International Conference on Mathematical Statistics and Economic Analysis (MSEA 2022)

Held Online

Advances in Computer Science Research Volume 101

Dalian, China and Online 27-29 May 2022

Volume 1 of 2

Editors:

Gaikar Vilas Bhau Hrushikesh Mallick **Yuriy Shvets**

ISBN: 978-1-7138-7059-3

Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Print copyright© (2022) by Atlantis Press (part of Springer Nature) All rights reserved.

Copyright for individual electronic papers remains with the authors.

For permission requests, please contact the publisher:

Atlantis Press Van Godewijckstraat 30 3311GX Dordrecht The Netherlands

contact@atlantis-press.com

Printed with permission by Curran Associates, Inc. (2024)

Additional copies of this publication are available from:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA Phone: 845-758-0400

Fax: 845-758-2633

Email: curran@proceedings.com Web: www.proceedings.com

TABLE OF CONTENTS

Study on the Influence of Emission on Enterprise's Carbon Emission Reduction Decisions Considering Public Participation	3
Jing Xue, Haixia Gui	
Research on the Construction of Agricultural Risk Compensation Fund in Dalian based on the Principle of Tax Benefit	9
Research on the Influence of High-tech Industry Technology Innovation Investment Ability on High-quality Development—Empirical Analysis Based on Provincial Panel Data	15
Empirical Research on the Impact of Corporate Income Tax Burden on Corporate Investment from the Perspective of Life Cycle—Multiple Linear Regression Analysis Based on Econometric Analysis Software STATA	23
Complete the Valuation Analysis with Discounted Cashflow Valuation and Multiple Valuations of Enterprise Value Mutiple, Price to Earning, and Pricing to Book Value Take the Woolworth Group under Epidemic as an Illustration	28
Equity Pledge and Total Factor Productivity under the Background of Digital Economy	34
The Impact of Digital Economy on the Upgrading of Industrial Structure in Resource-depleted Cities in China—Empirical Analysis Based on Data from 23 Provincial Panels in China	40
Game Theory Planning Model and Analysis of Corporate Pollution Behavior Governance	46
Research on the Social Media Marketing Activities Based on Linear Statistics	53
Research on Entrepreneurship and Regional Economic Growth on the New Over the Counter Market Based on a Fixed Effects Model	61
Research on the Impact of Digital Finance Development on Regional Innovation Level— Empirical Analysis based on Panel Data From 31 Provinces in China Junyan Zhang, Yuxi Liao, Yuanyuan Zhang	68
Analysis of the Influence of Exploratory Learning on Business Model Innovation of Internet Start- ups Based on SPSS Statistical Method—Digitalization Capabilities as Intermediary	74
Digital Transformation of Enterprises and Inventory Management	83
Global Economic Policy Uncertainty and Ethereum Price—A Time-Series Analysis from 2015 to 2022	90

Research on Tourism Image Perception of Xiangshan Park Based on Web Text Analysis	95
Research on Enterprise Green Innovation and Debt Financing Costs	101
Shadow Bank Scale and Financial Risk Prevention and Control Ability An Empirical Study Based on Principal Component Analysis	107
Evaluation Research on Digital Economy Development and Industrial Structure Upgrading Taking Five Northwest Provinces of China as Examples	115
Efficiency Evaluation and Influencing Factors Analysis of Industrial Green Transformation in Hubei Province	122
Self-organizing type, Innovation Path and Enterprise Performance: Mechanism and Empirical Analysis	131
Research on Digital Construction of Characteristic Towns in China under the Background of Digital Economy—Taking the Field Investigation in 6 Provinces and 6 Towns in China as an Example	139
Design and Development of Visual Analysis System for Enterprises Economic Operation Indicators in Big Data Era	151
The Impact of Standardization on Industrial Innovation Performance—Empirical Study based on Data from High Technology Industry	158
Research on the Influence of Sustainable Development Renovation of Abandoned Buildings on Residents' satisfaction under Nostalgia Based on Structural Equation Model — Taking the Eastern Suburbs Memory of Chengdu as an Example	164
Research on Human Resource Performance Evaluation of Furniture Enterprise Based on DEA Model	169
The Effect of Digitization on Enterprise Innovation	175
Can Digital Finance Promote Corporate Investment?	185
Community Identity: Value Construction, Design Expression and Statistical Analysis of Cultural and Creative Products in Universities	192

