



THE ATHENS INSTITUTE FOR EDUCATION AND RESEARCH

Abstract Book

13th Annual International Symposium on
Economic Theory, Policy & Applications
2-5 July 2018, Athens, Greece

Edited by
Gregory T. Papanikos

2018

Abstracts
13th Annual International
Symposium on
Economic Theory, Policy &
Applications
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Preface

This book includes the abstracts of all the papers presented at the 13th *Annual International Symposium on Economic Theory, Policy & Applications* (2-5 July 2018), organized by the Athens Institute for Education and Research (ATINER).

In total 83 papers were submitted by 92 presenters, coming from 33 different countries (Australia, Austria, Botswana, Brazil, Canada, China, Colombia, Ethiopia, FYROM, Germany, Ghana, Greece, India, Ireland, Italy, Japan, Kuwait, Lebanon, Mexico, Peru, Portugal, Romania, Serbia, South Africa, South Korea, Spain, Switzerland, Thailand, Turkey, UAE, UK, Uruguay and USA). The conference was organized into 21 sessions that included a variety of topic areas such as Mathematical and Quantitative Applications, Industry Studies, Biostatistics, Investment, Trade and Development, Public and Monetary Economics, and more. A full conference program can be found before the relevant abstracts. In accordance with ATINER's Publication Policy, the papers presented during this conference will be considered for inclusion in one of ATINER's many publications.

The purpose of this abstract book is to provide members of ATINER and other academics around the world with a resource through which to discover colleagues and additional research relevant to their own work. This purpose is in congruence with the overall mission of the association. ATINER was established in 1995 as an independent academic organization with the mission to become a forum where academics and researchers from all over the world could meet to exchange ideas on their research and consider the future developments of their fields of study.

It is our hope that through ATINER's conferences and publications, Athens will become a place where academics and researchers from all over the world regularly meet to discuss the developments of their discipline and present their work. Since 1995, ATINER has organized more than 400 international conferences and has published nearly 200 books. Academically, the institute is organized into seven research divisions and 37 research units. Each research unit organizes at least one annual conference and undertakes various small and large research projects.

For each of these events, the involvement of multiple parties is crucial. I would like to thank all the participants, the members of the organizing and academic committees, and most importantly the administration staff of ATINER for putting this conference and its subsequent publications together. Specific individuals are listed on the following page.

Gregory T. Papanikos
President

**13th Annual International Symposium on Economic Theory,
Policy & Applications,
2-5 July 2018, Athens, Greece
Organizing and Academic Committee**

ATINER's conferences are small events which serve the mission of the association under the guidance of its Academic Committee which sets the policies. In addition, each conference has its own academic committee. Members of the committee include all those who have evaluated the abstract-paper submissions and have chaired the sessions of the conference. The members of the **academic committee** were the following:

1. Gregory T. Papanikos, President, ATINER.
2. Nicholas Pappas, Vice President of Academic Membership, ATINER & Professor of History, Sam Houston University, USA.
3. Chris Sakellariou, Head, Economics Unit, ATINER & Associate Professor of Economics, Nanyang Technological University, Singapore.
4. Sharon Claire Bolton, Head, Management Unit, ATINER & Dean, The Management School, University of Stirling, Scotland.
5. Peter Koveos, Head, Accounting and Finance Unit, ATINER & Professor of Finance, Syracuse University, USA.
6. Timothy M. Young, Director, Center for Business & Manufacturing Excellence (CBME) & Professor and Graduate Director, Center for Renewable Carbon, The University of Tennessee, USA.
7. Cleopatra Veloutsou, Head, Marketing Unit, ATINER & Professor of Brand Management, University of Glasgow, UK.
8. Paul Contoyannis, Head, Health Economics & Management Unit, ATINER & Associate Professor & Director of Graduate Studies, McMaster University, Canada.
9. Theodore Trafalis, Director, Engineering & Architecture Division, ATINER, Professor of Industrial & Systems Engineering and Director, Optimization & Intelligent Systems Laboratory, The University of Oklahoma, USA.
10. Codruta Simona Stoica, Head, Mathematics & Statistics Unit & Professor and Vice-Rector, Aurel Vlaicu University of Arad, Romania.
11. Saeed Zolfaghari, Professor, Ryerson University, Canada.
12. Gerhard Speckbacher, Professor, WU Vienna University of Economics and Business, Austria.
13. Rainer Przywara, President, Cooperative University Baden-Württemberg Heidenheim, Germany.
14. Yijiang Wang, Professor of Economics and Human Resource Management, Cheung Kong Graduate School of Business Beijing, China.
15. Henry Thompson, Emeritus Professor, Auburn University, USA.
16. Michael Gendron, Professor, Department Chair, Management Information Systems, Central Connecticut State University, USA.

17. Ampalavanar Nanthakumar, Academic Member, ATINER & Professor, State University of New York at Oswego, USA.
18. Diarmuid O'Driscoll, Head of Department of Mathematics, Mary Immaculate College, Ireland.
19. Radmila Janicic, Professor, University of Belgrade, Serbia.
20. Chang Yu, Associate Professor, Department of Biostatistics, Vanderbilt University School of Medicine, Vanderbilt University, USA.
21. Juan Barrios, Associate Professor, Universidad ORT Uruguay, Uruguay.
22. Khaled Aboulnasr, Associate Professor, Florida Gulf Coast University, USA.
23. Armine Shahoyan, Business Department Chair, University of Holy Cross and Professor, Tulane University, USA.
24. Sujay Datta, Associate Professor, University of Akron, USA.
25. Samer Elhajjar, Assistant Professor, University of Balamand, Lebanon.
26. Rahul Nath, Stipendiary Lecturer in Economics, Exeter College, University of Oxford, UK.
27. Athanasios Mihalakas, Academic Member, ATINER & Assistant Professor, The State University of New York, at Brockport, USA.
28. Tim Lueger, Research Assistant, Darmstadt University of Technology, Germany.

The Organizing Committee of the conference was:

1. Zoe Charalampous, Researcher, ATINER.
2. Olga Gkounta, Researcher, ATINER.
3. Despina Katzoli, Researcher, ATINER.
4. Eirini Lentzou, Administrative Assistant, ATINER.
5. Konstantinos Manolidis, Administrator, ATINER.
6. Kostas Spyropoulos, Administrator, ATINER.

FINAL CONFERENCE PROGRAM
13th Annual International Symposium on Economic Theory, Policy & Applications, 2-5 July 2018, Athens, Greece
PROGRAM

Conference Venue: Titania Hotel, 52 Panepistimiou Street, 10678 Athens, Greece

Monday 2 July 2018		
08:00-08:45 Registration and Refreshments		
08:45-09:30 (Room C-10 th Floor) Welcome and Opening Address		
Gregory T. Papanikos, President, ATINER. Nicholas Pappas, Vice President of Academic Membership, ATINER & Professor of History, Sam Houston University, USA.		
Monday 09:30-11:30		
Session I (Room A-10 th Floor): Human Resources	Session II (Room B-10 th Floor): Consumer and Marketing Analysis I	Session III (Room C-10 th Floor): Mathematical and Quantitative Applications I
Chair: Gregory T. Papanikos, President, ATINER.	Chair: Cleopatra Veloutsou, Head, Marketing Unit, ATINER & Professor, University of Glasgow, UK.	Chair: Codruta Simona Stoica, Head, Mathematics & Statistics Unit, ATINER & Professor and Vice-Rector, Aurel Vlaicu University of Arad, Romania.
<ol style="list-style-type: none"> Victor Haines, Professor, University of Montreal, Canada. The Challenge of Matching Resources to Demands for Employee Well-Being: The Case of Nonstandard Work Schedules. Xinxin Ma, Associate Professor, Hitotsubashi University, Japan. Impact of Public Pension on Labor Supply of Intra-Household Prime-Age Adults: Evidence from Rural China. Javier Martinez, Faculty Director, Universidad Autónoma de Chihuahua, Mexico, Ivan Ibarra, Chair, Universidad Autónoma de Chihuahua, Mexico & Miguel Angel Vicens, Associate Dean, Western New Mexico University, USA. Analysis of Income Inequality in the Mexican Labor Market. Deger Eryar, Assistant Professor, Izmir University of Economics, Turkey. Socio-economic Determinants of NEET in Turkey: The Impact of Parental Education and 	<ol style="list-style-type: none"> Robert Peterson, Professor, The University of Texas at Austin, USA, Linda Golden, Professor, The University of Texas at Austin, USA & Kacy Kim, Assistant Professor, Elon University, USA. Black and Hispanic Entrepreneurship: Customer Orientation and Perceived Business Performance. Saeed Zolfaghari, Professor, Ryerson University, Canada, Amirhossein Bazargan, PhD Candidate, Ryerson University, Canada & Salma Karray, Associate Professor, University of Ontario Institute of Technology, Canada. "Buy <i>n</i> Times, get one Free" Loyalty Programs: An Analytical Investigation of their Profitability. Evangelos Xevelonakis, Professor, HWZ University of Applied Sciences in Business Administration Zurich, Switzerland. Dynamic, Individualised Pricing and Customer Loyalty in the Swiss Retail Market: Chances and Risks. 	<ol style="list-style-type: none"> GiSeung Kim, Professor, Pusan National University, South Korea & Hongye Sun, Pusan National University, South Korea. Unobserved Heterogeneous Bias and Wage Effects of Educational Mismatches across 20 OECD Countries. Manoranjan Pal, Professor, Indian Statistical Institute, India, C. S. Biswas, Indian Statistical Institute, India, S. Bannerjee, Indian Statistical Institute, India, A. Ghosh, Indian Statistical Institute, India, S. Chakraborti, Indian Statistical Institute, India, S. Guha, Indian Statistical Institute, India & P. Bharati, Indian Statistical Institute, India. Style of Question Matters: An Experiment with Questions on "Family Related" and "Social" Views on Gender Violence. Juan Barrios, Associate Professor, Universidad ORT Uruguay, Uruguay & Santiago Acerenza, Universidad ORT Uruguay, Uruguay. Feelings about Competition and Self-reported Trust: Evidence

Employment.	<p>4. Radmila Janicic, Professor, University of Belgrade, Serbia. Holistic Marketing Strategies in Art's Projects.</p> <p>5. <u>Khaled Aboulnasr</u>, Associate Professor, Florida Gulf Coast University, USA & Gina Tran, Assistant Professor, Florida Gulf Coast University, USA. The Role of Brand Relationship Norms in Consumers' Response to Brand Transgressions.</p> <p>6. <u>Juan Carlos Chica Mesa</u>, Associate Professor, Universidad Nacional de Colombia, Colombia, <u>Carlos Osorio</u>, Senior Lecturer, Universidad de Manizales, Colombia & Jose Luis Giraldo Florez, MBA Student, Universidad Nacional de Colombia, Colombia. Decision Making in the Millennials Mobile Commerce Supported in Neuromarketing.</p>	<p>from the World Value Surveys.</p> <p>4. <u>Nizar Zaarour</u>, Assistant Teaching Professor, Northeastern University, USA & <u>Emanuel Melachrinoudis</u>, Professor, Northeastern University, USA. The "Not so Simple" Interpretation of R^2, for Relatively Small Sample Sizes.</p>
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Monday 11:30-13:00

Session IV (Room A-10th Floor): The Chinese Economy	Session V (Room B-10th Floor): Innovation, Information, and Technology I	Session VI (Room C-10th Floor): Teaching-Learning-Education I
Chair: Yijiang Wang, Professor of Economics and Human Resource Management, Cheung Kong Graduate School of Business Beijing, China.	Chair: Saeed Zolfaghari, Professor, Ryerson University, Canada.	Chair: Juan Barrios, Associate Professor, Universidad ORT Uruguay, Uruguay.
<p>1. <u>Ke Shen</u>, Graduate Student, Shanghai International Studies University, China, Zheng Fan, Dean of School of Business and Management, Shanghai International Studies University, China & Peihua Fan, Professor, Shanghai International Studies University, China. Competence-Willingness Model and Inheritance Strategy of Chinese Family Business.</p>	<p>1. Gerhard Speckbacher, Professor, WU Vienna University of Economics and Business, Austria. Using Commercial Success for Evaluating Creative Teams: The Importance of Leadership.</p> <p>2. <u>Marco Bravo</u>, Executive Director, The University of Texas at Austin, USA, Linda Golden, Professor, The University of Texas at Austin, USA, <u>Patrick Brockett</u>, Professor, The University of Texas at Austin, USA & Robert Peterson, Professor, The University of Texas at</p>	<p>1. Diarmuid O'Driscoll, Head of Department of Mathematics, Mary Immaculate College, Ireland. Teaching Ridge Regression in Polynomial Data Fitting.</p> <p>2. Armine Shahoyan, Business Department Chair, University of Holy Cross and Professor, Tulane University, USA. Teaching Principles of Economics On-Line: Structured Course vs. Self-Paced Mode. An Empirical Study.</p> <p>3. Michael Aristidou, Associate Professor, American University of</p>

	<p>Austin, USA. Engineering Design, Design Thinking, and Marketing: An Integrated Approach to Product Innovation.</p> <p>3. <u>Claudia Mattar</u>, Assistant Professor, University of Balamand, Lebanon & Anthony Azar, PhD Student, Polytechnic University of Bucharest, Romania. Information Technology Efficiency in Quality Management Improvement and Its Impact on Organizational Performance: An Analysis of Lebanese Organizations.</p>	<p>Kuwait, Kuwait. Is Mathematical Logic Really Necessary in Teaching Mathematical Proofs?</p> <p>4. Lukanda Kalobo, Lecturer, Central University of Technology Free State, South Africa. The Use of Principles of Learning Statistics to Promote the Teaching and Learning of Statistics at High School in South Africa.</p>
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Monday 13:00-14:30

Session VII (Room A-10th Floor): Industry Studies I	Session VIII (Room B-10th Floor): The Marketing and Management in Art and Culture and Other Essays	Session IX (Room C-10th Floor): Biostatistics
Chair: Timothy M. Young, Director, Center for Business & Manufacturing Excellence (CBME) & Professor and Graduate Director, Center for Renewable Carbon, The University of Tennessee, USA.	Chair: Khaled Aboulnasr, Associate Professor, Florida Gulf Coast University, USA.	Chair: *Ampalavanar Nanthakumar, Professor, State University of New York at Oswego, USA.
<p>1. Can Liu, Professor, China National Forestry Economics and Development Research Center, China, Hao Liu, Assistant Professor, China National Forestry Economics and Development Research Center, China & Sen Wang, China National Forestry Economics and Development Research Center, China. Has China's New Round of Collective Forest Reforms Caused an Increase in the Use of Productive Forest Inputs?</p> <p>2. Rainer Przywara, President, Cooperative University Baden-Württemberg Heidenheim, Germany. The Interrelation of Maximum Employment and Sectoral Productivity in</p>	<p>1. Susan Rozensher, Professor, Iona College, USA. Evaluating the Performance of Marketing Student Interns: Quantitative and Qualitative Measurement Issues. (<i>Monday, afternoon session</i>)</p> <p>2. <u>Paula Rodrigues</u>, Professor, Universidade Lusíada, Portugal & Paula Costa, PhD Student, Universidade Lusíada, Portugal. Factors to Purchase Luxury Brands: Chanel Brand Case.</p> <p>3. Ezeni Brzovska, Assistant Professor, Ss. Cyril and Methodius University in Skopje, FYROM. Evaluating the Importance and Performance of Different Dimensions in the Experiential Based Model for Cultural Institutions.</p> <p>4. <u>Bhola Nath Ghosh</u>,</p>	<p>1. Valeria Sambucini, Professor, Sapienza - University of Rome, Italy. A Predictive Approach for Monitoring Multiple Outcomes in Phase II Clinical Trials. (STABIO)</p> <p>2. *Sujay Datta, Associate Professor, University of Akron, USA. Bayesian Network Structure Learning with Resampling-Based Confidence: Application to Genomics.</p> <p>3. *Chang Yu, Associate Professor, Vanderbilt University Medical Center, USA. Estimating the Proportion from the Null using a Distribution for p-Values in Massive Testing. (STAMED)</p>

<p>Manufacturing.</p> <p>3. <u>Sami El Naddaf</u>, Academic Advisor and Quality Assurance Officer, Antonine University, Lebanon & Aline Al Am, Assistant Professor, Lebanese University, Lebanon. The Role of Technology in Sustainable Food Industry: The Case of Lebanon.</p> <p>4. <u>Justin Arnold</u>, Graduate Student, University of Holy Cross, USA & Armine Shahoyan, Business Department Chair, University of Holy Cross and Professor, Tulane University, USA. A Study on Housing Market Trends in the Major Urban Areas of the United States.</p> <p>5. Alexis Duenas, Associate Professor, National University Federico Villarreal, Peru. Sustainability of the National Agro-Industry by Terms of Natural Resources and Contaminants Residues.</p>	<p>Associate Professor, Indian Statistical Institute, India & Dibyajyoti Ghosh, Himalayan Junior Project Fellow, Zoological Survey of India, India. Concept and Role of Values in the Society: With Special Reference to India.</p> <p>5. Aleksandra Maric, Lecturer, Accademia del Lusso, Italy. Marketing and Communication in the Creative Industries Today: How are Creative Companies Managing the Challenges of Addressing New Consumer Segments and the "Generation Z"?</p>	
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14:30-15:30 Lunch

Monday 15:30-17:30

Session X (Room A-10th Floor): Investment	Session XI (Room B-10th Floor): Industry Studies II	Session XII (Room C-10th Floor): Time Series Studies
Chair: Henry Thompson, Emeritus Professor, Auburn University, USA.	Chair: Gerhard Speckbacher, Professor, WU Vienna University of Economics and Business, Austria.	Chair: Sujay Datta, Associate Professor, University of Akron, USA.
<p>1. Fabian Baier, Chair for Macroeconomic Theory and Politics, University of Wuppertal, Germany & Paul JJ Welfens, Head of Chair for Macroeconomics and Economic Policy, University of Wuppertal, Germany. Leaving the Eurozone: Gravity FDI Modelling Including Capital Stock, Tax and Exchange Rates.</p> <p>2. Jean Roy, Professor, HEC-Montreal, Canada. Optimal Pricing of Deposit Insurance: Aiming at</p>	<p>1. Joao Rebelo, Professor, UTAD - Universidade de Trás-os-Montes e Alto Douro, Portugal, Lina Lourenco-Gomes, Assistant Professor, UTAD - Universidade de Trás-os-Montes e Alto Douro, Portugal, Tânia Goncalves, PhD Student, UTAD - Universidade de Trás-os-Montes e Alto Douro, Portugal & Jose Vaz Caldas, Assistant Professor, UTAD - Universidade de Trás-os-Montes e Alto Douro, Portugal. A Hedonic Price</p>	<p>1. Ampalavanar Nanthakumar, Professor, State University of New York at Oswego, USA. A Comparison of Gaussian and Skew-Gaussian Copula.</p> <p>2. Helena Viljoen, Senior Lecturer, Stellenbosch University, South Africa. Forecasting Time Series using Stepwise Common Singular Spectrum Analysis or Horizontal Multi-channel Singular Spectrum Analysis?</p> <p>3. Tim Lueger, Research Assistant, Darmstadt University of Technology,</p>

<p>Fairness and Stability.</p> <p>3. Constantin Colonescu, Associate Professor, MacEwan University, Canada. The Effects of Donald Trump's Tweets on the Economy.</p> <p>4. Dale Nam, Associate Professor, Korea University Business School, South Korea. Influence of Time to IPO in Maximizing Foreign IPO Value: Moderating Role of Home Business System and Host Venture Capitals.</p> <p>5. *Rahul Nath, Stipendiary Lecturer in Economics, Exeter College, University of Oxford, UK. Pricing Equity in New Keynesian Models.</p> <p>6. Arthur Korus, Research Assistant, University of Wuppertal, Germany. Spillover Effects from the ECB's Unconventional Monetary Policies: The Case of Denmark, Norway and Sweden.</p>	<p>Analysis for the Portuguese Wine Market: Does the Distribution Channel Matters?</p> <p>2. <u>Lina Lourenco-Gomes</u>, Assistant Professor, UTAD - Universidade de Trás-os-Montes e Alto Douro, Portugal, Carla Ferreira, PhD Student, UTAD - Universidade de Trás-os-Montes e Alto Douro, Portugal & Ana Patricia Silva, Invited Researcher, UTAD - Universidade de Trás-os-Montes e Alto Douro, Portugal. Cheers with Port Wine by Young Consumers - Exploring Perceptions and Attitudes.</p> <p>3. Nazli Karamollaoglu, Assistant Professor, MEF University, Turkey. An Analysis of Export Volumes to Exchange Rate Movements Using Firm-Level Data.</p> <p>4. Martie Mearns, Senior Research Associate, University of Johannesburg, South Africa. Streamlining Management Information Systems Processes towards Improving Sustainability Reporting for a Tourism Company.</p> <p>5. Kedwadee Sombultawee, Lecturer, Silpakorn University, Thailand. Antecedents and Consequences of E-Commerce Adoption for SMEs.</p>	<p>Germany. A VAR Evaluation of Classical Growth Theory.</p> <p>4. Symeon Koumoutsaris, VP, Model Development, Guy Carpenter, UK. A Catastrophe Model for Insurance Losses due to Burst Pipes Resulting from Subfreezing Temperatures using Vine Copulas.</p>
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17:30-19:30 Roundtable Discussion

Session XIII (Room C-10th Floor): ATINER's 2018 Series of Academic Dialogues: A Symposium Discussion on Publishing and Researching for Professional Academic Development

Chairs: Gregory T. Papanikos, President, ATINER and Nicholas Pappas, Vice President of Academic Membership, ATINER & Professor of History, Sam Houston University, USA.

