



Connecting Minds, Shaping the Future of Sustainability Research

As we journey into the second semester of AY 2023/24, our LKCSB Sustainability Research Peak Team is delighted to present new sustainability papers contributed by LKCSB faculty members. These papers encompass academic publications, practitioner articles, and case studies, building upon the content shared in our first newsletter. Our esteemed faculty members have delved deep into a diverse array of sustainability topics illustrating the multifaceted nature of sustainability ranging from environmental sustainability (e.g., advancements in sustainable transportation management and a role of environmental sustainability in shaping financial outcomes and investment behavior), social sustainability (e.g., employee welfare/wage), impact measurement and valuation project, and human sustainability (e.g., wastewater management and sustainable dietary).

Academic Publications

Environmental Sustainability

Advancements in Sustainable Transportation Management

As the world transitions toward a more sustainable future, the rapid adoption of electric vehicles (EVs) stands as a pivotal step in reducing greenhouse gas emissions and combating climate change. Efficiency in EV charger systems represents a vital step in facilitating EV usage.



Prof. Yangfang Zhou (Operations Management) published a paper in

Manufacturing and Service Operations Management titled “*An exponential cone programming approach for managing electric vehicle charging*” which revolves around optimizing the scheduling of electric vehicle (EV) charging to minimize costs for the service providers. The study utilizes stochastic programming (SP) and exponential cone program (ECP) approximations to address the large-scale nature of the problem. Her paper supports efficient use in public charging infrastructure.

Paper Link: [An Exponential Cone Programming Approach for Managing Electric Vehicle Charging](#)

Another published paper in **Manufacturing and Service Operations Management** by **Prof. Yun Fong Lim (Operations Management)** titled



“*Vehicle Rebalancing in A Shared Micromobility System with Rider Crowdsourcing*” also offers insights into improving the efficiency in transportation systems. This paper focuses on optimizing the management

of shared micromobility vehicles to address the imbalance between supply and demand in different service regions. The main finding is that by incorporating both rider crowdsourcing and third-party logistics (3PL), there is an increase in profits, a reduction in demand loss, and an improvement in vehicle utilization rates without compromising existing commitments.

Paper Link: [Vehicle rebalancing in a shared micromobility system with rider crowdsourcing](#)

A role of environmental sustainability in shaping financial outcomes and investment behavior

Carbon pricing is widely recognized as an effective tool for reducing carbon emissions. Despite the effectiveness of carbon pricing, its widespread adoption in a more aggressive manner is not as prevalent. This puzzle has been investigated by **Prof. Weikai**



LI (Finance) on a working paper titled “*The Effect of Carbon Pricing on Firm Performance: Worldwide Evidence*” which provides an explanation that the enactment of carbon pricing policies can lead to significant reduction in the profitability and value of carbon-intensive firms relative to low-emission firms. This finding uncovers economic impacts of carbon pricing policies on individual firms.

Paper Link: [The Effect of Carbon Pricing on Firm Performance: Worldwide Evidence](#)

On investor perspective, a working paper titles “*The Surprising Green Performance of Retail Investors: A New (Behavioral) Channel*” by **Prof. Hong Zhang (Finance)** discovers the surprising result that investors with a higher proportion of green stocks in their portfolios achieve superior risk-adjusted returns because green awareness helps investors mitigate behavioral bias. This paper suggests a novel behavioral perspective that illuminates the role of green awareness in shaping investment decisions and investor welfare.



Social sustainability

In contemporary discourse, there is a heightened focus on the imperative of social sustainability, which involves fostering societal well-being alongside economic prosperity. Inclusivity in the workplace, worker compensation, and welfare have gained more attention from researchers recently.

Profs. Shilpa Madan (Marketing)

wrote an interdisciplinary paper related to employee wage with a title “*Support for Increasing Low-Wage Workers’ Compensation: The Role of Fixed-Growth Mindsets About Intelligence*” published in *Journal of Experimental Psychology* and *Harvard Business Review*. This study indicates that individuals’ beliefs about intelligence, specifically whether they have a fixed mindset or a growth mindset, may influence their stance on raising the minimum wage. By using correlational and experimental method, this paper suggests that promoting a growth mindset about intelligence could be a strategic approach for garnering support across various social classes and income levels.



Paper Link: [Support for increasing low-wage workers’ compensation](#)

Impact Measurement and Valuation

Despite substantial global investments in sustainability and ESG initiatives, standardized frameworks for measuring the monetary value and outcomes of ESG investments remain undefined. Establishing standardized measurement and valuation methods is crucial to ensure that ESG investments indeed lead to significant societal and environmental advancements.

Prof. Liang Hao (Finance) is leading a project to

apply the Impact-Weighted Accounts Framework methodology in measuring the societal impacts of business operations, investment, as well as research of institutes for higher education. The later may turn into a “SMU Impact Report”. Sponsored by the Ford Foundation, the project conducts pilot



studies with industry leaders such as DBS, CapitaLand, and Shanghai Pudong Development Bank.