Fama-French Five-factor Model under Liquidity Adjustment—An Empirical Study Based on China's A-share Market	200
Methodology of the Underlying Model of Internet Digital Economic Growth: Traffic, Customer Unit Price, Conversion Rate and Repurchase Rate	206
Retailers' Optimal Advance Selling Pricing and Inventory Decision with Virtual Showrooms	212
Research on the Influence of Digital Economy Development on China's Inter-provincial Path Dependence Effect	217
Research on Intelligent Personnel Compensation and Performance Based on Database and KPI Index System Management Platform	226
PSO-FAHP Model-based Comprehensive Performance Evaluation of New Research and Development Institutions	234
The Impact of Producer Services Development on the Servitization of Manufacturing Industry	241
Demand Analysis of Science and Technology Talents Based on Time Series - BP Neural Network Model	248
Analysis of Industrial Characteristics of China's Transportation Industry Based on Input-output Model	255
Relationships between Intellectual Capital and Enterprise Performance: Evidence from the Manufacturing Industry	262
Analysis of Sany Heavy Industry Stock Value Based on FCFF and FCFE Model	270
Model Construction of Service Influencing Factors in Optometry Industry Based on Service Design Zhe Li, Jie Gao	277
Using SIRS Model to Study the Risk of Cross-Contagion in Financial Markets	286
Hedge Fund Strategy Performances during Corona Virus Disease2019	292
An Analysis of The Problem of Tourist Destination Selection about Vacation and Non Vacation Through Analytic Hierarchy Process	301
The Profitability and Effectiveness of Merger Arbitrage: Evidence from IBM & Red Hat	308

Application of Commercial Data Mining Model in Cloud Technology	314
Benefit Optimization of Small-scale Restaurants Using the Scheduling Optimization Algorithm	320
The Influence of US Tariff Increase on Guangdong Province Export Trade	327
Analysis of the Influence of "Exploding Fund" Marketing on Fund Trend	334
DREAM: Moving Average Crossover Strategy + Dynamic Programming Model = Wealth Dreams Come True	340
Research on the Impact of Brand Crisis on Enterprise Economy Based on SPSS Regression Analysis	349
Using AH Premium to Predict Related Stock Index with Support Vector Machine	355
Comprehensive Evaluation of Economic Development Level of Zhejiang Province Based on Multivariate Statistical Analysis	361
Research on the Impact of China's Artificial Intelligence on the Transformation and Upgrading of Industrial Structure Based on Dynamic Panel Data Model	366
Research on Economic Connection Degree and Development Path of Sports Tourism Demonstration Area in Hainan Province Chunyu Jiang, Jinku Huang, Ping Li	375
How Machine Learning Methods Unravel the Mystery of Bitcoin Price Predictions	381
Exploring the Price Influences of PFP Artworks in NFT Based on Regression Analysis	390
How do Investors Make Investment Decision by NPV Rule	397
Evaluation of Heavy Metal Pollution in Soil A Mathematical Method for Determining the Source of Pollution	406
A Study on the Impact of Tourism Activities on Gross Regional Product - Taking Hubei Province as an Example	413
Stock Price Factors Research and Classification	420
Research on the Applications of Duration and Immune Theory and Their Implications	426