1. Cleopatra Veloutsou, Head, Marketing Unit, ATINER, Editor, Journal of Product & Brand Management and Professor of Brand Management, University of Glasgow, UK. Main Trends in Publishing in Top Management Journals.
2. Codruta Simona Stoica, Head, Mathematics & Statistics Unit, ATINER & Professor and Vice-Rector, Aurel Vlaicu University of Arad, Romania. Implementing the Research Strategy within "Aurel Vlaicu" University of Arad in order to Enhance its International Prestige and Visibility.

3. Ampalavanar Nanthakumar, Academic Member, ATINER & Professor, State University of New York at Oswego, USA. Why Did I Engage Myself in Research?
4. Manoranjan Pal, Professor, Indian Statistical Institute, India. Publishing and Researching for Professional Academic Development: The Indian Experiences.
5. Can Liu, Professor, China National Forestry Economics and Development Research Center, China. How to Train Young Scientists for Researching of Forest Economics and Policy in China.
6. Rainer Przywara, President, Cooperative University Baden-Württemberg Heidenheim, Germany. Towards a Research Strategy for the Baden-Württemberg Cooperative State University (DHBW).

21:00-23:00 Greek Night and Dinner

Tuesday 3 July 2018

Tuesday 07:45-10:45

Session XIV: An Educational Urban Walk in Modern and Ancient Athens

Chair: Gregory A. Katsas, Vice President of Academic Affairs, ATINER & Associate Professor, The American College of Greece-Deree College, Greece.

Group Discussion on Ancient and Modern Athens.

Visit to the Most Important Historical and Cultural Monuments of the City (be prepared to walk and talk as in the ancient peripatetic school of Aristotle)

Tuesday 11:00-12:30

Session XV (Room A-10th Floor): Trade and Development

Chair: Rainer Przywara, President, Cooperative University Baden-Württemberg Heidenheim, Germany.

1. Marianne Matthee, Professor, North-West University, South Africa & JC Cloete, North-West University, South Africa. Identifying Firm-Level Export Barriers in African Fragile and Conflict-Affected Countries Constraining their Export Propensity and - Intensity.
2. Obonye Galebotswe, Senior Lecturer, University of Botswana, Botswana & Masego Rethabile Maika, Economist, Botswana. The Saving-Investment Nexus: Evidence from Botswana.
3. Joseph Mensah Onumah, Senior Lecturer, University of Ghana, Ghana & King Carl Tornam Duho, Research Assistant, University of Ghana, Ghana. Intellectual Capital: Its Impact on Stability and Performance of Ghanaian Banks.

Session XVI (Room C-10th Floor): Mathematical and Quantitative Applications II

Chair: Diarmuid O'Driscoll, Head of Department of Mathematics, Mary Immaculate College, Ireland.

1. Stelios Georgiou, Senior Lecturer, RMIT University, Australia. A Step by Step Methodology for Designing Experiments.
2. Felicitas Nowak-Lehmann, Senior Researcher, University of Goettingen, Germany. Foreign Aid and its Impact on Investment in Developing Countries: Empirical Evidence.
3. Stella Stylianou, Senior lecturer, RMIT University, Australia. New 3-Level Designs for Full Second Order Models.
4. Paul Mpuga, Economic Affairs Officer, UNECA, Ethiopia. Do Business-Friendly Regulations Promote Entrepreneurship Growth? Analysis using African Data.
5. Luciana Bastos, Professor, University of the State of Paraná, Brazil, Janete Leige Lopes, Professor, University of the State of Paraná, Brazil, Jesus Crepaldi, Professor, University of the State of Paraná, Brazil & Badar Alam Iqbal, Professor, Aligarh Muslim University, India. Analysis of Statistics of Violence by Homicide in the Members Countries of Mercosur, during the Period Extending from 2000-2012.

Tuesday 12:30-14:00

Session XVII (Room A-10th Floor): Public and Monetary Economics	Session XVIII (Room B-10th Floor): Consumer and Marketing Analysis II	Session XIX (Room C-10th Floor): Teaching-Learning-Education II
<p>Chair: Rahul Nath, Stipendiary Lecturer in Economics, Exeter College, University of Oxford, UK.</p>	<p>Chair: Radmila Janicic, Professor, University of Belgrade, Serbia.</p>	<p>Chairs: Armine Shahoyan, Business Department Chair, University of Holy Cross and Professor, Tulane University, USA and Tim Lueger, Research Assistant, Darmstadt University of Technology, Germany.</p>
<ol style="list-style-type: none"> 1. Yi Jiang Wang, Professor, Cheung Kong Graduate School of Business, China. The Economic Origins of Force, Power and the State: A Theory of Social Order. 2. Oguz Esen, Professor, İzmir University of Economics, Turkey. From Fiscal Crisis to Fiscal Sustainability: İzmir Metropolitan Municipality. 3. <u>Ayla Ogus Binatli</u>, Professor, Izmir University of Economics, Turkey & Niloufer Sohrabji, Professor, Simmons College, USA. Monetary Policy Transmission in the Euro Zone. 4. Stephan Unger, Assistant Professor, Saint Anselm College, USA. The Effect of Allocative Efficiency of Free Markets on Entropy and its Implications on Taxes. 	<ol style="list-style-type: none"> 1. <u>Dilek Uz</u>, Assistant Professor, University of Nevada, Reno, USA & Mark Pingle, Professor, University of Nevada, Reno, USA. A Ratio-Difference Theory of Choice and Decision. 2. *Samer Elhajjar, Assistant Professor, University of Balamand, Lebanon. Drivers of Resistance to Political Marketing Campaigns: An Exploratory Analysis. 3. Debbie Human-Van Eck, Lecturer, Stellenbosch University, South Africa. Cause-Related Marketing: The Influence of the Donation Recipient in Campaign Success. 4. <u>Alessandro Feri</u>, PhD Student, Edinburgh Napier University, UK, Nathalia Tjandra, Lecturer, Edinburgh Napier University, UK, Collins Osei, Lecturer, Edinburgh Napier University, UK & Maktoba Omar Saad, Principal Lecturer, Coventry University, UK. The Causal Effect of Hedonic Brand Cues on Consumers' Decision-Making Impulsivity. 	<ol style="list-style-type: none"> 1. <u>Michael Gendron</u>, Professor, Department Chair, Management Information Systems, Central Connecticut State University, USA, <u>Jeffrey Peck</u>, Adjunct Professor, Central Connecticut State University, USA & <u>Tera Black</u>, Professor, Central Connecticut State University, USA. Best Practices for Logistics Analytics. 2. <u>Henry Morelli</u>, Associate Professor, Central Connecticut State University, USA & Michael Gendron, Professor, Department Chair, Management Information Systems, Central Connecticut State University, USA. Transforming Industry Professionals into Effective Defined Term and Adjunct Faculty. 3. Gheorghita Faitar, Assistant Professor, D'Youville College, USA. Grit and Mathematics. 4. Matina Rassias, Senior Teaching Fellow, University College London, UK. Teaching Specialist versus non-Specialist Students in Statistics.

14:00-15:00 Lunch

Tuesday 15:00-16:30

Session XX (Room A-10th Floor): Innovation, Information, and Technology II	Session XXI (Room C-10th Floor): Mathematics
Chair: Michael Gendron, Professor, Department Chair, Management Information Systems, Central Connecticut State University, USA.	Chair: Chang Yu, Associate Professor, Vanderbilt University Medical Center, USA.
<ol style="list-style-type: none"> 1. <u>Nikitas Nikitakos</u>, Professor, University of the Aegean, Greece, Ayse Kucuk Yilmaz, Associate Professor, Anadolu University, Turkey, Ebru Yazgan, Lecturer, Anadolu University, Turkey & Konstantinos N. Malagas, Postdoctoral Researcher, University of the Aegean, Greece. Risk Matrix of Human Error Factors for Managing Situational Awareness in Aircraft Maintenance Technician. 2. <u>Remziye Gulem Atabay</u>, Professor, Izmir University of Economics, Turkey & Ela Burcu Ucel, Lecturer, Izmir University of Economics, Turkey. An Exploratory Study about Interpersonal Relationships and Organizational Climate. 3. <u>Jesus Sanchez-Araque</u>, Professor, Universidad de Castilla-La Mancha, Spain, Elena Merino Madrid, Professor, Universidad de Castilla-La Mancha, Spain & Montserrat Manzaneque Lizano, Professor, Universidad de Castilla-La Mancha, Spain. Survival of Failed SMEs and Out-of-Court vs in-Court Reorganization: Explanatory Internal Factors. 4. Debdatta Saha, Assistant Professor, South Asian University, New Delhi, India. Identity and Perception of Risk for Entrepreneurs: Lessons from an Industrially Less Developed State in India. 5. Maddalena Agnoli, Ph.D. Student, Cerna - MINES ParisTech, France. Firms' Participation in the Standard Setting Process. 6. <u>Leandro Silva</u>, MSc Student, FUMEC University, Brazil, Jefferson LaFalce, Teacher, FUMEC University, Brazil & Luiz Antonio Teixeira, Teacher, FUMEC University, Brazil. Open User Innovation and Systemic Marketing Approach: Convergence Points. 	<ol style="list-style-type: none"> 1. Codruta Simona Stoica, Professor, Aurel Vlaicu University of Arad, Romania. On Stochastic Splitting Issues for Evolution Equations. 2. Adama Diene, Associate Professor, United Arab Emirates University, UAE. Evaluation of Certain Sums of Polynomials Using the Arithmetic Divisor Functions.

Tuesday 16:30-18:30

Session XXII (Room C-10th Floor): Special Topics

Chair: Samer Elhajjar, Assistant Professor, University of Balamand, Lebanon.

1. Timothy Young, Professor, The University of Tennessee, USA, Nana Tian, Forest Economist, Texas Forest Service, USA & Yongke Sun, Southwest Forestry University, China. Improved Predictive Modeling of Wood Composite Products using Bayesian Additive Regression Trees (BART).
2. Jan-Erik Lane, Professor, Public Policy Institute, Serbia. Socio-Economic Determinism and Climate Change.
3. Enrique Vasquez, Professor / Visiting Research Fellow, Universidad del Pacífico / IBEL, Universitat Pompeu Fabra, Peru / Spain. Understanding the Business-Government Relationship in Chile under an Economic Booming and Social Unrest Scenario: 2000-2015.
4. Jose Paulo Oliveira, Professor, Universidade Lusófona de Humanidades e Tecnologias, Portugal. Macroeconomic Impacts of Universal Basic Income Guarantee.
5. Abdulla Awadh, Officer, Ministry of Interior – Sharjah Police, UAE & Hassan Saleh Al-Dhaafri, Assistant Professor, University of Dubai, UAE. The Effect of it Management and Strategy Management on Organizational Performance of Sharjah Police.

20:00- 21:30 Dinner

Wednesday 4 July 2018
Mycenae and Island of Poros Visit
Educational Island Tour

Thursday 5 July 2018
Delphi Visit

Friday 6 July 2018
Ancient Corinth and Cape Sounion

Khaled Aboulnasr

Associate Professor, Florida Gulf Coast University, USA

&

Gina Tran

Assistant Professor, Florida Gulf Coast University, USA

The Role of Brand Relationship Norms in Consumers' Response to Brand Transgressions

A growing body of branding and consumer behavior literature has attempted to study the nature and outcomes of consumer-brand relationships. This is not surprising given that fostering strong relationships with consumers is a key contributor to brand value and brand equity (Ahluwalia et al., 2000). Despite the importance of building and maintaining such relationships, brands may sometimes have to deal with conflict that results from a brand transgression. The manner in which consumers respond to such transgressions may prove detrimental to the relationship. Using a social relationship framework, the purpose of the present research is to investigate the effect of consumer-brand relationship norms (communal vs. exchange) in shaping consumers' response (betrayal perceptions, forgiveness, avoidance and retaliation) following a brand transgression (performance related vs. value related). Results of a preliminary investigation provide support to the premise that relationship norms and type of transgression play an important role in how consumers respond to brand transgressions.

Maddalena Agnoli
Cerna - MINES ParisTech, France

Firms' Participation in the Standard Setting Process

The development of technology standards represents an interesting interplay between different actors of society. The objective of the benevolent social planner to find an equilibrium between interoperability and market competition meets the strategic, benefit maximizing behavior of participants in the standard setting process. Formalized technology standards are developed by standard setting organizations (SSOs) through collaboration of their members which might include private firms, government agents, as well as consumer associations. There is competition within the organizations between their members who pursue their private objectives. For firms, the participation in the standard setting process goes along with certain costs which have to be weighed against the expected benefits. Since costs often have to be born *ex ante*, benefits are uncertain and can arise with a time delay. Yet, benefits can be considerable and persist over time for certain technology standards.

A rational firm maximizes its expected revenues which can be affected by SSO participation in several ways. Lerner and Tirole [2006] modeled this decision assuming that technology owners use the signal of SSO "certification" of their technology in order to attract potential buyers. They choose their SSO strategically in order to maximize the positive signal from SSO certification, given the *ex-ante* likelihood of certification. Firms can also extract revenues from technology ownership. The inclusion of a firm's IPR in a technology standard can guarantee a steady future flow of royalties to the firm. Firms compete for having their IPR included in the standards in order to ensure future licensing revenues. Therefore, many firms devote a lot of effort to the standardization process (Chiao et al. [2007]). A part from membership fees, the participation in the standard setting process can demand important investments in R&D during the development stage of a standard. Chiao et al. [2007] describe standard development as a process which often takes place at an early stage of the technology development. IPR accumulation efforts can also occur in the lead time to SSO entry with the objective to gain negotiation power in the standard setting process and to include their technologies in the standards. Firms often propose competing solutions to a standardization problem due to their divergent technological core competencies. Therefore, firms which lack the necessary capabilities must make investments in order to develop relevant competencies (Kang and Motohashi 2012). Bekkers et al. (2011) analyze the firms' strategic behavior on patent inclusion in the standards, however, they note that their paper does not take into account strategic behavior such as the creation of patent portfolios, cross-licensing, licensing of patent bundles, agreements on future

patents, etc. Yet, patent portfolios can serve as a negotiation tool in cross-licensing agreements and presumably as a motivation for the formation of alliances in the standard voting process.

In this paper, I develop a structural model describing the firms' decision whether or not to become a SSO member. I assume rational, profit maximizing firms that take this decision based on ex ante expectations about benefits from SSO membership. These depend, on the one hand, on the importance of a SSO's standards and, on the other hand, on the firm's influence on the standard setting process. The maximization of expected profits leads to the simple decision rule that firms participate in the standard setting process if their expected additional profit is positive. The expected profit contains two elements: the expected profits from standards built on the firm's technology and the firm's expected influence on the standard setting process. I extend the maximization problem of SSOs in Lerner and Tirole [2006] by introducing an influence parameter for firms that varies with respect to their R&D efforts and patent portfolios. Thereby, firms enter the SSO's utility function with different weights. Firms can behave strategically by making upfront investments in R&D and by extending their patent portfolio in order to strengthen their influence and manipulate the standard setting process in their own favor.

I derive reduced form equations from the theoretical model for three decision variables: SSO membership, R&D investment and patent acquisitions. I test the hypothesis derived from the theory that firms make upfront R&D investments and patent acquisitions before entering the standard setting process in order to strengthen their position in the standard setting process. Therefore, I retrieve data on SSO membership from the Searle Center Database on Technology Standards and Standard Setting Organizations (see Baron and Spulber [2015]), firm level information on patent applications and acquisitions from PATSTAT, and data on firm revenues, R&D expenditures and other control variables from Orbis.

This paper contributes to the literature by disclosing the strategic behavior of firms in the development of technology standards. It illustrates that standardization can trigger an up-front R&D or IPR accumulation race between firms. To my knowledge, this is the first paper that analyzes ex ante patent acquisitions of SSO members empirically.

Michael Aristidou

Associate Professor, American University of Kuwait, Kuwait

Is Mathematical Logic Really Necessary in Teaching Mathematical Proofs?

As it is already observed by mathematicians and educators, there is a discrepancy between the formal techniques of mathematical logic and the informal techniques of mathematics in regards to proof. We examine some of the reasons behind this discrepancy and to what degree it affects doing, teaching and learning mathematics in college. We also present some college students' opinions about proofs, and we briefly observe the situation in Greek and Greek-Cypriot high schools in which mathematical logic is part of the curriculum. Finally, we argue that even though mathematical logic is central in mathematics, its formal methods are not really necessary in doing and teaching mathematical proofs and the role of those formalities has been, in general, overestimated by some educators.

