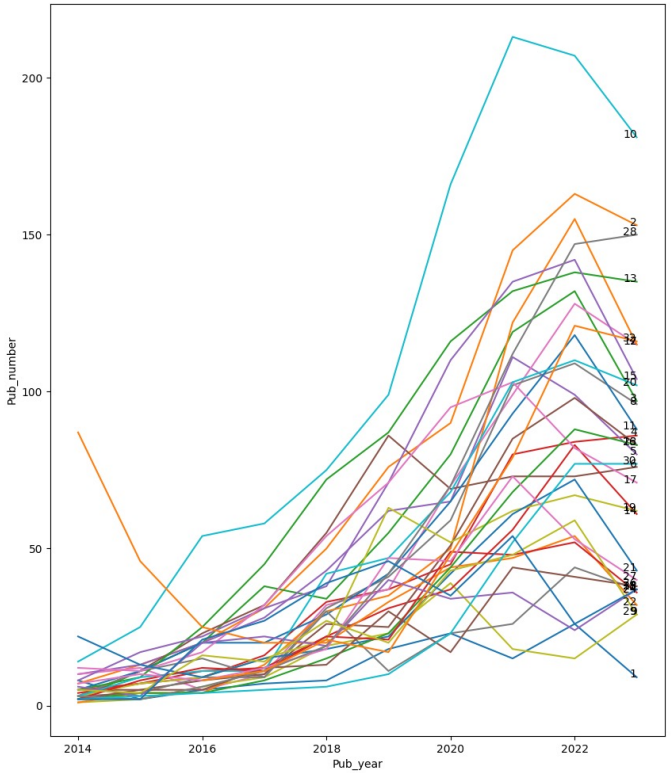
ShareWel

- A platform for reusing and sharing items within the university
  - Effective utilization of research equipment and reduction of waste
  - Promoting cross-disciplinary human resource exchange and the circulation of knowledge through the circulation of goods
- Pilot experiment starting in November 2023 at the Graduate School of Engineering
- Number of registrants: 613, Number of items listed: 260, Number of transactions: 81
- Various researchers from fields such as Mechanical Engineering, Informatics, Management of Technology and Strategy, Systems Innovation, and Economics are participating
- Collaboration with Mercari (hosting workshops, etc.)

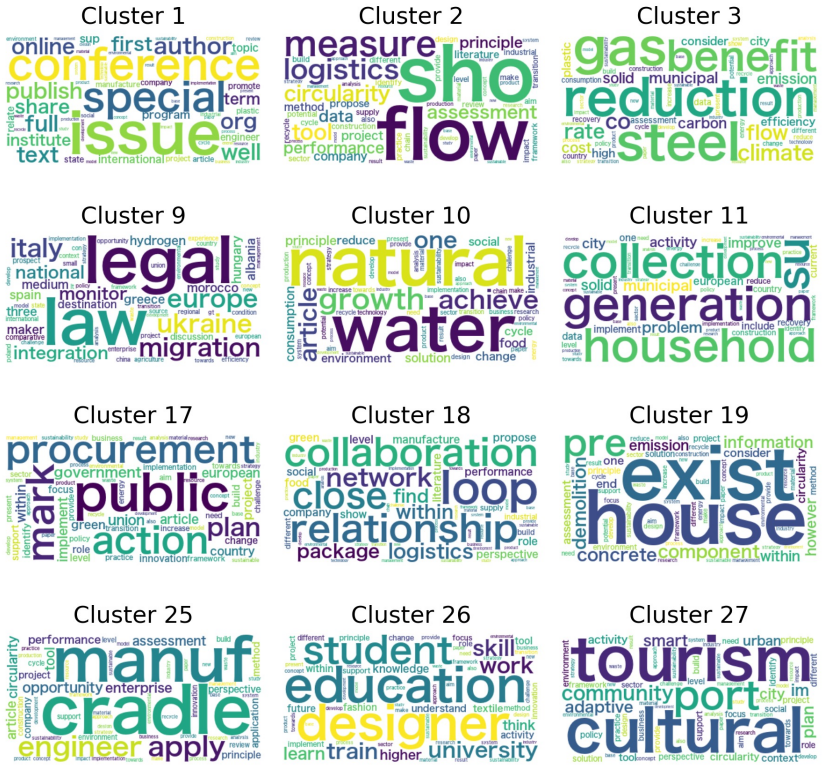


STI Policy for Circular Economy

Paper Analysis



Cluster Analysis Using Natural Language Processing



Extraction of research themes using ChatGTP

1	Revolutionizing Waste Management in Eco-villages
1	Advancements in Polymer Recycling Techniques
2	Ecological Economics and Regenerative Society Development
2	???
2	Green Logistics In Digital Transformation Era
2	Advancing Novel Bioeconomy Through Bioplastics Production
2	Advancements in Waste-to-Energy Conversion Technologies
2	Integration of Bio-Waste in Aquaculture Industry
2	Innovative Trade Frameworks in a Zero-Waste Economy
2	Advancements in Eco-conscious Public Procurement Strategies
3	Advances in Agriculture Eco-Efficiency Development Models
3	???
3	Digital Product Passports in Data Governance
3	Digitalization's Role in Eco-Friendly Manufacturing

Developing analytical methods to support decision-making in STI policy