Evaluating the Performance of One-minute and Thirty-minute Datums in the Stock Market	433
Analysis Of Change Trend Based On K-means And Characteristics Of China's Railway Operation	439
Research on the Influencing Factors of the Flow of Scientific and Technological Talents in Shaanxi — Based on Granger Causality Test and Gray Correlation Analysis	448
Advantages and Disadvantages of Dividend Discount Model and Better Alternatives	456
Impact of Social Media Sentiment on Consumer Purchasing Behavior through Online Review	462
The Performances of Different Strategies Based on Time Series Analysis for Chinese Markets	470
Analysis of the Impact of Economic Growth on Digital Inclusive Finance——Quantile Regression Based on Panel Data	477
An Epirical Analysis of the Unemployment Rate in the United States under the COVID-19 Pandemic	483
Research on Macaulay Duration's Role of Immunization to Interest Rate Risk	490
An Empirical Analysis of the Influence of RMB Exchange Rate on SSE Real Estate Index	498
An Impact Factors Model of Resident Income in Henan Province	507
Pair Trading Implemented in Three Asset Pairs in the Finance Market	515
The Performances of Different Strategies Based on Time Series Analysis for the U.S. Markets	521
Application of a Maverick Stock Capturing Strategy in the Chinese Stock Market	527
Research on the Influence of Property Tax Policy on Residents' Consumption Based on Difference-in-Differences Model	535
Government Subsidy, Research and Development Investment and Profitability Evidence from Pharmaceutical Manufacturing Enterprises	544
Auto Sales Forecasting Model Based on Target Customer Satisfaction Theory	551

Empirical Analysis of Value at Risk (VaR) of Stock Portfolio Based on Python	559
An Empirical Study on the Impact of Delayed Retirement on the Youth Unemployment in China	568
Study on Influencing Factors of Residents' Education Expenditure from the Perspective of Baumol's Disease	574
An Empirical Study of Factors Influencing Australia's GDP	581
Prediction and Analysis of Rental Price using Random Forest Machine Learning Technique Take Shanghai and Wuhan for Example	587
When Do Idiosyncratic Deals Promote Creativity?—Application of Data Processing in Enterprise Management	594
Research on the Influence of Conformity Effect Based on Structural Equation Model	602
The Application of Mathematical Model in Financial Field	607
The Impact of COVID-19 on Five Categories of Industries Based on CAPM Model	613
Research on the Efficiency of Beijing's Policy-oriented Agricultural Insurance	618
Water Allocation Plan Based on Linear Programming	625
Research on Consumer Choice Behavior by Reviews on Expedia	635
Research on the Measurement and Evaluation of High-quality Development in Guangdong Province based on the TOSIS Method of Entropy Weight and Coupled Coordination Model	641
The Performances of Different Strategies Based on Time Series Analysis	647
Exploring Event-driven Opportunities of the Beijing Winter Olympics based on Event Study	653
Study on the Impact of Aging Population on China's Manufacturing Export Structure	661
The Impact of City Commercial Banks' Green Credit on Operational Performance—Evidence from Commercial Banks in Guangxi	668

Approximate Analytical Method of Maximum Likelihood Estimation of Weibull Distribution	674
Research on the Admission of Graduate Students Based on Multiple Regression Model	681
An Empirical Study on the Efficiency of the Chinese Stock Market	690
The Analysis of the Relationship Between ESG and Profitability of Stocks by Linear Regression	699
Prediction and Influencing Factors of Residents' Ideal Childbirth: Feature Selection Based on Random Forest	704
Research on Project Investment: Methods of NPV, IRR and MIRR	710
Investment Value Analysis of Immersive Entertainment Industry—Take Mango Supermedia Co., Ltd. As an Example	716
The Impact of Female Empowerment on Income Inequality—Evidence from 96 Countries	726
Research on Multiple Paths Among Influencing Factors of Country Tourism Economic Development	733
Research on Influencing Factors of Land Rental Prices for Alfalfa Planting in Minnesota	741
Empirical Analysis of the Nexus between Interest Rate Marketization, Interbank Business and Bank Liquidity Risk: a Mediating Model	747
A Study on The Measurement and Regional Differences of The Fundamental Public Service Level in The Two-City Economic Circle in Chengyu Region	754
Research on the Risk Premium and Growth Opportunities of the Chinese Green Energy Industry— Based on CAPM and Mean-variance Analysis	763
Prediction of Wine Quality Using Ensemble Learning Approach of Machine Learning	770
Research on Comprehensive Zoning of Qinghai Province in the New Era—Based on the Perspective of Differential Economic Development of Counties	775
Research on the Application of EAA and EAC	787
Tourism Data Modeling and Mining based on Computer Information Technology	794