Justin Arnold

Graduate Student, University of Holy Cross, USA

&

Armine Shahoyan

Business Department Chair, University of Holy Cross and Professor,
Tulane University, USA

A Study on Housing Market Trends in the Major Urban Areas of the United States

This study involves discovering how the changing demographics and lifestyle of the growing U.S. population will affect the housing market in the upcoming decades. The goal is to show that demand for rental property will tend to dramatically increase while supply lags behind. Research has been done by examining the major factors in the U.S. housing market, including the cost of new homes, existing homes, and apartment rent. As these continue to surge, individuals are spending an ever-increasing percentage of their income for housing. The two largest population groups in the U.S. are the Millennials and Baby Boomers. As the Millennials enter the real estate market for the first time, Baby Boomers seek to reduce expenses as they enter their retirement years. This is creating further demand on affordable options. As this occurs, there has been an increase in commuting time and working from home. Data from primary and secondary data has been collected and used for qualitative and quantitative analysis.

Remziye Gulem Atabay

Professor, Izmir University of Economics, Turkey

&

Ela Burcu Ucel

Lecturer, Izmir University of Economics, Turkey

An Exploratory Study about Interpersonal Relationships and Organizational Climate

Organizational climate is a phenomenon which needs careful attention in organizations due to its relationships with a number of concepts like organizational culture, organizational commitment, employee creativity, job satisfaction and intention to leave (Pritchard and Karasic, 1973; Jones and James, 1974 and 1979; Schneider and Snyder, 1975; Witt, 1989; Çekmecelioğlu, 2005; Schneider, B., González-Romá, V., Ostroff, C., and West, M. A. 2017). It was Lewin and colleagues that first mentioned about the concept, climate, in their 1939 study (Lewin et. al, 1939). Lewin (1951) argued that climate is a factor which influences motivation, behavior and attitude. In the other early studies about the concept, it was defined as the long-term organizational characteristics as perceived by the organizational members (Forehead and Gilmer, 1964; Schneider and Bartlett, 1968). Ertekin (1978) on the other hand, described organizational climate as the set of characteristics perceived by organizational members which influences their behavior and provides an identity to the organization.

Organizational climate needs managerial attention due to its multiple influence on organizational behavior of the employees. Thus, how to shape it, how to align it with organizational goals and strategies are among the questions that managers try to answer. Local insights about the concept would have important managerial implications. With this motivation, the current study aimed to understand the role managers played in shaping the organizational climate in a local setting, İzmir, Turkey. As the aim was to obtain a richer understanding about how managers -if they do- influence the climate in an organization, a qualitative study would best serve the research purposes. In selecting the sample, schools seemed to be proper research settings, as teachers' individual performances are influential in changing peoples' (students') lives and the future of the country. With its important output (the human capital), the school setting was an appealing context to get into and learn more about the organizational climate, the influence managers (schools principals) may have on it and teachers' perceptions about it. During the field study, researchers conducted 17 in-depth interviews with teachers and they made 80 hours of observation in public primary schools.

Findings showed that principal's leadership style was quite influential in shaping organizational climate and interpersonal relationships among teachers. For instance, a number of teachers reflected that, if the school

principal was supportive, warm and friendly, the organizational climate was also supportive and teachers were warmer to each other. But in other cases, like in case of the change of the principal, depending on the personality and leadership style of the new comer, the climate would become competitive and even hostile. The principal seemed to be a role model who guided teachers' behaviors towards each other and his/her leadership style influenced the general school climate which in turn influenced organizational behavior of the teachers.

Findings contribute to leadership and management studies as they outlined how leadership behaviors of principals are influential in shaping organizational climate, in turn affecting job satisfaction, organizational commitment and intention to leave of employees, in this case, teachers. Moreover, findings provide useful clues for managers and human resources practitioners in terms of identifying more appropriate leadership behaviors to create positive organizational climate. Although, the focus of this study was limited with the schools, findings can be extended to similar settings, such as organizations operating in other service industries e.g. healthcare.

Abdulla Awadh

Officer, Ministry of Interior – Sharjah Police, UAE

&

Hassan Saleh Al-Dhaafri

Assistant Professor, University of Dubai, UAE

The Effect of IT Management and Strategy Management on Organizational Performance of Sharjah Police

The main purpose of this study is to investigate the effects of IT Management and Strategy Management on Organizational Performance. Based on a theoretical foundation and a wide review of the literature, the model of the research was proposed. To achieve the research purpose, this study has integrated different theories such as Resource Based View of the Firm (RBV), Knowledge Based View (KBV), and Innovation theories in order to analyze the effect of IT Management and Strategy Management on Organizational Performance. 341 Questionnaires were distributed among random selected sample of Sharjah Police departments in Sharjah city in Emirates. 245 questionnaires were returned and used in the analysis using the SPSS system. The results of this study demonstrate that including IT Management and Strategy Management have positive and significant effect on Organizational Performance in Sharjah Police. This study reflects the importance of the right implementation to the IT Management and Strategy Management to have successful performance. This study also supported the premises of the resource-based view theory by reaffirming the importance of the including Strategy Management and IT Management to enhance organizational performance.

Fabian Baier

Chair for Macroeconomic Theory and Politics, University of Wuppertal,
Germany

&

Paul JJ Welfens

Head of Chair for Macroeconomics and Economic Policy, University of
Wuppertal, Germany

Leaving the Eurozone: Gravity FDI Modeling Including Capital Stock, Tax and Exchange Rates

Membership of currency and policy unions and the effects of such membership on trade and FDI attractiveness historically find broad interest amongst researchers and policymakers. While the analysis of trade relationships rests on a solid foundation in the literature and is well established within gravity modeling, FDI gravity models still face several problems.

The forthcoming Brexit as well as the anti-European sentiments which could be witnessed in 2016/17 motivates us to take on a new approach in the field of FDI gravity modeling to predict the gains and losses associated with membership of the European Union. OECD FDI flow data are used as they are assessed to be most reliable. We utilize a dyadic fixed effect Poisson pseudo maximum likelihood model (DFE PPML) to test the effect of origin and target country EU-membership on respective FDI inflows (robustness-checks with OLS; and UNCTAD-data). Alternatively, EU membership is proxied by access to the EU Single Market, starting from 1993, which allows us to observe entry-effects more precisely, as relatively few FDI flows occurred in the 1970s and 1980s. We control for the size of the relative foreign capital stock within the target country, the corporate tax rate of the target country as well as real effective exchange rates between partners. We find a significant EU membership and Single Market effect, which is in line with previous studies. In addition, we find that the size of the existing FDI stock in a country generates an overproportionate increase in flows. The corporate tax rate is also found highly relevant and significant (a one percentage point decrease of the tax rate leads to three percent more FDI inflow), even when controlling for tax havens via dummy variables. As regards exchange rate linkages to FDI flows, no significant impact is found.

Juan Barrios

Associate Professor, Universidad ORT Uruguay, Uruguay

&

Santiago Acerenza

Universidad ORT Uruguay, Uruguay

Feelings about Competition and Self-reported Trust: Evidence from the World Value Surveys

Drawing on individual data from the World Values Surveys, this paper estimates the relation between individual feelings about competition and self-reported horizontal trust. On average, Individuals who increasingly dislike competition report lower levels of trust towards others. But the association is not linear. This finding is different than and complements previous research which shows a positive or negative relation. The paper improves over previous research in that it approximates competitive environment by using individual-level measures while at the same time considering objectives measures of competition. We extend the analysis to other measures of trust. We conjecture about the potential negative effects on Trust and Social Capital of the declining appreciation of the benefits of competition.

Luciana Bastos

Professor, University of the State of Paraná, Brazil

Janete Leige Lopes

Professor, University of the State of Paraná, Brazil

Jesus Crepaldi

Professor, University of the State of Paraná, Brazil

&

Badar Alam Iqbal

Professor, Aligarh Muslim University, India

Analysis of Statistics of Violence by Homicide in the Members Countries of Mercosur, during the Period Extending from 2000-2012

The objective of this study is to perform an analysis of the statistics of violence by homicide in the member countries of Mercosur, between 1994 and 2015.

The work methodologies used will be: a bibliographical review to cover the theoretical basis of the work and descriptive statistics, used to collect, tabulate and analyze the homicide statistics in Mercosur member countries in this period. Results shows that there will be a similar pattern in absolute and relative terms for the growth of homicide rates in Mercosur members and that the growth of such rates is independent of the types of regimes of government to which each of these countries is subject.

Marco Bravo

Executive Director, The University of Texas at Austin, USA

Linda Golden

Professor, The University of Texas at Austin, USA

Patrick Brockett

Professor, The University of Texas at Austin, USA

&

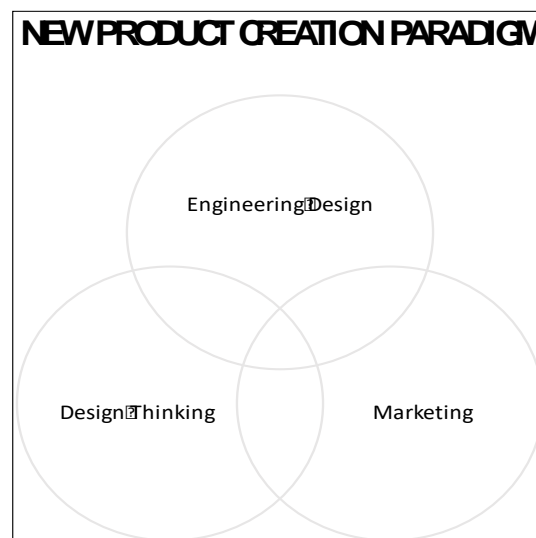
Robert Peterson

Professor, The University of Texas at Austin, USA

Engineering Design, Design Thinking, and Marketing: An Integrated Approach to Product Innovation

New products are unquestionably the life blood of companies, and approaches to product innovation must be dynamic and evolve over time, adapting to current environments. Without a steady stream of new products, a company will ultimately wither and perish. Consequently, companies have adopted a variety of procedures and processes to facilitate product innovation.

Three distinct approaches that focus on product innovation respectively reside in engineering design, design thinking, and marketing. Greatly oversimplifying and for pedagogical emphasis, engineering design focuses on the (physical) functions that a new product will perform, design thinking focuses on the affective aspects of a new product, and marketing focuses on the customer benefits of a new product (i.e., facilitating market exchanges). To illustrate, Dell Technologies is known for taking a functional approach (usually when product definition is relatively identified), Apple for a design thinking approach (when product characteristics are fuzzy), and Procter & Gamble for a marketing approach to new product creation (more traditional products).



These three approaches are displayed visually in the Venn diagram above. This diagram illustrates the possible relationship(s) and interactions of the three approaches—there is no overlap (e.g., marketing in its sole functions), two-way overlap (e.g., marketing with engineering design), and three-way overlap (i.e., marketing with engineering design and design thinking). The present paper offers a transdisciplinary, integrated, conceptual model for product innovation that systematically examines and incorporates the contributions of each approach in the context of maximizing product innovation effectiveness and efficiency. The paper culminates in a series of practical guidelines for minimizing new product failures and maximizing corporate profits and a proposed research framework for empirically investigating the proposed model.

Ezeni Brzovska

Assistant Professor, Ss. Cyril and Methodius University in Skopje, FYROM

Evaluating the Importance and Performance of Different Dimensions in the Experiential Based Model for Cultural Institutions

Research interest for culture marketing has been increased significantly in recent years, due to numerous changes in the environment. The goal of this paper is to evaluate the importance and performance of the four realms of the experience economy in creating and delivering visitor's experience in cultural institutions. The paper analyze whether the pertinent attributes of the experience economy model are of equal importance for different audiences. The Kruskal – Wallis test was employed to reveal the statistically significant differences on certain dimensions of experience based model regarding gender, age and education of the respondents.

An exploratory research was conducted among visitors who were recently immersed in the experience and performance in the most renowned and recently renovated cultural institution in FYROM.

Research results will provide interesting and important insights for increasing the understanding among arts managers and marketers for employing the experience economy and increase customer value in order to improve the effectiveness and efficiency in developing and retaining audiences.

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&

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Decision Making in Millennials' Mobile Commerce Supported in Neuromarketing

Decision-making is a process by which the human being makes a rational choice between two or more alternatives (Stanton, Sinnott-Armstrong, & Huettel, 2016). Studies on decision making are of interest in the discipline of neuromarketing, allowing to identify the behavior and patterns of the consumers involved in the purchase process (Lima Cruz, Fleith De Medeiros, Rodrigues Hermes, Marcon, & Marcon, 2016). According Tung, Jai & Burns (2014), Maity & Dass (2014) y Shi & Ghedira (2016), few empirical studies on the instant decision making within the mobile commerce, are a limitation for the development and implementation of new techniques in the field of neuromarketing. The purpose of this article is to describe a methodology that allows us to analyze in real time the decision making made by millennials of the city of Manizales within the mobile commerce, using neuroscience tools such as Biofeedback.

Constantin Colonescu

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The Effects of Donald Trump's Tweets on the Economy

Twitter is the U.S. President Donald Trump's preferred media for communicating his thoughts to his followers. This project looks at the effect of the daily flow of tweets from Donald Trump on the U.S. financial markets, represented by the Dow Jones Industrial Average (DJI) index, over the period of Donald Trump's ongoing presidency. Using text mining techniques, some correlation is found between the 15 day moving averages of tweet content and the DJI index.

Sujay Datta

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Bayesian Network Structure Learning with Resampling-Based Confidence: Application to Genomics

In recent years, graphical and network models have become increasingly useful in certain areas of the bio-medical sciences including genomics, proteomics, genetic epidemiology and systems biology. This has been facilitated by a number of new developments in structure learning algorithms and their evolution from constraint-based to score-based and hybrid algorithms. Examples include Gaussian graphical models, multivariate Bernoulli graphical models, hypergraph models, Bayesian networks and dynamic Bayesian networks. However, until recently, not much had been done in terms of developing a 'confidence measure' for the 'point estimates' of networks provided by those algorithms. Here we introduce recently developed methods for parametric and bootstrap-based assessment of variability in the learned network structures, introducing the notion of 'confidence' to structure learning. We do it in the context of applying Bayesian networks to learn functional relationships among genes associated with differentiation potential of progenitor cells that generate muscle tissue, in order to assess the effect of aging on the heterogeneity in possible co-expression of differentiation pathways.

Adama Diene

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Evaluation of Certain Sums of Polynomials Using the Arithmetic Divisor Functions

We prove the polynomial analogue of some Liouville identities involving the arithmetic divisor functions from elementary number theory, and combine the results with known identities in the ring of polynomials over Finite Fields to evaluate several new sums of polynomials.

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Sustainability of the National Agro-Industry by Terms of Natural Resources and Contaminants Residues

The problem of the contribution of the natural capital in the growth of the regional agro-industry, is now a consequence of the stagnation of the national economy due to the extractive activities. Let's mention all the agro exports and in particular the agro industry, which would play an important role in the revival of the economic growth of the country.

By the way, the principal objective of this research is to "Determinate and establish the influence of the natural capital in the ways of growth of the agroindustry production, considering production terms in Peru.

The results, in terms of growth rates, indicate that for the agroindustry of type C3 (full industrial cluster of transformation) has mixed patterns, similar to the case of C2 (half industrial cluster of transformation) and C1 (low industrial cluster of transformation) chains type. As to pressures and environmental loads found a pressure of 15 to 25% for ground, 25% and 40% for water, with a solid residue produce (45 to 60%) for chains of type C1. It was determined that between 25 and 35% are pressures on ground, and 40 to 45% are demands for water. On the other hand, 28% to 35% of the produced volumes are going into the residue for C2, trend that is extensible to the C3 chains. Finally is estimated that the National agro industry (agrobusiness) follows an expansive model, it means: more increase, more consumption of natural capital (natural resources) and more contaminants production.

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&

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The Role of Technology in Sustainable Food Industry: The Case of Lebanon

Sustainable development is the greatest challenge of our time. It brings together a number of global problems—pollution and intoxication of the space in which we live; poverty and starvation; climate change; depletion of mineral and organic resources; ecological devastation, and global inequity. Technologies have played an important role in creating the problems that we face, but will also play an important role in solving them. The reason is not that sustainable development is a technological mission. Rather, sustainable development is the mission for the whole of society. However, technology is deeply entrenched in our society; without it, society would immediately collapse. Moreover, technological changes can be perceived as easier to accomplish than lifestyle changes that might be required to solve the problems that we face. Nowadays, the food system faces big challenges when people and companies shift to more sustainable ways of living. Many questions can be asked in this matter; for example, how can mobile phones and social media help connect people more closely with the food that they buy? How do we measure the environmental or social impacts of food production? How can farmers use technology to minimize the use of fertilizers, pesticides and other inputs? Facing increasing population and environmental instability, the human race is challenged with ensuring that there will be enough food to sustain us over time. Technology is playing an important role in finding solutions to today's food production problems. Sustainability practices create a more effective company, adding that they can also lead to out-of-the-box innovations that help a company's bottom line while helping to improve the world.

In developed countries, technology provides information for companies to make better decisions and gives consumers the transparency they're looking for in the supply chain; however, in countries like Lebanon, this topic is still new. Therefore, in this paper, we would like to explore the role played by technology in transforming the traditional food industries into sustainable one.

Samer Elhajjar

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Drivers of Resistance to Political Marketing Campaigns: An Exploratory Analysis

The objective of this research is to develop a better understanding of the reasons underlying resistance to political marketing campaigns. To our best knowledge, this is the first research studying political marketing through a resistance approach. Drawing on a literature review, this study adopts netnographic methodology to explore the resistance to political marketing campaigns in Lebanon. The findings show that skepticism, cynicism, apathy, and dissatisfaction have an impact on resistance to political marketing campaigns. Finally, we discuss several relevant theoretical and strategic implications, and point out directions for future research.

Deger Eryar

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Socio-economic Determinants of NEET in Turkey: The Impact of Parental Education and Employment

Our study will try to investigate the socio-economic determinants of NEET (not in employment, education or training) in Turkey with a special emphasis on the role of both parental education and employment. According to a recent report by OECD (2016) the number of 15-29 year olds NEETs is higher than before the crisis in almost all OECD countries, around 40 million in 2015. Although Turkey experiences by far the largest drop in the share of NEET (by almost 13 percentage points) between 2007 and 2015, it has still the largest share of NEET (30 %) among OECD countries. This high share of NEET in Turkey reflects two other qualities that keep Turkey in a different position than most of the other OECD members. One of them is the relative high share of inactive young people against the unemployed ones in the overall group of NEET. The other different aspect of the NEET rate is the massive gender gap

Parental education is expected to have a direct effect on the level of children's education. Parents with higher education levels tend to be more inclined to encourage their children to pursue higher education that can lower the likelihood of becoming NEET. High educational attainment by parents can also represent a higher socio-economic status that can enable parents to invest more in their children's education and skill formation. We also believe that parents' labor market participation might affect children's labor market status at least via two different channels. One of them is parents' ability to utilize their labor market network in securing positions for their children. This channel seems to be effective in countries like Turkey where most of the job-seekers use word of mouth rather than formal job-seeking methods. This recruitment channel seems to be much more crucial especially for those women, who do not have the necessary educational attainment enabling them to search for better jobs through their own means or formal channels. Therefore this channel can be important in examining the higher probability of women of becoming NEET either as unemployed or inactive.