Human Sustainability

Climate change has posed significant challenges to ensuring sustainable and reliable access to freshwater resources for urban populations. Process optimization of urban water supply is essential to tackle this problem and improve society and well-being. **Prof. Onur Boyabatli (Operational Management)** wrote a working paper on a title of



“*Wastewater Recycling Capacity Investment in Urban Water Management*”. This study proposes an analytical aggregate capacity planning model to characterize the optimal wastewater recycling capacity level and the subsequent water allocation decisions for the urban water utility. This research highlights the complex interplay between factors such as rainfall variability, wastewater recycling costs, and demand dynamics, providing valuable insights for decision-makers in urban water management.

On the side of sustainable dietary, understanding the factors influencing consumer acceptance, such as effective communication strategies and the role of age and attitudes toward nature, is crucial for the food industry. **Prof. Mark Chong (Communication Management)** documents an related evidence in his



“*Effects of framing, nomenclature, and aversion to tampering with nature on consumer acceptance of cultivated meat in Singapore*” published in *Journal of Environmental Psychology*. His study reveals that no dominant frame that was most effective in increasing acceptance of cultivated meat among Singapore consumers, but term "cultivated meat" was preferred, and unexpected positive relationships are identified between aversion to tampering with nature and perceived benefits and willingness to consume cultivated meat.

Paper Link: [Effects of framing, nomenclature, and aversion to tampering with consumer acceptance](#)

In addition, he also published another paper in *Frontiers* related to food sustainability titled “*Not getting laid: consumer acceptance of precision fermentation made egg*” which finds a high level of consumer acceptance for precision fermentation (PF) made egg products across Germany, Singapore, and the USA, due to several factors such as egg consumption habits, income, animal welfare and health concerns.

Paper Link: [Consumer acceptance of precision fermentation made egg](#)

Practitioner Articles

The following is a list of recent practitioner articles authored by our faculty members in the field of sustainability practice.

1. Increasing the Acceptance of Cultivated Meat, Nov 2023 by **Prof. Mark Chong**

Paper Link: [Increasing the Acceptance of Cultivated Meat](#)

2. Pioneering a Smart, Sustainable, and Resilient Future, Sept 2023 by **Prof. Chiraphol Chiyachantana (Finance)** and **Prof. David Ding (Finance)**.

Paper Link: [Pioneering a Smart, Sustainable, and Resilient Future](#)

3. How Centralized Organizations Involve Stakeholders in the Strategy Process, May 2023 by **Prof. Daniel Z. Mack (Strategy & Entrepreneurship)**.

Paper Link: [How Centralized Organizations Involve Stakeholders in the Strategy Process](#)

Case Studies

Our faculty members have recently created the following sustainability case studies

1. Safe in India: Casting Light on the Dark Side of Workers’ Safety in the Automotive Industry, Feb 2024 by **Prof. Reddi Rayalu Kotha (Strategy & Entrepreneurship)**

Paper Link: [Safe in India: Casting Light on the Dark Side of Workers' Safety in the Automotive Industry](#)

2. Food from the Heart's Digital Transformation Journey: Change Strategy and Leadership, Dec 2023 by **Prof. Heli Wang**.

Paper Link: [Food from the Heart's Digital Transformation Journey](#)

3. The Other WTO: Using Toilet Humour to Facilitate Global Access to Toilets, Jan 2023 by **Prof. Kenneth Goh (Strategy & Entrepreneurship)**

Paper Link: [The Other WTO: Using Toilet Humour to Facilitate Global Access to Toilets](#)

4. Building the Keppel Seghers Tuas WTE Plant to Support Sustainable Waste Management, Dec 2022 by **Prof. Shantanu Bhattacharya (Operational Management)**

Paper Link: [Building the Keppel Seghers Tuas WTE Plant to Support Sustainable Waste Management](#)

Sustainability Research Peak Seminar

Our latest Sustainability Research Peak Seminar was held in mid-April 2024 with two faculty presenters, Prof. Onur Boyabatli and Prof. Weikai Li. Prof. Michael Schaerer served as a moderator for this event. Both presenters presented their latest sustainability papers, with details of their papers mentioned on the second page.



Another co-organized seminar in April, with Strategy & Entrepreneurship area, is “Shared imaginaries of sustainable development: The SDGs, their interconnectedness, and materiality assessment” by Prof. Dorota Dobija from Kozminski University.

In March 2024, we also hosted the first practitioner-oriented talk. Bruno Roche, Founder of the Economics of Mutuality platform and former Chief Economist at Mars, Inc., presented his ideas around the “Economics of Mutuality”, discussing the question of what is the “true” profit of an organization. The talk was open to all SMU faculty, students, and external guests.

In late November 2023, we organized co-branding workshop with CCLA, ECGI and SGFC on “Corporate Purpose” topic, which brought together academic researchers from various organizations and disciplines, including business, law, and public affairs, to share their research, exchange insights, and build stronger connections within the sustainability-focused group. Our two presenters were Prof. Caroline Flammer from Columbia University and Prof. Dan W. Puchniak from CCLA and Prof. Liang Hao served as a moderator for this event. We deeply appreciated all the valuable contributions during all seminars.



In case that a specific publication was not included in our newsletter, or if any faculty members have upcoming work that wish to highlight in our next newsletter, please kindly contact our writer, Sompassorn Ruksomboonde at sompassornr.2022@pbs.smu.edu.sg