Threshold Effect of Digital Inclusive Finance on Carbon Emissions in The Yangtze Delta Region	800
Business Performance Evaluation of Listed Feed Companies under Epidemic Impact- Based on the DEA-Tobit Model	808
Chanyuan Zhu, Zhankui Chen, Jing Peng, Qingquan Jiang	
Research on User Satisfaction of Shared Motorcycle APP Based on Kano Model	815
Changes in Marketing Strategy Based on Big Data and Smartphones	822
Along the "Belt and Road" based on Copula function Research on the Interdependence of Regional Financial Risks	828
The Performances of Different Trading Strategy for Hegde Funds Based on Data Analysis	835
Development and Application of Accounting and Accounting Bank Reconciliation System	843
Empirical Research on How Product Features of Blind Box Affect Consumers' Purchase Intention—Based on Structural Equation Modeling	849
Research on the Evolution Mechanism of the Integration System of Culture and Tourism Industry based on Self-organization Theory	857
Digital Economy and Unified Market Construction Under the Advanced Computer Information Technology	868
Analysis of the Impact and Factors of Dividend Policy on the Achievement of Sustainable Growth of Companies in Different Industries	880
Big Data-based Visualization Analysis of the Travelogues of the Ancient towns - Take Huangyao Ancient Town and Xingping Ancient Town as Examples	885
Technological Innovation Effect on Employment of Tertiary Sector in China: an ARDL Bounds Testing Approach	892
The Determination of Optimal Machine Life:Fixed Assets Management and Enterprise Value Creation	899
Using Stata Software to Study the Impact of Technological Innovation on Economic Growth	907
Labor Costs Rising and the Behavior of Enterprises: Transfer or Innovate?	914

Optimization of New Energy Consumption Strategy for Electric Vehicles Based on Vehicle Networking	921
Mengjiao Zou, Yue Shen, Aifeng Zhang, Jun Li, Dunnan Liu, Xin Du, Mingguang Liu	921
Analysis and Countermeasures of Rural Financial Development under the Background of Rural Revitalization	927
Macro Analysis of Benchmarking in Electric Power Enterprises Based on Variance	932
Research on the Coordinated Development of China's Internet and Commercial Circulation Industry Based on Coupling Coordination Model	937
Cost-Benefit Analysis in the Assessment of LNG Ship Bunkering Station on Inland Waterway Port JiaRong Jiang	943
Factors Influencing Green Food Purchasing Behavior of Consumers in Harbin City, China	950
Are Green Technology Enterprises More Attractive to Venture Capital? Based on the Empirical Study of Listed Companies on GEM in China	959
Co-integration Relationship between Electric Power Development of Ningxia and Social Economy Lei Yu, Chao Yue, Zhao Ma, Xin Tian, Kun Zhang, Ye Lu, Xiaoqing Wang, Yuan Lv	966
Research on the Impact of Digital Financial Inclusion Development on Green Total Factor Productivity	971
Stock Price Forecast Based On EMD-PCA-GRU Neural Network Model	976
Analysis of Financial Management Mode under the Strategy of Rural Revitalization—Based on the Data Analysis of Township Financial Management Business	982
Application Research on PPP Mode of Charging Infrastructure	988
Evaluation of China's Renewable Energy Development Level under the Concept of Green Development Based on Coordination Degree Model	995
Application of Data Mining in Business Analysis	1003
The Influence of the Party Committee's Participation in Governance on the High-quality Development of State-owned Enterprises—Intermediary Effect based on Investment Efficiency Xinyu Cheng, Yunchen Wang	1011
A Study on the Adverse Selection in the Securitization of Bank Credit Assets in China Using System GMM	1017