Parental employment can be especially important for women through a different channel as well. There have been studies showing the key role played by mothers as agents of socialization in their children development, especially in their daughters' gender role attitude, including their attitude toward working women. In other words, mothers with job market experience tend to hold non-traditional gender attitudes toward working women and their daughters are expected to have similar gender role attitudes, which make them more likely to participate in the labor force. This channel is

expected to be effective especially for low-educated and low-income groups where the traditional gender norms seems to have a more dominant impact on women's labor market status.

We first use nationally representative pooled-cross-sectional Household Labor Force Surveys for Turkey between 2004 and 2015 (compiled by TURKSTAT). Our aim is to provide a general discussion of the socio-economic characteristics of NEET in Turkey. In order to examine the effect of parental education and employment on NEET, this study works with a different Household Labor Force Survey based on a representative sample from İzmir, third largest city of Turkey. Thanks to the extra questions about the educational background and the labor market experience of both parents, which are not included in the national HLF Surveys discussed in the first part, we are able to explore the impact of parents on children's likelihood of being NEET along with other socio-economic characteristics of individuals and households. Our initial results indicate the significance of having higher-educated mothers on lowering the probability of being NEET among young women. Moreover, having a working mother seems to be also important for increasing the probability of participating in the labor force among young women.

Oguz Esen

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From Fiscal Crisis to Fiscal Sustainability: İzmir Metropolitan Municipality

Local economic development (LED) has been increasingly popular among the policy makers, politicians and academics over the last three decades. The popularity of local economic development (LED) approaches are fundamentally based on the perception of failure of traditional development strategies. The bottom-up LED approaches are increasingly being an alternative or a component to top-down traditional development strategies (Rodriguez-Pose and Plavicini-Corona, 2013). Fiscal sustainability, which is long-run capability of an entity to consistently meet its financial responsibilities, the most crucial component of implementation of LED among its other components such as development plans, entrepreneurship, capacity building, participation, development linkages and autonomy.

Fiscal sustainability at the local level can be defined in several ways. Local level fiscal sustainability is the ability to meet present and future obligations, while being able to provide public services. Schick (2005) identified four dimensions of sustainability: "Solvency" is the ability of government to pay its financial obligations; "growth" is fiscal policy that sustains economic growth. "Stability" is the capacity of government to meet future obligations with existing tax burdens and "fairness" is the capacity of government to pay current obligations without shifting the cost to future generations. Local fiscal sustainability is important because an insolvent government cannot provide public services and make capital investments. With the economic growth and increase in population, local governments face large infrastructure investment needs and their corresponding financing needs. Local government budgets are sufficient to cover cities' operating costs but not enough to finance capital investments. The financing needs of large capital investments far exceed the budget of any local government. Borrowing is an appropriate way to finance for capital expenditures. Therefore, borrowing becomes a strategic decision local government. With debt, comes the risk of insolvency. Fiscal sustainability will require that cities facilitate access to financial markets as well as making more effective use of their own resources.

The aim of this paper is to outlay that the implementation of LED policy actions particularly fiscal sustainability by Izmir Metropolitan Municipality (İMM) brought better development outcomes. This paper argues that two different channels through which sustainable fiscal policies implemented by Izmir Metropolitan Municipality created "high investment-high growth" outcomes. The first channel is direct: sustainable fiscal policies help facilitate access to external funds with reasonable conditions. The second channel is

rather indirect and it works through granting IMM fiscal autonomy by reducing the reliance of IMM on inter-governmental transfers.

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Grit and Mathematics

The study analyzes the circumstances of success in a first year Learning Mathematics Skill-Mathematics 101 sequence for students involved with the experience of becoming professionals in health sciences occupations at a NY state college level. The Upper-NY state institution specializes in fields such as pharmacy, physical therapy, occupational therapy, nursing, biology, dietetics, and health analytics. The study describes through a case study descriptive method the student development in becoming prepared for the introductory Calculus after the classes had been taken. The case studies analysis explains the importance of grit and determination for the students involved in the study. The involved students in spite of them have all the odds to fail the learning skills-MAT 101 course sequence, managed to surpass the physical or learning challenging obstacles and succeeded at having passing/high grades for the courses taken.

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The Causal Effect of Hedonic Brand Cues on Consumers' Decision-Making Impulsivity

The secret of meaningful brands does not appear to lie among the idiosyncratic benefits they communicate, nor is it a function of the utilitarian needs they claim to satisfy. Brands that have broken through the clutter seem to have succeeded by 'forging' a profound emotional connection with consumers: it is visceral, emotional, impulsive. Traditional consumers' decision-making theories, aimed at unveiling brand choice, hypothesised that conscious individuals make rational decisions aimed at the maximisation of their satisfaction. Nevertheless, research has increasingly conceptualised consumer behaviour not merely as a rational and rigid process, but in fact as the outcome of emotional and impulsive processes. Specifically, analysing consumers' acts under a hedonic perspective, it has been coined the expression "hedonic consumption" to describe the aspects of consumer behaviour that are linked to emotive events caused by the multisensory involvement experienced while consuming valuable brands.

Brands' reward-triggering visuals, conceptualised in this research as hedonic brand cues, may be regarded as conditioned stimuli that trigger approach, goal-oriented, behaviour. Neurological evidence suggests that exposure to proximate rewards such as hedonic cues is capable to activate consumers' reward circuitry which, in turn, may trigger non-specific and impulsive conditioned consummatory mechanisms. This study, drawing upon the interdisciplinary field of consumer psychology, aims to identify and explore precisely the nature of the causal entities (theoretical and empirical) underlying the relationship between visual hedonic brand cues exposure and consumers' decision-making impulsivity. Specifically, focusing on the food domain, this study assesses (a) the causal effects of hedonic brand cues on consumer decision-making impulsivity and (b) the causal factors and generative mechanisms underpinning this relationship.

The adopted methodology builds on the conceptual framework developed from the literature review and attempts to furtherly expand it. The methodology adopts a triangulated multi-method qualitative approach: participant observation of purchase behaviour, semi-structured interviews

aided by projective techniques, and online diaries via social media. The employed methods have been designed to build on each other in order to deepen progressively the holistic understanding of the causes of participants' decision-making impulsivity as outcome of hedonic brand cues exposure. Derived from the initial analysis of data, preliminary findings suggest (a) an explanatory theoretical decision-making model that incorporates the causal effect of visual hedonic brand cues on consumers' impulsivity and (b) practical recommendations to guide practitioners towards maximising the effectiveness of visual brand communication strategies and consumers' brand-specific impulsivity.

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The Saving-Investment Nexus: Evidence from Botswana

The link between saving and investment has long been a subject of interest among economists and policy makers alike. The theoretical debate has centred around two issues; whether there is a long run relationship between a nations' saving and its investment, and the direction of such causal relationship. The Keynesian perspective is that saving adjusts passively to meet the level of investment required to support a certain level of income. Thus causality runs from investment to saving. By contrast, the (neo)classical view is that the causality line is reversed since all saving is automatically channelled to investment. Therefore although the two competing views suggest existence of positive long run relationship between saving and investment, they differ in policy prescriptions.

Within the saving leads to investment view, the main argument has been that in a closed economy setting, saving provides funds to finance investment required to grow the economy (Schmidt, 2003). However, in an open economy set up, the argument has been that investment in one country can be supported by saving elsewhere in the world. That is, saving will go to areas where there are profitable investment opportunities and as such there should not be any correlation between domestic saving and domestic investment. Feldstein and Horioka (1980) tested this relationship for 16 Organization for Economic Cooperation and Development (OECD) member countries and found a positive correlation between national saving and investment. They interpreted their result as evidence of limited movement of funds across national boundaries. This result came to be known as the 'Feldstein-Horioka puzzle' because it was unexpected for developed countries which have a higher degree of financial integration.

Following this puzzle, a number of studies tested the saving-investment relationship for different regions using various estimation techniques. However, results from both correlation and causality studies are mixed (see, e.g., Narayan (2005); Christopoulos (2007); Singh (2008); Coakley *et al.* (1998); Tang and Lean (2008); Narayan and Narayan (2010) Feldstein and Bacchetta (1991); Obstfeld (1986); Baxter and Crucini (1993); Kasuga (2004); Wong (1990) and Bayoumi (1990) for correlation studies and Palley (1996); Ogbokor and Musilika (2014) and Narayan (2005) for causality studies).

Botswana has over the years been characterized by higher gross national saving and investment than most African countries. Part of the reasons for the impressive saving recorded can be explained by government policy. The

main motivation behind the savings accumulation seems to be a belief that saving influence investment, which in turn encourage economic growth. For a country characterized by limited integration into the global financial markets and low foreign direct investment, efforts to encourage domestic savings could be regarded as appropriate. However, it should be noted that such saving is achieved at the expense of consumption. Continued postponement of consumption can be justified if there is evidence that saving leads to investment. Unfortunately we are not aware of any empirical evidence indicating that the Botswana economy is savings-driven. This study used Botswana data for 1970-2016 to investigate the nature of this relationship within the ECM based Granger causality framework and the autoregressive distributed lag (ARDL) bounds testing approach to Cointegration. The results show negative relationships between saving and investment both in the long run and short run. They also show that this effect runs in both directions.

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Best Practices for Logistics Analytics

Analytics and the supply chain are paramount topics important to every organization. How to get optimal value from the supply chain drives decisions across organizations both large and small. Within supply chains, logistics enables goods to move through distribution and reach the end consumer. Being such a widely used process motivates the researchers to examine the logistics portion of the supply chain from an analytical perspective and attempt to determine best practices for gaining optimal value. Transformative analytics techniques, such as multivariate regression modeling should enable logistics managers, researchers, and others to better understand the factors that go into the cost of logistics services, and thus impact decisions made to enhance value through the supply chain. In a world where logistics managers rely heavily on “gut feel”, utilizing business intelligence and analytics can better enable decision making.

Stelios Georgiou

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A Step by Step Methodology for Designing Experiments

Design of experiments can be particularly useful in any field of science. A suitable experimental design could result in performing the needed experiments in an efficient way and collect data that will be useful for the particular problem of interest.

The fundamental principles of experimental designs will be presented and discussed. The methodology and the procedure we need to follow when describing experiments from the scratch need to be setup and fixed at the beginning of each experiment.

Here, a step by step approach will be sketched down and the methodology of how to design and perform an experiment will be deployed. All the parameters of design of experiments will be discussed and the major aspects of the methodology will be structured and explained so that it will be easy to follow. The choice of the response in an experiment is crucial. The selection of the factors and the variables of interest is very important. Levels and ranges of those factors to be study need to be arranged in appropriate levels before we start the experiments. The choice of the design matrix for the experiment is one of the main aim of experimental design theory because it can really make a difference in the outcome of our data.

The analysis of the collected data is highly correlated to the methodology of collection, thus with the design of the experiment. Following the steps of design methodology, choosing the correct design of experiment and applied all the needed steps will linked to the needed statistical analysis and the results will be trusted and efficient.

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&

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**Concept and Role of Values in the Society:
With Special Reference to India**

Values can be seen in different ways, even it can be considered in different disciplines, in our academic fields, as well as in the behaviour of our daily life.

In sociology, the meaning of value is different from meaning of value in economics or philosophy. Let us see, in economics values has been considered as only price. The “theory of values” is almost co terminus with the “theory of price”. But if we look into the discipline of philosophy “values” is a part of ethics, political philosophy and aesthetics.

In the context of sociology, social values form an important part of the culture of the society. In this paper, they can be analyzed as integrated into the following flow: Social culture → social values → social structure → social order → social control → social action that leads to social conduct in the INDIAN Society.

Victor Haines

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The Challenge of Matching Resources to Demands for Employee Well-Being: The Case of Nonstandard Work Schedules

Nonstandard work schedules involve nondaytime, weekend or rotating hours. Employer demand for such schedules is increasing, but the consequences of such work arrangements are many, including adverse impacts on marital stability, quality (Maume & Sebastian, 2012; Mills & Täht, 2010; Presser, 2000), work-family conflict (Davis, Goodman, Pirretti, & Almeida, 2008; Fenwick & Tausig, 2001; Tammelin, Malinen, Rönkä, & Verhoef, 2017), work-life balance (Tausig & Fenwick, 2001), day care center use (Rachidi, 2011), maternal sensitivity (Grzywacz, Daniel, Tucker, Walls, & Leerkes, 2011), breast-feeding initiation (Hawkins, Griffiths, Dezateux, & Law, 2007), child development (Grzywacz, 2016; Li et al., 2014), family functioning and parenting (Craig & Brown, 2014b; Craig & Powell, 2011; Staines & Pleck, 1983; Strazdin, 2006), risk of coronary heart disease (Kawachi et al., 1995), depressive symptoms (Perry-Jenkins, Goldberg, Pierce, & Sayer, 2007), and burnout (Fenwick & Tausig, 2001). With market forces ushering many workplaces into a 24-hour, 7-days-a-week economy, the prevalence of nonstandard work schedules is likely to increase even in light of mounting evidence of their detrimental consequences. It therefore seems timely to investigate the possible moderating role of resources that may be available to workers involved in such employment arrangements.

The aim of this study is therefore to determine the extent to which organizational practices and social support in the home domain mitigate the consequences of nonstandard work schedules. We do so by considering the need to match resources and demands in accordance with recent developments in occupational health research. Based on a sample of working adults, this study first reports the associations between nonstandard work schedules and strain, health, work-family spillover, and parenting. We then examine the moderating influence of five supportive organizational practices and different forms of social support on these associations. The findings support the view that those resources that address the temporal aspects of individual functioning are most effective at reducing the negative consequences of nonstandard work schedules. Considering the time implications of such schedules, the matching proposition is substantiated suggesting that to be effective, the resources available within and outside the workplace should address the core issues involved in the demands or stressors encountered in the workplace.

Debbie Human-Van Eck

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Cause-Related Marketing: The Influence of the Donation Recipient in Campaign Success

Cause-related marketing (CARE) is defined as “the process of formulating and implementing marketing activities that are characterised by an offer from the firm to contribute a specific amount to a designated cause when customers engage in revenue providing exchanges that satisfy organisational and individual objectives” (Varadarajan and Menon, 1988:60). Over the past three decades CARE has become an increasingly popular marketing technique due to its ability to unite the consumer, the firm and the donation recipient in a campaign that benefits all three parties (La Ferle, Kuber & Edwards, 2013).

CARE campaigns are often designed by firms rather than donation recipients. Consequently, these campaigns often depict the donation recipient in a less prominent position and magnitude than the cause-linked product on CARE communication material and product packaging. Similarly, CARE research has focused extensively on the role of the cause-linked product/brand on campaign effectiveness (Lafferty and Edmondson, 2014; Boenigk and Schuchardt, 2013), but despite its potential influence the role of the donation recipient has received limited attention (Human, 2016; Chang, 2008). Research has found that specifying the donation recipient in CARE campaigns has more positive consequences than when proceeds are promised to vague recipients (e.g. charity, education) (Human, 2016). However, the depth of donation recipient details that should be included in CARE campaign communication has not been investigated.

The purpose of this research was to assess the influence of varying levels of donation recipient detail on consumer responses to the CARE campaign. The consumer responses that were investigated were brand attitude (focused on the cause-linked brand), perceived firm motives for being involved in the CARE campaign and respondent intention to participate in the campaign by purchasing the product. The donation recipient was represented by an education-related non-profit organisation (NPO), namely the Ubuntu Education Fund.

A between-subjects post-test only experiment, including three experimental groups, was conducted. Three stimuli in the form of print advertisements were developed with the assistance of focus groups. Each stimulus featured a different manipulation of the non-profit brand. Stimulus 1 included only the name of the NPO. Stimulus 2 depicted both the name and the logo of the NPO. Stimulus 3 showed the name of the NPO, its logo and a visual extension of the brand in the form of an image of children being educated. The other elements of the advertisement were held constant. The

experimental groups were each exposed to one of the stimuli, where after an online questionnaire was completed by Generation Y respondents. Convenience sampling was used and the sample size was 228 (group 1: 79 respondents; group 2: 78 respondents; group 3: 71 respondents).

The dependent variables were measured by means of existing, reliable scales. Data was analysed with one-way ANOVA, Welch's test or the Brown-Forsythe test from IBM SPSS. The reliability of each scale was confirmed (Cronbach alpha>0.7). The results indicated that brand attitude, perceived firm motives and participation intention were significantly influenced ($p<0.05$) by the depiction of the NPO in the advertisement. Exposure to the NPO description, logo and picture generated more positive results than exposure to only the description of the NPO. In terms of perceived firm motives and brand attitude the most positive results emanated from exposure to the NPO description and logo, whereas with participation intention the description-logo-image combination resulted in the most positive intentions.

The results confirm that providing donation recipient detail plays an important role in CARE – it has the ability to influence consumer attitudes toward the profit brand, intentions to participate in the CARE campaign and how firms' motives for conducting CARE is perceived. Therefore firms who implement such campaigns are encouraged to provide sufficient exposure to the NPO as donation recipient and not only to the cause-linked product. It is recommended that firms view the NPO as an equal partner in the CARE campaign and that they collaboratively plan campaigns in such a manner that both parties benefit.

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Holistic Marketing Strategies in Art Projects

The paper will give theoretical and practical approach to holistic marketing strategies in art projects. In the first part of the paper, will be present theoretical aspects of art's projects through history and time, by leading authors in the field of arts. Modern arts comes from traditional form of experiences to integrated, holistic approach, which includes information technology platforms, modern presentations in museums and cultural institutions, interactive discussion with audiences, by using of social media. In the second part of the paper, we present theoretical aspects of holistic marketing approach. There is an emphasis on all aspects of holistic marketing approach, internal marketing, integrated marketing, relationship marketing and social responsible marketing have impact in leading of art's projects. In the paper we emphasize that the new art's audience generation need integrated, modern approach, based on both traditional and modern, holistic strategies. Young generations love to share experiences about art's projects. In the third part of the paper, will be present empirical research about implementation of holistic marketing approach in art's projects. Empirical research includes questionnaires and focus groups by artists, cultural managers and audiences about their new needs, wishes and feelings in modern arts. As a good example of implementation of holistic marketing strategies in art's projects will be present museum of Cycladic Arts in Athens and museum Tate Modern in United Kingdom.

