

Author: Tsun-Feng CHIANG

(Department of Applied Economics, National Chiayi University)

Title: Taiwan's Shark Trade: Exploring Market Integration Dynamics

Abstract: This study analyzes market integration of sharks using a unique dataset of wholesale prices from four seaports in Taiwan. The findings indicate that the Law of One Price does not hold in the short run for most seaport pairs, though it does hold in the long term. Moreover, prices at one seaport typically do not synchronize with those of another, indicating that shark markets operate independently. These findings suggest that price signals do not disseminate effectively in the short term. To address this, the study recommends developing a comprehensive price information system. Such a system could broadcast price data across seaports, helping to stabilize fishing efforts and mitigate the risks of overfishing driven by abrupt price fluctuations.

Author: Hsiu-Ling YANG and I-Sheng LIN

(Department of Applied Economics, National Chiayi University)

Title: The effects of child allowance, public education expenditure, and pension on fertility and economic growth

Abstract: Using a simple overlapping generations model of neoclassical growth, we analyze the effects of child allowances and the system of public education and old-age pensions on the fertility rate, saving rate, and per capita income. This paper demonstrates that developed countries with below-replacement fertility rates and income stagnation can simultaneously increase per capita income and fertility rates by increasing public education expenditures. Child allowances policies are detrimental to both per capita income and the rate of population growth. Although old-age pension policies can raise per capita income, they can also reduce the fertility rate.

Author: Chih-Min PAN

(Department of Applied Economics, National Chiayi University)

Title: A Note on Hospital Profitability in Taiwan

Abstract: This study uses Random Forest Regression to analyze key factors influencing hospital profitability under the National Health Insurance system. Using financial data from 2015 to 2022 (1,560 records), we identify the top five influential factors: Net Non-Operating Income, Medical Revenue, Medical Costs, Medical Operating Expenses, and Patient-to-Nurse Ratio. Among these, Net Non-Operating Income and Medical Revenue contribute the most to the model's predictive accuracy, together accounting for over 92% of the total feature importance. The

results further reveal that the relationships between these factors and hospital profitability are complex and nonlinear.

Author: Ingshane YUNG^a, Yufu KUO^b, Chi-Leung CHU^a

^a:(Department of Business Administration, National Chiayi University)

^b:(Makino Asia Pte Ltd)

Title: Developing a Dynamic Inter-Organizational Interaction Management Model in Taiwan's Machine Tool Industry: A Case Study of L.K. Machinery's Supply Chain

Abstract: Machine tools, known as the "mother of machinery," are essential for manufacturing various machines and processing equipment. While Taiwan's machine tool industry has a significant presence in the global market, but there is limited research on how to improve its competitive advantage from the perspective of inter-organizational governance or interactive management models. To fill this gap, this study aims to develop an inter-organizational interaction management model suitable for Taiwan's machine tool industry to achieve sustainable competitive advantage from the viewpoint of inter-organizational interaction management models (value creation or value appropriation) and product architecture (modular or integrated). Using a case-based qualitative research method, this study found that Taiwanese machine tool manufacturers at different product development stages and competition levels adopt different interactive management models, which affect their product architecture choices. This study also predicts that as the product cycle progresses to new product development, the relationship between inter-organizational interaction management models and product architecture will become a virtuous circle, termed the "dynamic inter-organizational interaction management model" in this study. This "inter-organizational dynamic interaction management model" is expected to advance the "inter-organizational relationship" and "product architecture" theories and may become a new paradigm for Taiwan's machine tool industry in the future.