Inter-organizational Relations in the Capitalist Economy under the Application of Digital Technology: a "Center-periphery" Organizational System based on Dynamic Imperfect Competition on the Internet Platform	1025
Analysis of the Impact of the Opening of Wuhan-Guangzhou High-speed Rail on the Innovation Ability of Cities Along the Line based on Empirical Test	1032
Study on the Spatial Agglomeration of China's Agricultural Product Processing Industry: Measurement and Regression Analysis	1038
Study on the Economic Impact of the Opening of High-speed Rail on First-Tier Cities Based on Fixed Effect Model and Stata15.0 Model Processing Software	1045
Research on Digital Marketing Strategy of Cross-border Retail Platform Based on STV Model: Taking Amazon as an Example	1051
Tax Incentives and Corporate Innovation Efficiency: A Moderated Mediating Effect Model	1057
Simulation of French CAC40 Index for the First 20 Years in the 21st Century with Random Walk Model	1064
Board Capital and Strategic Change: The Moderating Effects of Board Independence under a Random Effects Model	1069
Market Makes Investment An Empirical Study on the Effect of Socioeconomic Pressure on Foreign Direct Investment Jinqi Song	1080
An Empirical Test of Target Knowledge Base on the Market Competitiveness of Technology Merger and Acquisition Based on the Mediated Moderation Model Mingming Meng, Hongyang Li, Xu Yang	1089
Study on the Impact of Female Labor Force Participation on Carbon Emissions based on the Fixed Effect Model and FGLS Estimation	1097
The Impact of Intellectual Capital on Corporate Value of General Aviation Listed Companies Based on VAIC Model	1103
Research on the Relationship Between Stock Price Volatility and Bank Credit —Based on Constructive Model and Granger Causality Test	1109
Research on Relationship of British Pound Exchange Rate and the COVID-19 Pandemic Situation Based on Correlation Analysis by Excel	1114

Research on Credit Risk Assessment of Commercial Banks Based on Machine Learning	1119
China Earthquake Disaster Loss Investigation and Evaluation: Design and Development of Online Examination Application	1125
The Impacts of Urban Functional Division on Economic Growth from the Perspective of the Spatial Agglomeration Theory—The Empirical Analysis Based on Panel Data Model	1136
Does the Rural Labor Transfer Employment Promote the Sustainable Growth of Household Tourism Consumption in the Context of Internet?—A Data Analysis Using Econometric Way on Instrumental Variable	1143
Analysis and Research on the Synergism Between Financial Risks and Digital Finance—A Case Study of Wuhan Jiahua Tian, Jing Xu, Zhitao Zhang	1149
Research on the Impact of Carbon Price on Power Cable Price	1157
Enterprise User Credit Evaluation Model Based on Hierarchical Analysis Method	1164
Research on the Impact of the Tax Cuts and Fee Reductions on Local Public Finance under the COVID-19 Epidemic	1170
Impact of High-speed Railways on Regional Economic Development: Based on Double Difference Model and Least Squares Linear Regression Model Xiaoyun Xu, Xingyu Liu, Wei Zhang	1176
Prediction of Epidemic Disease Model and Analysis of Prevention and Control Countermeasures of COVID-19	1184
Research on Purchasing Behavior of Understory Edible Mushroom Based on SOR Model	1197
Survey and Statistical Analysis on the Present Situation of Science Illustration Teaching in Junior Middle School	1203
Big Data Analysis Based on the Risk of Consumption Rebate Network Pyramid Selling	1210
Research on Early Warning of Network Public Opinion Based on Bibliometrics	1216
Rural E-commerce Income Distribution Model Based on Big Data Analysis	1221
Combining Micro Data to Study the Impact of Financing System on Compulsory Education Quality	1227

Research on the Guiding Strategy of Network Public Opinion on Sudden Natural Disaster Events on Weibo Platform	1233
Yan Li, Jingfeng Wang	
Elderly-oriented Environment Construction Strategy Based on Survey and Hierarchical Analysis of Elderly Activity Participation in Community	1239
Factor Models for High-Dimensional Time Series Forecasting: An Application to Revenue Management	1247
Ruixue Li, Chaofeng Yuan, Nan Wang	
Study on the Statistical Characteristics of Location Factors Questions in the National Unified Entrance Examination for Colleges and Universities of China during 2011-2021	1252
Wei Yan, Qi Yang, Minghua Liu, Yaogeng Tan, Jia Ning, Jiawen Wang, Yifan Wang	
Financial Pressure, Efficiency of Tax Collection and Administration and Regional Heterogeneity: A Case Study of Central China	1260
Empirical Research on the Formation Mechanism of User Stickiness based on Professionalism of Broadcasters on Live Video Streaming Platforms	1267
Research on the Difference of Perception Image of Tourists of Tongjing Hot Spring—Comparative Analysis based on Big Data of Texts from three Network Platforms	1272
Multi-model based Attention Mechanism for Stock Movement Prediction	1278
Models for Higher Education System Evaluation	1283
Xinyan Huang, Boyu Xie, Weihong Zhang	
Recommendation for Decision Support on Cloud Data Center based on Operation and Maintenance Knowledge Graph	1289
Hongbo Lu, Yiyou Yuan, Dequan Gao, Ziyan Zhao, Fenggang Lai, Chao Ma, Hao Xu, Yin Liu	
Analyses of Factors Affecting Deaths Associated with COVID-19 in Ontario	1294
Evolutionary Game between Local Government and Enterprises under Penalty Mechanism of Carbon Emission Reduction	1301
Knowledge Graph of Emotional Stress Research in the Era of Big Data under the Epidemic - Visual Analysis Based on CiteSpaceV	1307
Research on The Influence of Personalized Recommendation on Consumers' Purchasing Decision: The Mediating Role of Consumers' Privacy Concern	1311
Regression Analysis of the Job Burnout of Street-Level Bureaucracy under the Background of Applied Statistics	1316