Yi Jiang Wang

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**The Economic Origins of Force, Power and the State:
A Theory of Social Order**

Lukanda Kalobo

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The Use of Principles of Learning Statistics to Promote the Teaching and Learning of Statistics at High School in South Africa

Several studies on methods of improving students' general mathematical competence have relevance for teaching statistics. Many of these studies help to reinforce and extend the research on statistical teaching and learning. Based on these studies in the context of constructivist approach, the general principles of learning statistics have been formulated. In South Africa, the Grade 10-12 Mathematics Curriculum seems not to mention any theory or principle on how to teach and learn statistics, but provides teachers with specific aims and abilities to be developed. Despite this provision, many teachers may not be aware of the growing body of research related to teaching and learning of statistics. This is an exploratory study that sought to explore the use of principles of learning statistics to promote the teaching and learning of Statistics in high school. The sample of 66 Grade 12 Mathematics teachers (58 females and 42 males) were randomly selected to respond to 26-item of the 5 Likert Scale questionnaire on using the general principles of teaching and learning statistics. Teachers' responses were reported descriptively in the frequencies and percentages. The results lead to the conclusion that teacher training institutions need to support and spread the teaching and learning of statistics by using different methodologies such as, principles of learning statistics.

Nazli Karamollaoglu

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An Analysis of Export Volumes to Exchange Rate Movements Using Firm-Level Data

Aggregate studies have often fail to reflect the impact of exchange rate movements on macro aggregates, a situation has been termed as exchange rate disconnect puzzle in international macroeconomics literature. We provide an alternative explanation for the relatively weak response of export volumes to exchange rate movements using firm-level data. An original feature of this article is that it departs from the literature by using a firm-specific exchange rate index. Our results, in parallel to the few disaggregate level studies, confirm that exchange rate elasticity varies across industries. Moreover, exchange rate elasticity is sensitive to the exchange rate index.

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&

Hongye Sun

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Unobserved Heterogeneous Bias and Wage Effects of Educational Mismatches across 20 OECD Countries

This paper aims to exploit the causal relationship between wage effects and educational mismatches. The average educational attainment has been steadily increasing in recent decades, particular for industrilized countries. The imbalance between supply and demand brings about high probability that mis-allocates workers to mismatched occupations. Using Programme for the International Assessment of Adult Competencies (PIAAC) dataset, the wage effects of under- and overeducation are explored. The estimated results suggest that the negative returns to dummy of overeducation can be found in most OECD countries. However, the wage reward of educational deficiency is weak both in statistical significance and magnitude. That is, the wage penalty of overeducation is prevalent rather than the wage reward of undereducation. In addition, propensity score matching (PSM) is applied to identify the applicable comparison of samples between mismatched and well-matched groups. The findings indicate the differences of estimated parameters between OLS and PSM vary across countries. Notwithstanding, both in signs and significance, the estimates of PSM present virtually consistent results in contrast to OLS.

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Spillover Effects from the ECB's Unconventional Monetary Policies: The Case of Denmark, Norway and Sweden

Using event-study techniques we investigate the impact of ECB's announcements of non-standard policy measures on a broad range of financial assets from Denmark, Norway and Sweden. We find evidence that unconventional monetary policy announcements by the ECB resulted in pronounced spillovers to Denmark, Norway and Sweden. In particular, our results suggest that medium- and long-term government bond yields, corporate bond yields and CDS spreads were affected by ECB's announcements of non-standard policy measures. Our empirical results indicate that the portfolio rebalancing channel played an important role in the transmission of ECB's non-standard policy measures on medium- and long-term government bonds and corporate bond yields. However, it also seems that declining government bond yields transmitted to decreasing corporate bond yields. Moreover, our results suggest that benchmark stock market indices and exchange rates vis-à-vis the euro were mainly unaffected by ECB's announcements of unconventional monetary policies. Furthermore, we find pronounced spillover effects from Forward Guidance statements, Securities Markets Programme announcements, and Corporate Sector Purchase Programme announcements on financial assets from Denmark, Norway and Sweden. Though, our results highly depend on the respective monetary policy surprise measure used in our regressions and the degree of policy anticipation.

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A Catastrophe Model for Insurance Losses due to Burst Pipes Resulting from Subfreezing Temperatures using Vine Copulas

Extended periods of extreme cold weather can cause severe disruptions in human societies and can also lead to important economic losses. Of particular interest for the UK insurance industry are the economic losses as a result of bursting water pipes. During the winter of 2010/11 for example, the losses from burst pipes have exceeded £300 million in the UK making it the peril with the largest losses that year. Catastrophe models are important tools in the insurance industry to help determine the likelihood of occurrence of similar and even more extreme events. Their main goal is to estimate the full spectrum of probability of loss for a portfolio of insurance risks. This requires to consider not only each risk separately but also, and more importantly, how all risks relate to each other and their potential synergy to create catastrophic losses. However, the high dimensionality of the problem poses a big challenge for multivariate copula methods. Vine copulas provide a flexible solution to this problem based on a pairwise decomposition of a multivariate model into bivariate copulas. This approach is very flexible, as the bivariate copulas can be selected independently for each pair, from a wide range of parametric families, which enables to model a wide range of complex dependencies. The vine copula methodology is used in this paper to develop the first catastrophe model on insurance losses due to pipe bursts resulting from freeze events in the United Kingdom.

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Socio-Economic Determinism and Climate Change

The global warming problematic is in reality decided not by the UNFCCC or IPCC with its mastodon meetings. The decisive players are the states of the following BIG polluters of CO₂: China, India, Indonesia, Brazil, Russia Mexico, South Korea, Canada, Australia and the US, despite the fact that its present government already has defected from the common pool regime, set up in Paris 2017, These countries together with international shipping and aviation are putting out more than 50% of the CO₂s. However, they are little interested, because they emphasize the policy-making of socio-economic development, either economic growth with rich countries or the “catch-up” strategy with poor or emerging economies. *Resilience* will decide which countries can support the consequences of climate change.

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Has China's New Round of Collective Forest Reforms Caused an Increase in the Use of Productive Forest Inputs?

Forestland tenure and financial incentives are the most important policy issue to sustainable forest resource management. The new wave of reform of collective forestland tenure (NRCFT) has been launched since 2003 and the governmental matching reform measures (MRMs) for the NRCFT have been introduced since 2009. The objective of these reforms is to enhance sustainable forest resource management in Chinese collective regions by encouraging rural households' productive forest inputs. We use a unique dataset of 1,778 sample households in 18 counties of nine provinces with six years and employ a fixed effects model with clustered standard errors. Our empirical results indicate that:

1) the NRCFT has increased households' forestland area of different tenure types, and the effects of the MRMs on rural households' labor input and production expenditures for forestry purposes are generally positive, especially household used forestland as collateral for a loan and afforestation or reafforestation subsidy and reform of Annual Allowance Cut (AAC) that have significantly contributed to increase in the use of productive forest inputs;

2) the NRCFT and the MRMs have different impacts on the use of productive forest inputs for different tenure forests, and these reforms have caused the most significant changes in rural households' production decision changes for household responsibility forestland;

3) both the NRCFT and the MRMs have significant effects on rural households' rent-in and rent-out forestland; and

4) forestland fragmentations have caused additional labor and investment inputs for rural households' forest resource management and protection. And finally, market drivers and household and village characteristics factors also affect households' decisions for productive inputs for their managing forests.

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**Cheers with Port Wine by Young Consumers – Exploring
Perceptions and Attitudes**

The Port wine is a landmark of the Portuguese wine. It is a fortified wine produced in the Douro Demarcated Region (one of the first demarcated and regulated wine region in the world) under very specific physical and human conditions. Previous studies had shown that Port wine is mainly consumed by older consumers (more than 45 years old). Once there is a risk that habits and tradition of Port wine consumption will be lost in the coming years. Therefore, the aim of this study is to investigate the engagement of younger consumers with Port wine in order to draw marketing strategies for industry.

In the first stage of the research a qualitative approach was applied using focus group for data collection which included Port wine tasting as a projective stimulus. A guide was developed in order to study attitudes and perceptions of Port wine consumption and was focused in the following themes, particularly: Port wine conceptualization; tasting session and evaluation of the attractiveness; new forms of consumption; place of purchase and emotional connotation. The second stage stems from (1) the identification of the extrinsic attributes more important in the choice and (2) the new forms of Port wine consumption perceived by the young consumers. The best-worst (BW) method was applied to measure the degree of importance given by Generation Y to the main statements found in the first stage.

Fifteen students were recruited via email and two focus groups were performed at University of Trás-os-Montes and Alto Douro. Data was video recorded, transcript verbatim and content analyzed (NVivo). Participants were 53% male, aged between 19 – 31 years old, and all are moderate consumers of alcoholic beverages (e.g. 86.5% beer consumers, 54% Port wine consumers)

Results showed that Port wine conceptualization is mainly related to region of origin (Douro), unique sensory profile and alcohol content. The Port wine is for sharing at home, in special moments but just to taste. For young consumers, Porto wine is a wine full of history targeted for older

consumers. The consumption of Port wine is associated with comfort, elegance and nostalgia. The design and information on label, the color (rosé, white and red) and the design of the bottle are the attributes more attractive in moment of choice.

To conclude it is necessary to boost and to demonstrate that Port wine can be consumed by different age groups and in different contexts. Implement tasting sessions of Port wine in different moments of consumption can be a good strategy to call attention of the youngest. A quantitative study is now on-going so that results can be representative of the Portuguese population for this segment.

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A VAR Evaluation of Classical Growth Theory

Over the past two decades, there have been numerous attempts in economic theory to model the historical regime of a Malthusian trap as well as the transition to growth in one coherent framework, or in other words, a unified growth theory. However, in most of these models, an important effect suggested by Malthus has been frequently omitted. By including what he had called "the great preventive check" in the traditional Malthusian model which is based on the principle of population, the principle of diminishing returns and the principle of labor division, the transition can be modelled in a very simple dynamic macroeconomic framework. The aim of this paper is to first construct and calibrate the suggested classical model and to eventually employ a conventional VAR-Method to provide evidence of the above principles using country-specific annual historical data on crude birth rate, crude death rate and GDP per capita growth rate. As a result, it is argued that emerging economies follow a universal macroeconomic pattern of development. A decreasing death rate is succeeded by a decreasing birth rate which at the same time induces GDP per capita to rise sustainably. The correspondingly advanced microeconomic theory suggests that increasing life expectancy tends to create a demographic structure that is much less prone to overpopulation.

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Impact of Public Pension on Labor Supply of Intra-Household Prime-Age Adults: Evidence from Rural China

To address the social and economic problems caused by the ageing population, many governments around the world sought to establish a set of social security systems (e.g. a universal public pension scheme) to provide security for the elderly. Even though the public pension can reduce the elderly poverty and increases the individual welfare, it is pointed out that the public pension may reduce the labor supply, therefore a public pension scheme may negatively affect economic growth in the long-term based on the empirical studies for the developed countries. As a developing country, Chinese government implemented a public pension (New Rural Pension Scheme: NRPS) in 2009 for the rural regions. Does the New Rural Pension Scheme (NRPS) affect the labor supply of intra-household prime-age adult in China? Based on the natural experiment model (DID model), using Chinese Health and Nutrition Survey (CHNS) longitudinal survey data from 2000 to 2011, this study takes an empirical analysis to provides evidence on the issue.

Several major conclusions emerge. First, generally, even though the impact of the NRPS on labor participation of intra-household prim-age adult is not statistically significant, the NRPS may decrease the probability to become a self-employed worker. Second, the NRPS decreases the probability to become a self-employed worker for men, and it also decreases the probability to become a regular worker for women. Third, the negative effect of the NRPS on the labor participation of intra-household prime-age adults is greater for the group aged 35-44 years, low-education group, middle-income household group, and central region residents than for the other groups. Fourth, for the mechanism of effects of the NRPS on labor supply of intra-household prime-age adult, the child-care hypothesis and income effect hypothesis are analyzed. The results support the child-care hypothesis.

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Marketing and Communication in the Creative Industries Today: How are Creative Companies Managing the Challenges of Addressing New Consumer Segments and the “Generation Z”?

This paper aims to examine the communication strategies of creative companies today and the way they are shifting their marketing initiatives in order to better address the younger consumer segments. In recent years we have witnessed the advance of the purchasing power of young consumer groups such as “Generation Z”. For many brands this meant great changes -- as soon as „Generation Z” came of age, this meant that their brand values, attitudes and knowledge about consumer behavior became obsolete.

Firstly, the paper will research the „Generation Z” and their characteristics. It is said that this generation is comprised of people born between mid 90s and mid 00s. How do we communicate to a generation of young individuals who have grown up using technologies and the internet and are unaware that at a certain point in time a technological revolution occurred? This generation often knows more about brands than their employees and they are continuously online. They represent the most sophisticated consumer group we have seen to this day, and are very socially-minded consumers. How do they consume goods from the sphere of creative companies and how interested are they in this type of products and services? Their purchasing behavior often shows that they are interested in collecting experiences and buying goods that express their unique identity.

Secondly, the paper aims to examine the context in which creative companies operate today. What are the trends in communication and marketing in the sphere of creative companies, arts and culture? Which creative industries are the most influential today and which creative industries are most influenced by the behavioral patterns of the „Generation Z”?

Finally, the paper will aim to offer solutions and give advice on how creative companies can shift their communication initiatives and maximize profit by adequately addressing the „Generation Z”. Best practice examples will be given on how creative companies are marketing their goods to this segment today.

There are many implications that arise from choosing a marketing strategy which addresses younger segments. Will the younger consumers be the sole point of interest when it comes to marketing of goods in the creative industries? What will this shift in focus signify for the older

segments and the way they purchase goods? These are just some of the questions this paper will aim to answer.

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&

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Analysis of Income Inequality in the Mexican Labor Market

The objective of this study is to estimate the income inequality, measured by the Gini coefficient, in the Mexican labor market, the hierarchy characterized mainly by areas of study of professional careers and, on the other hand, by type of venture and type of worker's occupations. The database was taken from the National Employment and Employment Survey 2017 of the first quarter. It was considered only the employed population, who declared some level of income. For the calculation of the Gini coefficient the DASP package (Distributive Analysis Stata Package) was taken into account in the statistical program Stata. One of the main results shows that there is a great inequality due to the professional career level, being the engineering area the area with the highest level of inequality, having a value of 0.64, while the area of education was 0.49. Furthermore the Commerce sector the Gini coefficient reached 0.59. As a conclusion we can declare that, in the professional market, reaching high levels of schooling does not necessarily ensure success in reducing income inequality.

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&

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Information Technology Efficiency in Quality Management Improvement and Its Impact on Organizational Performance: An Analysis of Lebanese Organizations

The practice of quality management (QM) has become common among organizations during the last decades. Likewise, the actual application of information technology (IT) is becoming critical to the success of an organization. The purpose of the paper is to examine the relationships between quality management and organizational performance, the relationships between IT and organizational performance and the role of IT in quality management implementation within the Lebanese organizations using a case study approach.

Quality management and information technology can provide a comprehensive and integrated approach by which organizations can improve their performance. A considerable body of empirical evidence suggested that the various benefits of quality management can improve organizational performance. Also, the quality management assessment models such as the Deming Prize, Malcolm Baldrige Award, and European Quality Awards provide the framework for assessment of the QM approach and its results. There have been only a few attempts to empirically evaluate the effects of QM and IT on organizational performance in Lebanese organizations. There are many opportunities available for organizations to improve their organizational performance by including both IT and QM in their operations.

The quantitative study results reveal that Lebanese Organizations have implemented QM programs to satisfy customers. In addition to reducing expenses, QM contributes to factors such as conformance to requirements, customer loyalty and retention, and customer satisfaction. Similarly, IT contributes to factors such as overall performance, customer satisfaction, and employee productivity. The case study results reveal that the IT usage varies among the 12 dimensions of QM. Factors such as customer management, communication, teamwork, and process improvement measurement exhibit high levels of IT usage. Factors such as operational quality planning and strategic quality management exhibit moderate IT usage. IT plays some role in factors such as supplier management, culture, empowerment, and quality citizenship.

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&

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**Identifying Firm-Level Export Barriers in African Fragile and
Conflict-Affected Countries Constraining their Export
Propensity and -Intensity**

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Streamlining Management Information Systems Processes towards Improving Sustainability Reporting for a Tourism Company

Information systems are used to allow organisations to achieve business objectives and are critical in supporting organisations in operational excellence, to develop new products or services, to improve decision-making or to gain a competitive advantage. Reporting on information is inevitably part of organisation's objectives regardless of the industry in which the organisation resides. Management information systems (MIS) are used to support decision-making in organisations. The most important characteristic of MIS are relevance, accuracy, usefulness, timeliness and completeness. When MISs adhere to these characteristics, decision makers in the organisation have confidence in their decisions resulting in desired actions.

This paper reports on sustainability information reporting challenges of a luxury experiential travel company operating in geographically dispersed locations. The challenges are due to apparent disparate data captured on different systems used for financial, operational and sustainability reporting. Besides the disparate data generated, the different systems duplicate the same information on various versions of data sets on different platforms. Bandwidth capacity and varying business priorities complicates compliance of operational units' reporting. The research objective was to determine how current reporting into the MIS can be streamlined to ensure improved flow of relevant, accurate, useful, timely and complete sustainability data to facilitate optimal decision-making capabilities for various operational units. The case organisation's MIS practices were compared against a publicly trading peer organisation to benchmark the trends in sustainability reporting. Through a number of key interviews the research results showed the information flows, flaws and gaps in the current reporting practices. The inherent differences in the case organisation and the peer organisation highlighted potential areas for improvement and change. The technology, organisation, environment (TOE) framework proved an ideal fit as a foundation for understanding the requirements to streamline the reporting process of MIS processes for the case organisation.

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&

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Intellectual Capital: Its Impact on Stability and Performance of Ghanaian Banks

Purpose: The purpose of this study is to investigate the influence of intellectual capital (IC) and its components on the profitability, efficiency, productivity and financial stability of banks in Ghana.

Design/methodology/approach: The study used an unbalanced data of 32 banks over the period 2000-2015 and employed fixed effect or random effect to investigate the impact of intellectual capital and its components on the profitability, efficiency and productivity of banks while controlling for size, leverage and concentration. The Value Added Intellectual Coefficient (VAICTM) model is used to proxy IC.

Findings: There is a positive significant impact of VAICTM on profitability, efficiency and productivity as well as financial stability. VAICTM has a U-shape link with net interest margin (NIM) and cost-to-income (C/I) ratio but an inverted U-shape with return on asset (ROA), return on equity (ROE), asset turnover (ATO) and insolvency risk (IR). Human Capital Efficiency (HCE) is seen as the key driver of the impact of IC on profitability, efficiency, productivity and financial stability and has significant impact on all dependent variables except ROE. There are mixed and inconclusive results of the impact of structural capital efficiency (SCE) and capital employed efficiency (CEE) on performance variables. SCE has an inverse relationship with efficiency but CEE has a significant direct link on efficiency but a significant inverse link on IR. Leverage impacts ATO positively and statistically at 1%. Bank size drives ROA, ROE and efficiency but not NIM and ATO while smaller banks are more stable than the large ones. Concentration is evident to be a driver of ROA and ROE while competition is a recipe for stability.

Originality/value: This is the first paper that explored the impact of IC on financial stability in Ghana and Africa.