Author: Chi-Feng TAI^a and Kai WANG^b

^a:(Department of Management Information Systems, National Chiayi University)

^b:(Department of Information Management, National University of Kaohsiung)

Title: Impact of Digital Platform Capabilities on Digital Services Innovation: Role of Digital Resource Orchestration

Abstract: This study is a work-in-progress that aims to investigate what capabilities user organizations need to develop to leverage digital

platforms for digital service innovation. Grounded in Service-Dominant Logic (SDL) and Resource Orchestration Theory (ROT), the research particularly seeks to understand how resource integration and orchestration activities within the innovation process influence the outcomes of digital service innovation. Based on the research objectives and theoretical foundations, this study proposes a research model comprising three theoretical constructs and three research hypotheses. A mixed-methods research design is planned, beginning with a quantitative survey to test the proposed hypotheses, followed by qualitative case studies focusing on manufacturing firms engaged in servitization and traditional service providers. Through this research approach, the study seeks to develop a more concrete and in-depth understanding of the interrelationships among digital platform capabilities, digital resource orchestration activities, and digital service innovation within organizations.

Author: Jia-Xin ZHANG and Tu-Liang LIN

(Department of Management Information Systems, National Chiayi University)

Title: Explainable Prediction of Early View Counts for Cosmetic-Related YouTube Videos Using XGBoost and SHAP

Abstract: Understanding what drives viewership on cosmetic-related YouTube content is essential for creators and marketers. This study proposes an interpretable machine learning framework to predict the early-stage view counts of cosmetic YouTube videos and analyze the influence of diverse video features. A dataset of 680 videos from 64 Taiwanese cosmetic-focused YouTube channels was collected via YouTube Data API and Google Cloud Vision API between October 2024 and April 2025. The study extracted over 50 features spanning video metadata, creator profiles, thumbnail composition (e.g., number of faces, facial emotions, dominant colors), title–thumbnail semantic similarity (via Sentence-BERT), and sentiment polarity in comments and subtitles (using CKIP Transformers with expert labeling).

Two XGBoost-based regression models were constructed. The first model utilized only pre-publication features and achieved $R^2 = 0.765$ for Day-1 view count prediction. SHAP analysis revealed that higher subscriber counts, moderate info-bar link usage, consistent title–thumbnail semantics, and optimal video length positively impacted views, whereas excessive thumbnail faces or links, and overly positive subtitle sentiment showed negative associations. The second model incorporated Day-1 engagement metrics (likes, comments), significantly boosting predictive performance for Days 2–7 ($R^2 > 0.90$), with early

audience interaction emerging as the most influential factor.

This research highlights the predictive value of both static and dynamic video features and demonstrates how interpretable machine learning can uncover nuanced patterns in viewership behavior. The proposed framework provides actionable insights for optimizing cosmetic video content and guiding marketing strategies in creator economies.

Author: Yen-Hsien LEE

(Department of Management Information Systems, National Chiayi University)

Title: A Deep-Learning Approach to Prediction on Potential Live Stream Subscribers

Abstract: A live-streaming platform enables creators to produce and disseminate streaming contents in real time, anywhere and anytime. Subscription fees, advertisements, and donations constitute main sources of revenue in the creator economy. Subscription fees represent a crucial source of revenue, accounting for more than 40% of the total revenues. A larger subscriber base will not only generate more regular revenue for the live-streaming platform and the live streamer, but also potentially bring the revenues of advertising or livestream shopping. As a result, converting viewers to paid service subscribers is critical to both live streaming platforms and content creators. However, the interaction between streamer and viewers is a one-to-many relationship, a streamer may have hard time in managing the streaming and real-time interactions with multiple viewers simultaneously. Conceivably, significant attention and effort are needed to keep track of viewers and interact with them, especially those like to subscribe the streaming services. In this study, we intend to develop an analytics method to construct the predictive model for live streamers to identify the potential subscribers from the viewers in their respective live-streaming channel. We conducted an empirical evaluation on the effectiveness of the proposed method in comparison with traditional moving-average-based methods. The experimental results show that our proposed method outperforms traditional ones and that user interaction has a positive influence on the detection of potential subscribers.