Research on the Impact of Digital Technology Development on the Efficiency of Chinese Market Transactions	1221
Yiwei Wang, Zipeng Yu	1321
Research on the Impact of Compatible Innovation on the High-quality Development of Time-honored Enterprises	1326
Xuemei Yuan, Lili Zhang	
Research on the Overhaul Capital Allocation Model Based on the Scale and State Properties of the Old Assets	1332
Yingjin Ye, Shiyuan Lin, Jiawei Lin, Yafang Zhu, Yaru Han	
Analyze the Impact of Operation Mechanism on the Economic Development of the Development Zone Based on Data Mining Methods	1337
Research on Financing Efficiency of Photovoltaic Industry Based on Three-stage DEA Model	1342
Study on the Influence of Family Factors on the Number of Household E-bikes	1350
Analysis on the Growth Factors of Agricultural Products Trade between China and RCEP	1357
The Opening of High-speed Rail and Enterprise Innovation—Research based on Multi-period DID Peiyang Li	1363
Simulation of Canadian S&P/TSX Composite Index for the First 20 Years in the 21st Century with Random Walk Model	1369
Digital Innovation and Business Models Empirical Research Based on Text Mining of Annual Reports of 280 Listed Companies	1375
Does Luxury Brand Work with Live Commerce? Based on Live-streaming Platforms	1381
Deep Learning Ethereum Token Price Prediction on Dynamic Network and Time Series Analysis	1390
Based on the Entropy Topsis Model in Urban and Rural Endowment Service Supply Level Evaluation Method Innovation Research In Field Data in Henan, Jiangxi and Ningxia as an Example	1399
Research on Cost Approach for Real Estate Appraisal of Apartment Based on GIS	1406
Analysis of Online Reviews of Tourists in 5A Scenic Spots Located in Sichuan Province based on Text Mining	1412
Qinglin Luo, Sheng Zhong, Zhaocai Li	
Linear Regression Model is Used to Analyze Regional Development Differences and Influencing Factors in China's Insurance Market	1417
-	

Block Chain Technology, Credit Rationing and SME Financing: Theoretical Basis and Application	
Scenario	424
Yudan Zhao, Haifeng Li	
A Study on the Application of VR Technology in Personnel Quality Assessment	.432
A Difference-in-Difference Study Evaluating the Effect of High-speed Rail Opening on Financing Constraints of Enterprises' Construction Projects	.438
Research on the Development of Pearl River Delta Urban Agglomeration Based on Big Data Technology	.444
A Look Into the Association Between the Asian Financial Crisis and the Per Capita GDP Growth	
Slowdown in Thailand	.452
Review of Asset Pricing Theory and Empirical Research Results	459
Research on Evaluation of Bidding Effect of Hydropower Participating in Power Spot Market	467
Development Path Design of Multi-subject Participation in Electricity Market Based on Value Analysis	480
Hui Song, Sijie Liu, Qiuna Cai, Yue Zhao, Haixiang Gao, Pengcheng Zha, Xinyu Meng	
Carbon Dioxide Geological Utilization and Storage: A Bibliometric and Patent Analysis	.487

Author Index