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&

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Transforming Industry Professionals into Effective Defined Term and Adjunct Faculty

Business Schools are increasing the number of defined term and adjunct faculty due to the demands of increasing student populations and the realities of budgetary/hiring constraints. There are many factors driving the trend of filling vacancies with non-tenure track appointments, including economic and budgetary considerations. There is also a trend (especially in the more technical fields) to hire adjunct and non-tenure track full-time clinical faculty to teach these courses. Taken together, these trends are resulting in the appointment of non-tenure track faculty at an increasingly faster rate than seen in the previous decades. This necessitates that the academy needs to develop translational programs to assist new non-tenure track faculty as they move from industry to faculty roles.

The economic downturn has also impacted the demographics of student populations in the public and private universities in the U.S. Those students who could minimally afford attending a private university prior to the economic downturn, are now finding that they cannot afford private university tuition and are turning to the public universities to complete their degrees, increasing the student population in the public university systems. In addition, unemployment due to the economy has resulted in laid off employees seeking additional education to make themselves more marketable. This increase in student population along with changes in hiring practices will lead to larger class sizes and additional course loads, resulting in more full-time tenured faculty choosing to retire.

Based on all the factors cited above, it appears that for the foreseeable future the student population in the public universities will increase, while at the same time the current population of tenure-track professors will decline. Therefore, public university systems globally will have to increase the number of non-tenure track appointments to teach a larger number of course sections needed to accommodate the current and future population of students.

Many higher education institutions do not have a formal program to assist new non-tenure track faculty into the world of academia. This paper proposes a process designed to orient those new faculty into their new profession of teaching. In addition, a continuous improvement process will also be introduced that is designed to measure new faculty performance and

will outline the resources needed for these new faculty members to succeed. The program's objectives are designed to successfully translate these new non-tenure track defined term faculty into the academy, as well as maximize the university's return on investment.

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Do Business-Friendly Regulations Promote Entrepreneurship Growth? Analysis using African Data

Despite the strong growth potential, many challenges to business and entrepreneurship remain, including numerous and costly regulations. Using the *Doing Business* data, *governance* and *social economic indicators* this study examines the impact of business registration regulations on entrepreneurship growth in Africa over the period 2003-2016. We examine whether business-friendly business start-up regulations, as measured using the *Starting a Business Distance to Frontier* as well as its components, number of procedures, time (in days), cost and capital required to register a business promote entrepreneurship growth.

The findings confirm all the four hypotheses. Numerous business regulations that are implemented over several days and at high costs, adversely impact entrepreneurship. Holding other factors constant, improvements in the Starting a Business Distance to Frontier by 1 percent increases *new business entry* by 0.02 percent. Eliminating 1 business registration procedure increases *new business entry* by about 0.14 percent. Reducing the time required to register a company by one day leads to a 0.01 percentage point increase in *new business entry*. Reducing the cost and the minimum capital by one unit (each as a ratio of income per capita) required to register a business by 1 percent leads to 0.04 percent and 0.06 percent increase in *new business entry*, respectively. However, the coefficients of time, cost and minimum capital required to start a business are weakly significant

Reforms to Africa's business environment are required to promote entrepreneurship, which is key to stimulating employment creation, innovation and overall economic growth. Governments should review existing the procedures, time required and cost of registering companies to eliminate any unnecessary ones, reduce the time and cost required to register firms.

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Influence of Time to IPO in Maximizing Foreign IPO Value: Moderating Role of Home Business System and Host Venture Capitals

With the integration of financial markets and disappearance of barriers, firms have increasingly opted for initial public offerings (IPOs) abroad. To determine the specific attributes contributing to successful foreign IPOs, we mainly hypothesize that a foreign firm's time between incorporation and its IPO abroad is negatively associated with IPO value, where shorter time corresponds to better IPO results. In addition, we posit that business systems and venture capital firms have moderating effects at the country level.

In order to test the hypotheses on foreign firm's time to IPO and IPO success, a sample of firms that went public in the U.S. from 2006 to 2014 was collected from Securities Data Corporation (SDC)'s New Issues database. Then, the financial data of these firms were collected and were matched using both Wharton Data Research Service (WRDS) and Bloomberg. Only the IPOs issued at the NYSE and NASDAQ were considered. Out of the 218 foreign firms that went public in the U.S., 10 companies were further eliminated due to reasons including unavailability of the data on specific incorporation date, critical in calculating the independent variable of interest, or pre-IPO total asset amount. As a result, final 208 foreign firm IPOs held in the U.S are examined.

The results partially support these hypotheses and provide a comprehensive understanding of the factors that contribute to firms' successful public debut abroad.

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A Comparison of Gaussian and Skew-Gaussian Copula

Here, we try to compare the performance of Gaussian Copula and the Skew-Gaussian Copula. The detailed results will be presented at the forthcoming ATINER conference in Statistics during July 2-5, 2018.

Gaussian Copula:

$$C(u_1, u_2) = \Phi_2(\Phi^{-1}(u_1), \Phi^{-1}(u_2))$$

where $\Phi_2(x, y)$ represents the bivariate standard normal cumulative distribution function and $\Phi^{-1}(\cdot)$ represents the functional inverse for the standard normal cumulative distribution function.

Construction of Skew-Gaussian Copula:

Skew Normal:

Let U and V be two independent standard normal variables and δ_1 be a constant such that $-1 < \delta_1 < 1$.

Then, $Z_1 = \delta_1 |U| + \sqrt{1 - \delta_1^2} V$ follows a skew normal distribution.

Note that,

$$\begin{aligned} P(Z_1 \leq z_1) &= \int_0^\infty P(\sqrt{1 - \delta_1^2} V \leq z_1 - \delta_1 u \mid |U| = u) P(|U| = u) du \\ &= 2 \int_0^\infty P(\sqrt{1 - \delta_1^2} V \leq z_1 - \delta_1 u) \phi(u) du \\ &= 2 \int_0^\infty P\left(V \leq \frac{z_1}{\sqrt{1 - \delta_1^2}} - \frac{\delta_1 u}{\sqrt{1 - \delta_1^2}}\right) \phi(u) du \\ &= 2 \int_0^\infty P\left(V \leq \frac{z_1 - a_1 u}{b_1}\right) \phi(u) du \end{aligned}$$

$$F(z_1) = 2 \int_0^\infty \Phi\left(\frac{z_1 - a_1 u}{b_1}\right) \phi(u) du$$

where $a_1 = \delta_1$ and $b_1 = \sqrt{1 - \delta_1^2}$.

Next, we will investigate the skew normal density function.

By differentiating with respect to z_1 we get,

$$f(z_1) = \frac{2}{b_1} \int_0^\infty \phi\left(\frac{z_1 - a_1 u}{b_1}\right) \phi(u) du$$

$$\begin{aligned}
 &= \frac{2}{b_1} \int_0^\infty \frac{1}{2\pi} \cdot e^{-\frac{1}{2} \left(\frac{z_1 - a_1 \cdot u}{b_1} \right)^2} \cdot \frac{1}{2} \cdot u^2 \cdot du \\
 &= \frac{2}{b_1 \cdot 2\pi} \int_0^\infty e^{-\frac{1}{2} \cdot z_1^2} \cdot e^{-\frac{1}{2} \left(\frac{u - a_1 \cdot z_1}{b_1} \right)^2} \cdot du \\
 &= 2 \cdot \phi(z_1) \cdot \left(1 - \Phi \left(\frac{-a_1 \cdot z_1}{b_1} \right) \right)
 \end{aligned}$$

Bivariate Skew-Normal:

Let U, V be two independent standard normal variables and U, W be two other independent standard normal variables along with constants δ_1, δ_2 such that $-1 < \delta_1, \delta_2 < 1$.

$$\text{Let } Z_1 = \delta_1 \cdot |U| + \sqrt{1 - \delta_1^2} \cdot V$$

$$Z_2 = \delta_2 \cdot |U| + \sqrt{1 - \delta_2^2} \cdot W$$

Then, (Z_1, Z_2) follows a bivariate skew-normal distribution.

In order to derive the joint cumulative distribution $F(z_1, z_2)$, consider

$$\begin{aligned}
 &P(\delta_1 \cdot |U| + \sqrt{1 - \delta_1^2} \cdot V \leq z_1, \delta_2 \cdot |U| + \sqrt{1 - \delta_2^2} \cdot W \leq z_2) \\
 &= \int_0^\infty P(\sqrt{1 - \delta_1^2} \cdot V \leq z_1 - \delta_1 \cdot u, \sqrt{1 - \delta_2^2} \cdot W \leq z_2 - \delta_2 \cdot u \mid |U| = u) P(|U| = u) du \\
 &= 2 \cdot \int_0^\infty P(\sqrt{1 - \delta_1^2} \cdot V \leq z_1 - \delta_1 \cdot u, \sqrt{1 - \delta_2^2} \cdot W \leq z_2 - \delta_2 \cdot u) \phi(u) du
 \end{aligned}$$

This means, joint cumulative skew normal distribution is

$$F(z_1, z_2) = 2 \cdot \int_0^\infty \Phi_2 \left(\frac{z_1 - a_1 \cdot u}{b_1}, \frac{z_2 - a_2 \cdot u}{b_2} \right) \cdot \phi(u) du$$

where,

$$a_1 = \delta_1, \quad b_1 = \sqrt{1 - \delta_1^2}$$

and

$$a_2 = \delta_2, \quad b_2 = \sqrt{1 - \delta_2^2}.$$

Note that the bivariate skew normal density is given by

$$\begin{aligned}
 f(z_1, z_2) &= \frac{\partial^2 F(z_1, z_2)}{\partial z_1 \cdot \partial z_2} \\
 &= 2 \cdot \int_0^\infty \frac{1}{b_1 \cdot b_2} \cdot \phi_2 \left(\frac{z_1 - a_1 \cdot u}{b_1}, \frac{z_2 - a_2 \cdot u}{b_2} \right) \cdot \phi(u) du
 \end{aligned}$$

$$\begin{aligned}
&= \frac{2}{b_1 b_2} \int_0^\infty \frac{1}{2\pi\sqrt{1-\rho^2}} e^{-\frac{1}{2(1-\rho^2)} \left\{ \left(\frac{z_1 - a_1 u}{b_1} \right)^2 + \left(\frac{z_2 - a_2 u}{b_2} \right)^2 - 2\rho \left(\frac{z_1 - a_1 u}{b_1} \right) \left(\frac{z_2 - a_2 u}{b_2} \right) \right\}} \cdot \frac{1}{\sqrt{2\pi}} e^{-\frac{1}{2} u^2} du \\
&= 2\phi_2(z_1, z_2) \Phi \left(\frac{(a_1 b_2^2 - \rho a_2 b_1 b_2)z_1 + (a_2 b_1^2 - \rho a_1 b_1 b_2)z_2}{\sqrt{(1-\rho^2)b_1^2 b_2^2} \cdot \sqrt{a_1^2 b_2^2 + a_2^2 b_1^2 + b_1^2 b_2^2 (1-\rho^2)} - 2\rho b_1 b_2 a_1^2 a_2^2} \right) \\
&\quad \cdot e^{-\frac{1}{2(1-\rho^2)} \left\{ \left[z_1^2 - \left(\frac{z_1}{b_1} \right)^2 \right] + \left[z_2^2 - \left(\frac{z_2}{b_2} \right)^2 \right] - 2\rho \left[z_1 z_2 - \left(\frac{z_1 z_2}{b_1 b_2} \right) \right] \right\}} \\
&\quad \cdot e^{-\frac{1}{2(1-\rho^2)b_1^2 b_2^2} \left\{ (a_1 b_2^2 - \rho a_2 b_1 b_2)z_1 + (a_2 b_1^2 - \rho a_1 b_1 b_2)z_2 \right\}} \\
&= 2\Phi \left(\frac{(a_1 b_2^2 - \rho a_2 b_1 b_2)z_1 + (a_2 b_1^2 - \rho a_1 b_1 b_2)z_2}{\sqrt{(1-\rho^2)b_1^2 b_2^2} \cdot \sqrt{a_1^2 b_2^2 + a_2^2 b_1^2 + b_1^2 b_2^2 (1-\rho^2)} - 2\rho b_1 b_2 a_1^2 a_2^2} \right) \\
&\quad \cdot e^{-\frac{1}{2(1-\rho^2)b_1^2 b_2^2} \left\{ (a_1 b_2^2 - \rho a_2 b_1 b_2)z_1 + (a_2 b_1^2 - \rho a_1 b_1 b_2)z_2 \right\}} \\
&\quad \cdot e^{-\frac{1}{2(1-\rho^2)} \left\{ \left(\frac{z_1}{b_1} \right)^2 + \left(\frac{z_2}{b_2} \right)^2 - 2\rho \left(\frac{z_1}{b_1} \right) \left(\frac{z_2}{b_2} \right) \right\}}
\end{aligned}$$

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Pricing Equity in New Keynesian Models

How does monetary policy affect financial markets? Coming out of the financial crisis much ink, both academic and non-academic has been spilled trying to understand how policy makers should react to mitigate such a financial crisis. While there has been significant focus, justifiably, on crises, policy design and financial market transmission, there is very little theoretical work on how the effects of central bank policy transmits to equity prices. In particular this dearth of research on the theoretical transmission mechanism of central bank policy to equity prices, and other asset prices more generally, has been due to the dominance of local approximation solution methods in macroeconomics.

This paper provides a first step in understanding the transmission mechanism of central bank policy to equity prices. It studies how to price equity in a New Keynesian model with nominal rigidities in both prices and wages. The central result of the paper derives a relationship for the price of equity, linking it to the real economic variables of the model and the underlying parameters of the model. This relationship establishes the link between the real economy and the financial economy. How central banking policy affects real variables is well studied and understood – the relationship derived in this paper provides the necessary theoretical link to understand how that policy impact flows on to affect equity prices via the real economy. I proceed in the paper to solve the New Keynesian model with purely non-linear methods and provide some quantitative asset pricing results using the relationship derived.

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Risk Matrix of Human Error Factors for Managing Situational Awareness in Aircraft Maintenance Technician

Contemporary management and strategy means optimization of ingredient factors such as human resource, systems, operations, equipment's. With System Approach in management and strategy, human error as input has considerable potential to change results as airworthiness in AMO Management. Key challenge is human resource in management; well-designed AMO management creates opportunities to optimization of human factor based error. So human error will be reduced and this is the main of this research. Maintenance errors affect flight safety in the negative direction and create the economic losses, thus these errors made by aircraft maintenance technician (AMT) very costly for the aviation sector. The investigation process of the error for managing situational awareness is critical for aircraft maintenance organization (AMO).

In this process, it is very important to determine the factors contributing to the AMT error and corrective actions related to factors that contributed error must be taken by AMO. In this study, these factors are obtained from an extensive literature review and also the contributing factors to error are divided into sub factors and groups. This taxonomy will be designed as risk matrix. Owing to risk matrix, Managers may decision make on their options to sharing corporate sources in timely manner. The aim of this study is to suggest taxonomy of AMT error factors for managing situational awareness. It is seen that there is no taxonomy for these error factors in the literature. The results of this study are intended to constitute a guide for AMOs to manage situational awareness risk factors and to take corrective and preventive actions for their maintenance operations according to place of human risk factors in risk matrix. It is believed that this study is may contribute to optimum managing human risk factors in terms of raising awareness and providing awareness for similar practices.

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Foreign Aid and its Impact on Investment in Developing Countries: Empirical Evidence

This paper analyzes the effectiveness of aid to stimulate investment using different measures of aid. Most importantly, it investigates whether certain environments are more prone to stimulate or impede aid effectiveness. We estimate the aid-investment relationship using a fixed effects approach that actively controls for endogeneity and autocorrelation and that works with standard errors that take heteroscedasticity and cross-sectional correlation of the residuals into account. The estimates show that there is extreme heterogeneity in aid effectiveness across countries but on average a mostly positive and statistically significant relationship between aid and investment can be found. However, the results depend on whether countries exhibit favorable or unfavorable (time-invariant) country characteristics and whether they are exposed to better or poorer institutional environments. The influence of the amount of aid received is also found to be relevant for aid effectiveness. Our specific empirical results show that there is evidence that aid is not effective in countries with unfavorable time-invariant country characteristics. Second, we find aid to be more effective in countries that receive above average amounts of aid and in countries with relatively good institutions. Third, the empirics show that aid enhances investment in (Sub-Saharan) Africa and low-income countries. Moreover, aid is not found to be effective in Latin America, Asia nor upper middle-income countries. Fourth, investment-related aid is effective but non-investment related aid does seem to be effective as well. Aid targeted to physical infrastructure works as expected but aid given to improve institutions does not.

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Teaching Ridge Regression in Polynomial Data Fitting

The standard linear regression model can be written as $Y=X\beta+\varepsilon$ with uncorrelated zero mean and homoscedastic errors. Here X is a full rank $n \times p$ matrix containing the explanatory variables and the response vector y is $n \times 1$ consisting of the observed data. The Ordinary Least Squared (OLS) estimators are given by $\tilde{\beta}_L = (X'X)^{-1}X'y$ and the Gauss-Markov Theorem states that $\tilde{\beta}_L$ is the best linear unbiased estimator. However, the OLS solutions require that $(X'X)^{-1}$ be accurately computed. If we try to fit a polynomial of too high a degree to a data set, containing noise, using OLS, then $(X'X)^{-1}$ will be numerically difficult to calculate and can lead to very unstable solutions. This paper will use the surrogate estimators of Jensen, D.R. and Ramirez, D.E. (2008) to 'control' the complexity of the model and prevent the polynomial from fitting the noise in the data.

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Monetary Policy Transmission in the Euro Zone

This paper focuses on monetary policy transmission through bank lending in the euro zone. We use a panel Vector Error Correction Model (VECM) of output, prices, short-term and long-term interest rate, bank loans and bank assets. In addition, based on recent concerns of debt sustainability we also include a variable that captures deviation of debt to GDP ratios from the Maastricht Treaty threshold of 60%. We analyze impulse responses and variance decomposition to estimate the monetary policy transmission.

Using quarterly data from 2002 to 2015 for the original twelve members of the euro zone (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain) we find evidence that the euro zone functions as a cohesive unit. We also find the impact of monetary policy on loans is short-lived and conclude that bank lending has a lesser role in monetary policy transmission since the inception of the euro. Finally, our results suggest that large and unsustainable debt burdens do not alter monetary policy transmission for the euro zone-12 countries.

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Macroeconomic Impacts of Universal Basic Income Guarantee

The purpose of this work is to study the macroeconomic impacts of Universal Basic Income Guarantee, namely in inflation and imports, not forgetting to consider inequality tackling from basic income and economic development results from making basic income a reality, through lump-sum transfers.

Employment is increasingly insecure, once economy is now being shaped by increasing rates of technological change that create a new reality. Robotics and Artificial Intelligence may foster the substitution of humans as labor force. A large part of the work now done by humans can be taken over by robots. Therefore, jobs will be lost and it's not clear how many new jobs will be created in this new scenario.

This work assumes that there is an increasingly unequal distribution of wealth. During last years, Capital earnings grew more than Labour earnings, as result of Globalization process and productivity growth, contributing to high unemployment and rising levels of underemployment.