Author: Fang-Yueh CHEN

(Department of Economics, National Chung-Cheng University)

Title: Optimal Privatization Policy and Partial Vertical Ownership

Abstract: We build a model where the upstream market consists of a mixed duopoly, and the downstream market is a pure private monopoly. We demonstrate that the downstream firm's passive partial vertical

ownership (PVO) in the state-owned enterprise (SOE) increases the optimal level of privatization, depending on the extent of the SOE's inefficiency. We obtain an invariance result where the market equilibrium and social welfare are equal in both regimes with and without passive PVO. Finally, under an active PVO, where the downstream firm pursues its profit in the objective function of the SOE, we find that a privatization policy prompts the SOE to increase its output, and complete nationalization occurs as the optimal policy.

Author: Shinya HORIE^a and Jun IRITANI^b

^a:(Department of Economics, Management and Information Science, Onomichi City University)

^b:(Graduate School of Economics, Kobe University)

Title: Aggregation of a Two-Sector Economy with Heterogeneous Capitals

Abstract: This study presents the possibility theorem of aggregating an economy that has two production sectors producing two heterogeneous (or sector specific) goods with two heterogeneous (or sector specific) capitals to an economy that has one sector producing one good with one capital, which is so-called a macro economy. There are three mutually related problems. One is the aggregation of production functions. Another is to find the price of aggregated commodity. The other is the aggregative consistency between an original economy and an aggregated economy. In this paper, we present aggregation possibility theorems that solve all the three problems.

Author: Satoru KIRA

(Department of Economics, Management and Information Science, Onomichi City University)

Title: Russian Invasion of Ukraine and International Law: The Legal Basis for Reclaiming Crimea

Abstract: In 2022, Russia launched a military invasion of Ukraine. Ukraine exercised its right of self-defence in response to this armed attack. Amid ongoing hostilities, senior Ukrainian government officials expressed their intention to reclaim the Crimean Peninsula by force. Crimea had been unlawfully annexed by Russia in 2014, in clear violation of international law. By the time of the 2022 invasion, eight years had passed since this illegal annexation. Given the established international legal principle prohibiting the use of force, a crucial question arises. Can a state that has suffered an unlawful territorial seizure lawfully resort to force to reclaim its territory after a significant lapse of time? This presentation aims to examine the legality of Ukraine's potential recapture

of Crimea, with particular emphasis on the conditions for exercising the right of self-defence under international law.

Author: Che-Lin LIU and Fuminori KIMURA

(Department of Economics, Management and Information Science, Onomichi City University)

Title: Featurization for City Tourism Analysis utilizing Posted Photographs on SNS

Abstract: Due to the impact of the COVID-19 pandemic, the tourism industry worldwide has suffered a significant decline, increasing the need for new data-driven strategies. This study proposes a method to analyze the tourism characteristics of cities using photos posted on social networking services (SNS). We collected SNS images related to tourism for each city and categorized them into ten classes -- such as food, nature, architecture, and people -- using clustering techniques. The ratio of each category was treated as a feature representing the city's tourism characteristics. For clustering, we built a deep learning model trained on approximately 70,000 labeled images. By applying multidimensional scaling to the resulting feature data of each city, we visualized and compared the visual similarities and tourism trends across cities. This method aims to provide a valuable tool for local governments and tourism organizations in developing effective promotional strategies.

Author: Fumina HIDAKA and Fuminori KIMURA

(Department of Economics, Management and Information Science, Onomichi City University)

Title: A Proposal for Visualizing Open-Ended Responses in Course Evaluations

Abstract: There are generally two main types of course surveys: multiple-choice and open-ended questions. While the results of multiple-choice questions are often aggregated and analyzed, open-ended responses are frequently just listed without sufficient analysis. Therefore, this study proposes a method for analyzing and visualizing open-ended course survey responses that do not have predefined questions. The proposed method performs sentiment analysis on the free-text responses to extract emotional features. The sentiment analysis estimates both positive/negative polarity and the degree of eight specific emotions, such as "joy" and "sadness." Based on these results, clustering and multidimensional scaling are applied to visualize the open-ended survey responses.