Basic Income will empower people, irrespective of gender, age and preconditions. It will make it easier for people to live according to their own principles, wishes and norms. Not everyone will take advantage of these opportunities, but at least the options are open to everybody. I focus on equilibrium with dynamics in an open economy and the level of transfers and marginal tax rate to study basic income effects, particularly at macroeconomic level. Basic Income reconciles economic efficiency and social security. This work "findings" suggest that macroeconomic impacts of basic income are a powerful social protection tool in fighting poverty and inequality towards a new and rebuilt welfare state. Opponents of basic income proposals dispute its economic, political and social feasibility, question its capacity to address the structural causes of poverty and inequality, and fear that it may entail disincentives to work, reducing the value of each dollar and essentially creating a new zero produce goods and services in the domestic economy in response to aggregate demand arising from consumption and the other forms of expenditure, excess demand for goods would be increasingly met via imports with consequential effects for the exchange rate and the domestic price level, which accentuate the inflationary pressure.

The aim of this work relies on IS/LM impact of expanded C (Consume) and Gross Domestic Product multiplier as consequence of basic income, instead of M monetary offer impact, like those of Quantitative Easing policies impacting LM curve.

So, a consumption multiplier contributes decisively for economic growth, as model testing shows, within this study, it's possible to conclude that Goods and Services market will enter expansionist cycle under basic income distribution policy settled within a monetary zone, once the possibility to make adjustments using Monetary Policy is essential.

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Style of Question Matters: An Experiment with Questions on “Family Related” and “Social” Views on Gender Violence

A perception survey was carried out to find out how people understand or feel about the present situation of gender violence in the two States, namely West Bengal and Meghalaya, in India. The questions were related to ‘family related’ as well as ‘social’ views on gender violence.

Assuming that response to a question depends on the style of question or how the question is framed, we used a novel technique. Two sets of questions on gender violence – Positive and Negative – were prepared and canvassed.

A clear picture emerges from the analysis of data. The respondents hesitate to disagree with a statement even if it is not acceptable to them. Out of 23 questions we got 17 cases with significant difference between believing and expressing. Accordingly, a model is developed to find out the correct proportion of people who think that the statement is acceptable.

The findings, after correcting the bias, were interesting, e.g., 97.2% people were of the opinion that “Women have the right to express their opinion if they disagree with their partner”, and 57.6% thinks that “Physical violence between couples is a private matter and should be handled within the family”. The corresponding values were 94.6% and 63.8% for males and 100% and 53.3% for females respectively. This also shows that there were considerable differences between the acceptability of the statements between males and females.

The designing of questionnaires and conducting the survey, thus, call for a thorough revision. Instead of a single set of questionnaires we should make two sets – one positive and one negative and canvass the two sets to

two independent samples in the population. The model, devised in this paper, can then be used to estimate the exact proportion of persons who accept the statement.

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Black and Hispanic Entrepreneurship: Customer Orientation and Perceived Business Performance

In countries all over the world entrepreneurs are increasing in numbers and market impact. Individuals become entrepreneurs for any number of reasons, from a natural business orientation toward repeat start-ups, to the necessity of integrating into society due to migration, to the difficulty of finding satisfactory employment. Whatever the reason, increasingly entrepreneurs in the United States are from minority groups such as Blacks and Hispanics.

This empirical research focused on a comparison of Black versus Hispanic entrepreneurs (all of whom started their business). Following a well-developed and scientifically designed multi-tiered research methodology, a population-proportionate sample of 915 Black and 2,672 Hispanic entrepreneurs in Texas (USA) were surveyed by means of a mailed questionnaire. Blacks were more likely than Hispanics to have a corporate legal structure (74% versus 56%), whereas Hispanics were more likely than Blacks to have a partnership legal structure (36% versus 23%). Demographically, the Black entrepreneurs surveyed were more highly educated than the Hispanic entrepreneurs surveyed (67% of the surveyed Blacks were college graduates versus 42% of the surveyed Hispanics). Twenty percent of the Hispanics surveyed had no college versus 10% of the Blacks surveyed. The age distributions of the two groups were relatively similar.

The focus of the present research was on the relative customer orientations of the Black and Hispanic entrepreneurs surveyed, that is, whether they possessed an “enclave” or a “dominant market” orientation. Many minority entrepreneurs orient their firm’s marketing toward individuals in their particular minority group. This orientation is important because it often links with the characteristics of employees and may foreshadow the possibility for future business growth and development.

The customer orientation of the two groups differed. Black entrepreneurs were more likely to focus on a Black customer base (49% primarily Black customers) than were Hispanics (25% primarily Hispanic customers). At the same time, 14% of the Black entrepreneurs reported that their employees were primarily Black, whereas 66% of the Hispanic

entrepreneurs reported that their employees were primarily Hispanic. Moreover, Black and Hispanic entrepreneurs possessed significantly different perceptions of their respective firms' business performance. In particular, Hispanic entrepreneurs had more positive perceptions of their firms' business performance than did Black entrepreneurs. The research findings demonstrate important cultural orientation differences between the two groups and have implications for marketing practice, marketing theory, public policy, and future research directions.

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The Interrelation of Maximum Employment and Sectoral Productivity in Manufacturing

According to the three-sector hypothesis, the national share of employees in the industrial sector, more specifically in manufacturing, will be shrinking after reaching a specific peak level of relative employment. When assuming continuously rising welfare of a country, its income per capita should rise continuously. So, in line with societal development over time, the tipping point at which deindustrialization starts should be related to income per capita. In this context, Rowthorn (1994) predicted an inverted-U relationship between income per capita and the share of manufacturing in employment. By regression analysis, he calculated the tipping point at which deindustrialization starts.

In this work, Rowthorn's theory was tested on a sample of 12 countries qualified as mature, i.e. having reached their maximum employment in manufacturing by 1980. It was also applied on 25 'pre-mature' countries, i.e. countries before the transition point at the same time.

It was found that Rowthorn's original theory needs to be modified. Manufacturing productivity was identified as the key driver and indicator for success of the manufacturing sector. In accordance with Rowthorn's theory, it was found that the country-specific maximum in relative employment in manufacturing is reached at a certain threshold productivity. Unlike his prediction, there is no single standard function for all economies, but two functions separated by the international division of labour. These functions are two linear functions of critical manufacturing productivity, i.e. the productivity achieved when reaching maximum sectoral employment, over time, related to mature and emerging economies, respectively.

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Teaching Specialist versus non-Specialist Students in Statistics

It is the educators' responsibility to have a significant impact in shaping the forward thinking not only of the specialist but also of the non-specialist students in a discipline. Experience suggests that dependent on the students' background different teaching methods should be applied. We investigate the main differences among students who study Statistics at an introductory level under different degree programmes. We, however, identify also the specific similarities in students' attitudes towards learning as this is reflected via motivation towards the subject and achievement.

One of our aims is to identify how potentially teaching service courses in Statistics can positively improve the educational processes in teaching specialist courses in Statistics and vice-versa. Among others we need to address some of the notable challenges related to teaching and learning Statistics to non-specialists and to explore the ways to introduce and gradually develop a statistical oriented mind-set. Can these ways also enhance the specialist students' educational experience? Can furthermore educational technologies improve the experiences of both educators and students and assist towards communication beyond the narrow classroom borders? These will be some of the questions we aim to address.

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**A Hedonic Price Analysis for the Portuguese Wine Market:
Does the Distribution Channel Matters?**

Portuguese wine is doing well both domestically and internationally. Portuguese consumers are becoming increasingly sensitive to the quality and relevance of the domestic wine industry, which has received significant media and government attention in terms of promotion. The often referred to increased quality of Portuguese wine is evident through the volume and mostly value growth of certified wines, either Protected Designation Origin (PDO) or Protected Geographical Indication (PGI), as opposed to the significant increase in volume but decline in value of non-certified wines in recent years.

Price is a key factor when buying wine. Typically the behavior of the price wine is analyzed using the hedonic pricing model based upon Lancaster's characteristics approach that relates the price of a good to its various attributes or characteristics. The principal theoretical foundation for hedonic price function (HPF) studies rests with Rosen's (1974) pure competition model for differentiated products, that is, market demand and supply for attributes interact to determine implicit marginal market attribute prices.

Empirical application of the hedonic theory in the wine sector started in the early 1990s, pioneered by Golan and Shalit (1993) and Oczkowski (1994). Generally speaking, three main types of variables emerge in the specification of these models. A first basic category involves the so-called objective attributes, such as color, vintage year, region or grape variety, which usually appear on the label and therefore are easy to identify. The two remaining sets of variables relate to wine quality. They stress the importance of the sensorial wine attributes, such as aroma, finish or harmony components, based on expert opinions, and the reputation of wines and producers among consumers, including collective reputation.

Different papers show that price is strongly explained by the objective attributes appearing on the label of the bottle, such as Oczkowski (1994), Combris, Lecocq and Visser (1997, 2000), Angulo et al (2000) Luppe and Angelo (2005), Haeger and Storchmann (2006), Lecocq and Visser (2006), San Martin, Troncoso and Brummer (2008). Additionally, Benfratello, Piacenza and Sachetto (2009), employing a general Box-Cox transformation within the context of a hedonic model for Italian premium wines Barolo and Barbaresco, Lester et al (2011), using a semiparametric model for Ontario wines, Apostolakis et al (2015), examing the effects of wine attributes on wine prices in the UK wine market, and Asgari, Woods and Saghaian (2016), for Riesling wine in the U.S. market reinforced these conclusions.

The influence of wine expert raters/sensorial wine characteristics is seen of great importance in determining wine quality, but as for the role of sensorial variables in price formation the evidence from the literature is inconclusive. While some authors such as Jones and Storchamann (2001), Schammel and Anderson (2003), Ling and Lockshin (2003). Dubois and Nauges (2007), Benfratello, Piacenza and Sachetto (2009), Hadj Ali, Lecocq and Visser (2010); Caldas and Rebelo (2013), Oczkowski (2016), Ashton (2016) and Asgari, Ali, Reed, M. (2016) showed a significant impact of these variables on wine prices, others such Haeger and Storchamn (2006) and Lecocq and Visser (2006) pointed out that sensorial variables have a poor relevance on prices or, as suggested by Oczkowski and Doucouliagos (2014), a moderate one.

The reputation literature provides additional and relevant insights and conclusions on the impact of reputation on wine prices and consumer's choices. Landon and Smith (1997, 1998), using data from a market for Bordeaux wines, showed that both individual and collective reputation explain a substantial part of price variation and that the long-term reputation is considerably for important than short-term quality improvement. Subsequent works of Schamel (2000, 2009), Oczkowski (2001), Ling. and Lockshin (2003), Castriota and Delamastro (2008, 2009), Benfratello, Piacenza and Sachetto (2009), Frick (2010), and Gerguard and Livat (2010) also support the presence of significant reputation effects. More recently, Oczkowski and Doucouliagos (2014), using a meta-regression analysis, demonstrated the relative importance of a wine's reputation over its sensory quality, inferring that producers need to sustain the sensory quality of wine over time to extract appropriate returns.

In the case of Portugal, Viana and Rodrigues (2007), drawing on a sample of 14,000 observations from the largest Port wine firms, found that the brand/ type of Port and producer's reputation are significant determinants of wine prices. Ribeiro and Santos (2008), using a a supermarket/ wholesaler survey, showed that the dominant factor influencing the acquisition of wine is the region of origin. Additionally, Panzone and Simões (2009), using online data from a large retailer in Portugal, were able to identify the regional

premiums for the Portuguese wines in the internal market. Furthermore, they found that PDO labelling is not a factor attracting a price premium per se, but rather that it is in the interaction between the PDO and the region of production that actually gives a premium. Their results show evidence of premium discrimination depending on the reputation of the region of origin.

In parallel with the changes occurred in consumption patterns significant changes have also occurred in the patterns of wine distribution, resulting in market distribution segmentation. Different market segments demand different approaches. In general the wines of lower price segments are concentrated in hyper, supermarkets and discount stores (grocery retailing), while the higher segments are marketed at on-trade and in specialist shops. Consumer prices are influenced by the number of agents involved along the circuit. In general, and in the Portuguese case, the supermarkets and supercenters buy directly wine to the wine companies, securing a margin ranging between 15:30%, while the specialized retail stores purchase wine through an agent or a wholesaler, causing a double mark-up which leads the ex-cellar price to be multiplied typically by 1.56 (assuming a 25% margin for each of the players), plus taxes. Later, Caldas and Rebelo (2013) found, for 11 wine production regions of Portugal, that there is a positive correlation between the different expert scores and prices, and that the region of origin positively influences both these scores and prices.

The main objective of this paper is to test for differences in price determinants, according to the market distribution circuit used. In terms of structure, in addition to the Introduction, the paper provides a review of the literature on the hedonic price function, which follows a brief characterization of the Portuguese wine, market data, estimation methods and results. It ends with some conclusions.

To estimate the hedonic price function, data was collected considering the Portuguese retail prices, for red and white wines, of two distribution channels: (1) data from a specialist retailer shop “Garrafeira Nacional” (www.garrafeiranacional.com, on 24th November, 2017), that sells both directly to the consumer and online, and (2) data from a large supermarket chain with shops spread all over Portugal named “Continente” (on 3rd January 2018); 1722 and 725 price observations were gathered, respectively, in euros, for 750 ml bottles. The former addresses a market segment of low wine volume and higher prices, while the latter is concerned with high volume and lower wine prices.

The model assumes that the price of a particular wine is a function of both objective attributes, appearing on the label of the bottle: wine region of origin (regional dummies to include Douro, Vinhos Verdes, Alentejo or other), alcohol content, wine age, color (color dummy for Red or White/Rosé), producer type (cooperative vs private firm), and wine category (Reserva/Grande Reserva or other), and sensorial attributes, based on expert opinions, expressed by the variable wine’s awards or medals.

A natural log transformation is applied. The results of the estimated regressions, corrected for heteroskedasticity, show that there are a structural and statistically significant differences between the two distribution channels. However, the difference is not in the signal associated to the regression parameter, but in the coefficient magnitude, both in value and statistical significance. In both distribution channels the results show that the wine price is positively and statistically determined by the alcohol content, wine age and being from Douro region. In the specific case the specialist shop, the price is also determined by the color of wine and by the awards or medals, the latter being the most influential attribute in the formation of wine price. In the case of the large distributor the wine category shows relevance in the price formation when compared with the other channel. The origin from “Vinhos Verdes” region is the most relevant attribute in the price formation in the hypermarket supply. The producer type is also important; results show that the price of a wine bottle of a cooperative winery is, on average, less than that of wines from other producers.

Future research should be extended to other countries and include other wine attributes in order to test whether there are different wine markets or a single market for wine. This is an important issue for a better adjustment between supply and demand.

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&

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Factors to Purchase Luxury Brands: Chanel Brand Case

This study proposes investigate and empirically tests the buying behavior of consumers Chanel brand, considering that the luxury brands involving strong consumer brand relationship. To create that strong brand relationship, brand management should take into account aspects such as brand coherence, brand prestige, brand distinctiveness and brand attractiveness.

For the present study a quantitative methodology was fallow with data collected through an online survey on perceptions of customers of Chanel brand. The data were collected from 232 respondents to test the proposed hypotheses. Data were analysed through a logistic regression of the probability of buying Chanel considering socio-demographic variables, brand coherence, brand prestige, brand distinctiveness and brand attractiveness.

From the results obtained it was found that the variables that affect the likelihood of purchase Chanel brand are the prestige of brand and the brand attractiveness. The socio-demographic variables did not show statistically significant in explaining the likelihood of brand purchase, except the monthly income. This paper demonstrates the importance of the subject, since consumers respond by a buying behaviour if there are a strong brand relationship and recognized her prestige and attractiveness.

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Optimal Pricing of Deposit Insurance: Aiming at Fairness and Stability

Deposit insurance has two main objectives: at the micro-level, it should protect small depositors against the failure of their bank and at the macro-level it should contribute to the stability of the financial system and the economy as a whole. To have the appropriate resources to achieve their mission, deposit insurers collect premiums from insured banks to build a so-called ex-ante fund. Setting an optimal pricing scheme is a challenge. On one hand, it should be fair, that is correctly adjusting for the risk of each bank and on the other hand it should be consistent with the stability objective, which implies avoiding pro-cyclicality. Up to now, two main pricing schemes have been used: fixed rate pricing and risk adjusted rate pricing. Our analysis shows that none achieves both goals satisfactorily. Fixed rate pricing is not pro-cyclical but it is somewhat unfair as it does not adjust for risk. Risk adjusted rates are fair but are pro-cyclical. This paper proposes a new approach based on relative risk that reconciles both objectives. Relative risk is defined as the difference between the risk measure of a bank and the weighted risk measure of the banking sector. A numerical example illustrates the working of the new approach and shows that it adjusts for risk and avoids pro-cyclicality while allowing the deposit insurer to accumulate the same revenues over the cycle. Finally, the materiality of the problem of pro-cyclicality and the performance in terms of effectiveness and efficiency of the proposed model are discussed.

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Evaluating the Performance of Marketing Student Interns: Quantitative and Qualitative Measurement Issues

As the perceived importance and value of student internships has grown considerably, methods used to measure student interns' performance have become the subject of greater focus. The present study examines the effectiveness of a particular measurement scale used by on-site supervisors to evaluate student interns. The sample for this study consisted of over 100 marketing interns from an American college in the Northeast US working in a large variety of business settings.

An evaluation measure used by supervisors was designed to assess the interns' performance on the following dimensions: interpersonal skills, communications skills, critical thinking skills, problem-solving skills, ability to work independently, willingness to take initiative, time management skills, quality of deliverables, and professionalism in behavior. In addition, supervisors provided a rating of the intern's "overall" performance. Finally, supervisors were asked to provide written comments on the intern's performance, which served as a qualitative measure.

The analysis of the results focuses on the relationship between the "overall" performance ratings (measured on a 10-point scale), and the ratings for the individual scale items. The "overall" performance ratings were also compared with the supervisor responses on the qualitative measure. A preliminary analysis of the results suggests a strong correlation between the "overall" rating and certain scale items. Of particular interest is a somewhat weak correlation that emerged between the "overall" rating and the qualitative measure. Several important explanations for these results will be discussed. The research points to problems and potential solutions for the evaluation of student interns.

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Identity and Perception of Risk for Entrepreneurs: Lessons from an Industrially Less Developed State in India

Identity matters for entrepreneurship in business environments marked by financial market imperfections. In the absence of formal finance, much of the economics literature on entrepreneurship focuses on the interplay of moral hazard and limited liability in explaining outcomes. However, this formulation of the problem bypasses a discussion of how entrepreneurial identity informs her perception of business prospects. While a recent branch of the literature has introduced the importance of social networks in enabling access to finance in developing countries, it does not address the trade-off that an entrepreneur faces in developing an “identity” by belonging to a particular region or place. While membership might provide access to finance and information about markets, it might also have a negative value as the literature on the strength of personal ties and innovation mentions (Granovetter, 1973). This paper addresses the trade-offs in identity formation (which is created naturally by being a native member of a region) and its impact on the risk perception of entrepreneurs in the context of an industrially backward region. While the empirical results of the paper are drawn from a primary survey in the state of Bihar, India conducted in 2016 through snowball sampling for food processing industries, the results generalize to any context of entrepreneurial identity in the background of a low industrial base. Drawing insights from enterprise ecology and the literature on policy networks, we find that financial market imperfections, political interference in lending to businesses and high credit constraints have a combined negative impact the relationship between “identity” and risk perception: in the sense that (i) indigenous (particularly first generation) entrepreneurs find their “belongingness” to the state as a sunk cost, rather than an asset in understanding the regional market and accessing loans and (ii) a positive association between high risk perception and the regret that an entrepreneur has from the sunk cost of indigenous identity. What strengthens our understanding of the trade-offs in identity creation is that experience of the entrepreneur mitigates the perception of risk, which naturally leads towards a theory of entrepreneurial ability (as mimicked by experience) with ingrained cut-offs: above a certain ability threshold of ability, the identity cost might be mitigated. The clear policy lesson from this exercise is that public policy initiatives in entrepreneurial learning and some degree of tolerance for business failure would aid in the development of successful entrepreneurship, even in the face of an inclement business and financial environment.

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A Predictive Approach for Monitoring Multiple Outcomes in Phase II Clinical Trials

Most phase II trials are designed as one-arm studies based on a binary endpoint of interest, that represents treatment efficacy. Monitoring strategies can be adopted to perform interim evaluations before data collection has been completed. The essential aim is to ensure early termination of the trial if the experimental treatment is unlikely to provide the desired level of efficacy.

Although phase II trials are mainly focused on evaluation of efficacy, many authors consider more ethical and informative to gather also information about toxicity during this phase.

In this paper, we present Bayesian monitoring rules for single-arm phase II trials based on posterior predictive probabilities, that jointly consider both binary efficacy and toxicity endpoints. At any interim stage, given the current data and the prior distribution, the Dirichlet-Multinomial distribution provides the predictive probability of each possible combination of future efficacy and toxicity outcomes. It is exploited to compute the predictive probability that the trial will yield a positive outcome, if it continues to the planned end. Stopping rules based on this predictive probability are examined as the critical boundaries vary and under different scenarios.

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Survival of Failed SMEs and Out-of-Court vs in-Court Reorganization: Explanatory Internal Factors

Drawing on resource-based formulations, we analyse the internal factors that contribute to explain the different outcome between SMEs when they suffer a failure situation. In doing so, we have used a sample of 6,285 unsuccessful Spanish SMEs in the period 2008-2010 and observing the evolution of the firm during the period 2011-2013. We investigated a simple accounting-based framework that allowed us to achieve two objectives: (1) to identify the different characteristics of failure firms that are reorganized finally instead of liquidated, allowing a diagnosis of the economic and financial firm situation in order to prevent its disappearance; and, (2) to recognize different internal characteristics between out-of-court or in-court reorganized firms. Our investigation lends further support to the call for more studies that analyse heterogeneity among SMEs behaviour, in particular, in critical environments. Particularly, our results reveal that the ability of the firm to create value, to management the receivable and working capital financial design and the level of historical slacks contribute to understand the differences between SMEs that are able to overcome difficult situations and survive of those that are liquidated. In addition, our results also reveal that the level of assets and debts is the main difference among firms that choice an out-of-court reorganization.

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Teaching Principles of Economics On-Line: Structured Course vs. Self-Paced Mode. An Empirical Study

There are many issues and challenges associated with online Principles of Macroeconomics and Principle of Microeconomics courses. One of them is a choice between self-paced and structured delivery modes. It is well known that distance learning is popular among working adults who try to overcome time constraints by making their learning experience as individualized as it possible. From this perspective, students are expected to prefer self-paced delivery option. However, some distinctive features of the Principles courses suggest that for the better student learning outcomes the structured approach could be more effective and desirable. During 2012-2017, an empirical study has been conducted among the student population of the Greater New Orleans Area. The findings of that study are detailed and discussed in this paper.

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Competence-Willingness Model and Inheritance Strategy of Chinese Family Business

Intergenerational succession is a big problem for the Chinese family business. In the next few years, China will usher in the peak of family business heritage. However, the existing literatures focus mainly on the status quo of family business and the impact of the organizational level on the business while the research on the inheritance models from successor level is not enough, and there is no unified framework and conclusion. Therefore, we interviewed 8 Chinese family firms based on the grounded theory, aiming to enrich existing research. The results indicate that the lack of succession planning, ignoring the core elements of inheritance and the limits of family values are the main problems in the process of Chinese family business heritage. Through the analysis of affecting factors from the perspectives of successor, incumbent and the organization, it finds that the inheriting willingness and the comprehensive ability of the successor are the two biggest and most direct impact on the family business succession. As a result, the research establishes a model from these two perspectives of the comprehensive ability and the succession will of a successor, and discusses the different inheritance strategies under different models. In addition, the paper also puts forward the shortcomings in the research, and proposes the future prospect of the research on the intergenerational inheritance of the Chinese family businesses.

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Open User Innovation and Systemic Marketing Approach: Convergence Points

Open user innovation and systemic approach to marketing has the potential to contribute theoretically each other. This theoretical essay seeks to possible points of convergence of the two theories exploring the theoretical bases of the two approaches. It appears that the approaches see businesses as open systems and show the importance of interaction with the user to create value.

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Antecedents and Consequences of E-Commerce Adoption for SMEs

The aim of this research is to study the antecedents and consequences of e-commerce adoption by small and medium enterprises (SMEs) operating in the retail sector in the United Kingdom. The research was based on a modified UTAUT framework, incorporating existing IT resources and knowledge. The research consisted of a quantitative survey of small and medium enterprises (SMEs), which measured intention to adopt e-commerce and its outcomes. Data collection for the study was conducted using a questionnaire distributed to business officers or principles of SMEs in the United Kingdom. A survey of retail SMEs in different stages of technology adoption (n = 89) was analysed using structural equation modelling (SEM). Results showed that performance expectancy and effort expectancy, along with facilitating conditions, contributed to e-commerce adoption. However, social influence did not have a significant influence. The implication of the research is that education about e-commerce benefits, risks, and required resources could assist in technology adoption. This research provides support for further research into the use of e-commerce by SMEs. The study also supports further use and development of the UTAUT, which although theoretically accepted has been applied in empirical research relatively infrequently.

Gerhard Speckbacher

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Using Commercial Success for Evaluating Creative Teams: The Importance of Leadership

Organizations frequently use teams for creative problem solving. Evaluating the performance of creatives based on accounting data, such as client satisfaction measures, reject rates, revenues, or profits helps team leaders direct their team's creative efforts towards results that are valuable for the organization. However, the use of such performance evaluations has been charged with undermining the team's creative atmosphere. Drawing on research on teams and team leadership, we propose that a team leader's use of accounting data in performance evaluation negatively affects team potency, that is, the team's trust in its own capabilities, which is itself a driver of team creativity. This negative effect disappears or can even turn positive when the team leader exhibits a transformational team leadership style. We provide evidence for our proposed model using data collected at three levels (372 individual responses, 101 teams, and 53 marketing and advertising agencies).

Codruta Simona Stoica

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On Stochastic Splitting Issues for Evolution Equations

In many cases, the modeling of the real world phenomena by means of evolution equations has to combine the classic deterministic study with stochastic methods. Approaching the evolution equations by means of stochastic cocycles allows obtaining answers to many issues by involving techniques of stochastic analysis.

This paper aims to define a general framework for the exponential splitting in mean square for stochastic cocycles that includes, as a particular case, the exponential dichotomy. We study the problem of how to generalize the notion of exponential dichotomy to evolution equations with solutions only assumed to exist in forward time. We consider general splitting behaviors that consist in assuming the existence of decomposition into invariant subspaces where the norms of the evolution trajectories are bounded by functions depending on the initial and final times.

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New 3-Level Designs for Full Second Order Models

Design of experiments is a big field of statistical science and has many applications in a number of different areas. Design of experiments is often used in social sciences. Traditional designs have been developed many years ago and still have applications in gathering data and selecting the sample space. In a first stage of experimentation a researcher is usually looking to screen out the dominant factors that may influence a process or a response. This approach is well known as screening process and the designs that are used are called screening designs. The main aim of screening designs is to optimize the cost of the experiment and to improve the quality of the model that will be fitted in a second stage. Screening designs can be very useful in conducting the needed experiments in psychological setups. Screening experiments require follow up experiments and further experimentation to build a better, more complicated statistical model for our data.

In this work we briefly introduced some traditional screening designs and present their properties. In the sequence we present new designs, approaches and methodologies (such as the definitive screening designs) that were developed the last few years and have additional good fitting properties for building good statistical models for our data. Advantages and disadvantages of the new designs are presented and discussed.

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The Effect of Allocative Efficiency of Free Markets on Entropy and its Implications on Taxes

This article shows that the entropy in a free market is maximized under the allocative efficiency condition. In contrast to that, it is shown that any pre-determined allocation, such as collection and distribution of taxes, exhibits a lower probability of maximizing the entropy in the system, where the loss in entropy corresponds to the deadweight loss caused by the excess burden of taxation. The implications are that any chaotic system, or exchange economy, converges to an optimal structure of wealth distribution which maximizes social welfare, whereas a randomly determined distribution of wealth does not maximize society's welfare.

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&

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A Ratio-Difference Theory of Choice and Decision

We humans are boundedly rational in that we find it difficult to comprehend one magnitude without comparing two magnitudes. When comparing two magnitudes, people tend to use ratios and differences. A “ratio-difference” theory of decision-making is presented here. It is shown that both a deterministic choice theory a decision theory under uncertainty can be reconstructed upon the foundation that people compare using ratios and differences. Standard conclusions can be obtained from the reconstructions. However, some recognized decision anomalies can also be explained.

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Understanding the Business-Government Relationship in Chile under an Economic Booming and Social Unrest Scenario: 2000-2015

According to the World Bank, Chile showed a good economic performance between 2000 and 2015, with an average annual rate of GDP growth of 3.92% (World Bank, 2015). Factors like the 1980 Constitution, trade liberalization, structural reorganization of the state and privatizations were fundamental in the economic booming of the Latin American country.

Economic growth contributed to a reduction of the unemployment, which turned from 9.20% in 2000 to 6.40% in 2015 (World Bank, 2015). There was a slight improvement in social indicators, such as a reduction in the poverty incidence rate of 2.09% per year during the period 2000-2013. However, by 2015, inequality continued to be one of the major social problems of Chile (World Bank, 2015). Chile showed an excess of wealth concentration within the Metropolitan Region of Santiago de Chile (Atienza & Aroca, 2012) which represented 45.62% of the Chilean GDP in 2015 (Banco Central de Chile, 2013). However, how did this growth translate into employment? Its industrial structure showed a trend towards more developed sectors such as services or commerce, which generated expectations of higher wages for workers. However, Chile "[was] far from achieving the reality of decent work as a national standard" (Gerlach Mora, 2010).

Social conflicts continued despite the economic booming. On one hand, there was a high school student movement called "*Los Pinguinos*" which demanded for a more inclusive and better education. On the other hand, a social movement "*No más AFP*" led by senior citizens who requested for a more dignified pension system. According to Garretón & Garretón, "Chile [was] facing an incomplete democracy". This paradoxical situation of managing economic growth under social unrest could be explained for the particular business-government relationship in Chile.

This paper argues that the business-government relationship in Chile during 2000-2015 was unable to reinvent itself. This is because the legacies of the past weighed strongly in the structure and *modus operandi* of the bureaucracy and private sector which impeded to take advantage of the economic booming in order to carry out public and business sectors reforms during 2000-2015 (Vásquez, 2017). On the one hand, the structure of the public administration and business sector were unable to close the social gaps (Bitar, 2016). On the other hand, the *modus operandi* of the public administration and business sector showed a lack of public-private

coordination among the different levels of government and within the different hierarchies (NU.CEPAL, ILPES, 2013). The outcome of these shortages of the business-government relationship and cases of corruption (Ferreira & Martins, 2014) disappointed citizens and mainly to the poorest. Thus the business-government relationship was unable to reinvent an effective state (Bebbington, 2013; Hickey, 2013) and set up a sustainable and inclusive development as it was intended in other regions (Yanguas, 2017).

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Forecasting Time Series using Stepwise Common Singular Spectrum Analysis or Horizontal Multi-channel Singular Spectrum Analysis?

Two multivariate extensions of Singular Spectrum Analysis (SSA) were considered in terms of the forecast error namely, Horizontal Multi-channel SSA (H-MSSA) and Stepwise Common SSA (Stepwise CSSA). The recurrent forecasting procedure was used for both methods. In a simulation study different signal structures, defined in terms of trend, period, amplitude and phase, were investigated. The largest difference between the methods were found when different trends were considered. Horizontal MSSA was outperformed in these cases. A practical example is discussed.

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Estimating the Proportion from the Null using a Distribution for p-Values in Massive Testing

Microarray studies generate a large number of p-values from many gene expression comparisons. The estimate of the proportion of the p-values sampled from the null hypothesis draws a broad interest. The two-component mixture model is often used to estimate this proportion. If the data are generated under the null hypothesis, the p-values follow the uniform distribution. What is the distribution of p-values when data are sampled from the alternative hypothesis? This work derives this distribution for the chi-squared test. We then use this distribution to estimate the proportion of p-values sampled from the null hypothesis in a parametric framework.

Simulation studies are conducted to evaluate its performance in comparison with five recent methods. Even in scenarios with clusters of correlated p-values and a multicomponent mixture or a continuous mixture in the alternative, our method performs robustly. We demonstrate our method on a real microarray dataset.

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Dynamic, Individualised Pricing and Customer Loyalty in the Swiss Retail Market: Chances and Risks

Individualized dynamic pricing is a flexible pricing strategy. The supplier defines flexible prices using machine learning algorithms and information extracted from big data. Factors taken into consideration include supply and demand, competition, time and customer profile. Pricing is individualized by grouping customers into segments based on their purchasing behaviour, loyalty, demographic characteristics and price demand elasticity. Loyal customers are identified and rewarded with discounts and special offers. This is achieved via a network of in-store dynamic price tags placed at the edge of a store's shelves. The customer's personal loyalty card data is stored on the mobile phone. The mobile phone interfaces with the price tag to dynamically change the price of the item. Individualized dynamic pricing leverages on the increasing popularity of in-store smart phone use. Customers typically use a device to scan QR codes and compare prices. While dynamic pricing has numerous benefits, there are also risks. One is that price differentiation may not seem fair to customers paying full price. Acceptance of dynamic pricing and whether it leads to an increase in loyalty are largely unexplored. Furthermore, the technical requirements are burdensome.

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&

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Improved Predictive Modeling of Wood Composite Products using Bayesian Additive Regression Trees (BART)

This study presents an ensemble of predictive models with a focus on the predictive capabilities of Bayesian Additive Regression Trees (BART). Predictions are made for Modulus of Rupture (MOR) and Tensile Strength (IB or Internal Bond) from a wood composites manufacturing process for three product types. Given the large number of predictor variables from the process, variable preselection was used prior to model development. Several regression methods including multiple linear regression, partial least squares regression, neural networks, regression trees, boosted trees, and bootstrap forest are compared with BART. BART had the best predictive performance in validation unanimously for both MOR and IB for all three products examined. Bootstrap forest validation results were very similar to BART for one of the products. BART validation results of MOR were promising for the nominal product type of 19.05 mm with an 0.89 for 10-fold cross validation with root mean square error of prediction (NRMSEP) of 10.26%. BART validation results for IB had an average 0.84 for 10-fold cross-validation with a NRMSEP = 10.82%. The high predictive ability of BART may be useful for manufacturers and researchers in applying analytical techniques for process improvement leading to less rework (order reruns due to failing properties) and reject. Predictive modeling techniques like the ones explored in this study may be very important to companies seeking competitive advantage in today's business world that is focused on advanced analytics and data mining.

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&

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The “Not so Simple” Interpretation of R^2 , for Relatively Small Sample Sizes

There are several misconceptions when interpreting the values of the coefficient of determination, R^2 , in simple linear regression. R^2 is heavily dependent on the sample size n and it becomes insignificant when analyzing very large sample sizes. In this paper, we comment on these observations and develop a relationship between the R^2 , n , and the level of significance α , for relatively small sample sizes. This relationship will serve as a way to provide consistent results with the hypothesis testing of the slope, using the F statistic. Computational results will be performed. The focus of the paper is on the simple linear regression.

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"Buy n Times, get one Free" Loyalty Programs: An Analytical Investigation of their Profitability

Loyalty programs (LPs) are prevalent marketing tools that encourage repurchase intentions among customers by rewarding them to increase long-term profitability of firms. However, there is no consensus among researchers regarding the effectiveness of some features of these programs in a competitive environment. This research provides a preliminary understanding of the effects of some customers' behavioural factors on the design of loyalty programs, in particular restricting the redemption policy.

This study particularly evaluates whether firms offering LPs should choose a restricted redemption policy by imposing a specific number of purchases before customers can redeem their points. Such restriction is commonly offered in form of 'buy n times, get one free' programs, while LPs with unrestricted redemption policy provide rewards in form of a price discount to their customers that can be redeemed as soon as the next purchase. The restricted 'buy n times, get one free' LPs are commonly used in a variety of industries characterized by uniform pricing, e.g., coffee shops, where LPs can help increase the possibility of repeat customer purchase.

The motivation for this research is the lack of clear guidance in the literature about the impact of such restrictions and the observation in practice of different restricted and unrestricted LP programs offered by competing firms. We develop a Multinomial logit model where consumer's utility depends on the value of the product and of the rewards. Using an iterative algorithm, we numerically solve a Nash game for two firms offering loyalty programs. Optimal strategies and profits are obtained for three different scenarios (games):

- (1) both firms do not restrict redemption,
- (2) both firms restrict redemption; and
- (3) only one firm restricts redemption while the other firm does not.

Our main findings indicate that each firm's optimal strategies are significantly affected by whether the competitor decides to restrict or not to restrict redemption. For example, a firm that restricts reward

redemption should offer a higher price if its competitor also restricts redemption. Further, the dominant strategy of the game depends on customers' valuations of time and rewards. In particular, both firms should not restrict their reward redemption, i.e., should allow their customers to redeem their earned rewards at the next purchasing occasion when customers do not highly value rewards and are willing to wait to redeem their earned rewards (i.e., have low time valuation). Under such conditions, the competing firms gain a lower income but pay lower rewards to consumers with unrestricted reward policy than with a restricted one, which ultimately results in higher profits when reward redemption restrictions are lifted.

We also find that unrestricted redemption is still the Nash equilibrium when customer valuation of time and rewards are slightly higher. However, in this case, the competing firms face a prisoner's dilemma situation with each firm earning a higher profit by restricting redemption while the competitor does not. This is because when both firms restrict redemption, they earn lower income levels and incur lower reward costs than when they both restrict redemption, leading to overall lower profits. Finally, when customers highly value reward but not time, both firms should restrict redemption at equilibrium, mainly because they both earn higher income levels and the gains in income exceed the additional incurred cost of rewards.