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PROCEEDINGS(Abstract Version)

SOI & Swansea University 2022 Conference

Digital Transformation: New Directions for the World Economy, Financial Systems and Business Models

July 6(Wed.) ~ 9(Sat.), Conference Days, 2022
Swansea University(Faraday Building, Singleton Park Campus), Wales, UK & Online(Zoom)
***July 4(Mon.) ~ 5(Tue.), Open Innovation Academy of SOI 2022 Summer School**

Society of Open Innovation: Technology, Market, and Complexity (SOI) & Swansea University 2022

The full version(about 4000 papges) of proceeding can be downloaded in SOI homepage from July 31, 2022.
*Only the SOI 2022 participants with registration could download the proceedings after logging in.

• ***Organized by Society of Open Innovation:*** *Technology, Market, and Complexity* ***(SOI)***

• ***Hosted by Swansea University, Wales, UK***

• ***Sponsored by***

Swansea University Prifysgol Abertawe DGIST

• ***July 6(Wed.) ~ 9(Sat.), Conference Days, 2022, Swansea University(Faraday Building, Singleton Park Campus), Wales, UK & Online(Zoom)***

* July 4(Mon.) ~ 5(Tue.), Open Innovation Academy of SOI 2022 Summer School

Swansea University Prifysgol Abertawe

Society of Open Innovation Technology, Market & Complexity

DGIST

PROGRAMME OF

SOI & Swansea University 2022 Conference

Digital Transformation: New Directions for the World Economy, Financial Systems and Business Models

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Society of Open Innovation: Technology, Market, and Complexity (SOI) & Swansea University 2022

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■ July 09(Saturday) 09:00~10:30 Faraday Room C

■ July 09(Saturday) 09:00~10:30 Faraday Room D

Welcoming Speech by the Organizing President of SOI

-Prof. Dr. JinHyo Joseph Yun

Dear my honor professors and SOI 2022 keynote speakers, and SOI members.

Thank you for your joining at SOI 2022 conference. Welcome, Welcome, and Welcome.

We are all here to present, discuss, and exchange our own creative ideas on "Digital Transformation; New Direction for the World Economy, Financial Systems, and Business Models".

Honor Professor Philip Cooke, Ulrich Witt, Fred Phillips, Venni Krishna, Andreas Pyka, Yang, Bo, Kwangho Jung, and my long-time professors, researchers, and colleagues, we are here at Swansea university in Wales, UK after two years of online conferences including SOI & Riga Technical University 2021, and SOI & Oklahoma State University 2020. We Congratulate to ourselves for our coming back to the SOI offline conference again.

Thanks a lot, to the hosting chair, Professor Yang Bo, and all friends from university of Swansea colleagues for hosting, preparing, and joining at this fantastic conference. And, I appreciate to Professor Zheng Liu, the professor of Cardiff Metropolitan University for connecting the organizing team of DGIST, and hosting team of Swansea University for last nearly 2 years.

Nearly 160 papers from more than 110 universities or research institutes in about 18 countries will be presented at SOI 2022. Thanks to all presenters and discussers at SOI 2022 especially for your originatic ideas which could contribute to prepare the new directions in Digital Transformation.

T.S. Eliot singed as follows in his poem "Four Quarters".

In other to arrive at what you do not know

You must go by a way which is the way of ignorance. (Among "Four Quartets" by T.S. Eliot)

We must take a road which is 'grassy and wanted wear (Among *"The Road not Take"* by Robert Frost) to arrive a new economy with digital transformation.

Fortunately, we had a chance to faintly see the world which will be come true after digital transformation last 2 years during the Pandemic.

Let us cross the river of ignorance which is from digital transformation with the beacon lamp by SOI conference.

Let us enjoy right now the moment in SOI 2022 about fantastic keynote speeches, creative papers & business model presentations, and 2 days SOI 2022 summer school lectures, the well-prepared industrial tour & culture tour, and Gala-free & Inviting Dinner in addition to the beautiful nature of Swansea, and the fresh air from the Atlantic.

Time present and time past

Are both perhaps present in time future (Among "four Quarters" by T.S. Eliot) with SOI.

July 7th, 2022

Prof. Dr. JinHyo Joseph Yun

Organizing President of SOI 2022, Visiting professor of SNU, and Tenured principal research of DGIST

jhjyun@snu.ac.kr jhyun@dgist.ac.kr, +821066978355

Welcoming Speech by the Executive President of SOI

- Prof. KwangHo Jung

The global society has struggled with the COVID-19 pandemic and global insecurity. The profound impact of the pandemic and the Ukraine-Russia war have been destroying and reorganizing the current global market ecosystem. However, despite these uncertain circumstances, many members of the SOI (Society of Open Innovation) have been participating in this year's SOI international conference co-hosted with Swansea University. The SOI welcomes your enthusiastic participation and critical and creative perspectives on the 2022 SOI conference. I believe that your outstanding presentations and discussions will significantly contribute to exploring emerging theoretical models of the future global innovation ecosystem.

The social pandemic catastrophe and the Russian invasion of Ukraine are simultaneously sparking a poignant debate about ending globalization, involving emerging dark sides from dismantling the global supply chain and destroying the freedom-based prosperity ecosystem. The significant challenges of creating sustainable innovation markets and restoring free market-based global political economy norms face policymakers and researchers worldwide. Climate change, global inequality, and democracy remain significant challenges for global communities, businesses, and states, even after the COVID-19 pandemic and Russia's devastating war in Ukraine. Even under the massive pandemic and unstable global security, human innovation has been attracting attention again as a source of human prosperity. As we know, global free markets and innovative ecosystems are the sources of human prosperity involving numerous historical innovation ideas. Now, the SOI members are to find the next innovation paradigm beyond Silicon Valley for a new sustainable innovation ecosystem.

This year's SOI international conference will discuss and reflect emerging global innovation trends from various interdisciplinary perspectives. The powerful concepts of open innovation, sustainable community innovation, and solidarity-based innovation that the SOI has emphasized still deserve attention in the current turbulent global ecosystem. The 2022 SOI seeks to present novel ideas and perspectives to criticize and redefine the conventional principles of open, social, and digital innovation. Beyond the dominant utilitarian-based rational model, the SOI should design and present pioneering visions and smart policy instruments to promote sustainable development through altruistic-based strategies with human solidarity and collective intelligence. I believe that SOI members will enthusiastically discuss current global challenges from the diverse perspectives of public policy, covering social design and engineering, political economy, business management, and regional innovation perspectives. Finally, I would like to express my deepest gratitude for all participants' academic enthusiasm and dedication.

Kwangho Jung
Executive President of the 2022 SOI Conference
Dean, Graduate School of Public Administration of
Seoul National University, Korea

Welcoming Speech by the Swanse University Hosting Chair

- Dr. Bo Yang

Dear Delegates and Guests,

On behalf of the Society of Open Innovation (SOI) and Swansea University 2022 Conference Organising Committee, I am delighted to welcome you to Swansea University and to the SOI Conference 2022.

This year, the theme is digital transformation and its recent applications. Digitalisation is an emerging trend shaping our new future and the world economy. Accelerating digital transformation with many organisations working on transforming businesses into digitally enabled platforms will have a profound impact on geopolitical and economic trends worldwide affecting trade, services, and business models. With the COVID-19 pandemic bringing disruptions over the last two years, digitalisation has become more important than ever, not only as an approach to problem solving in response to the crisis, but also a driver and enabler of technological innovation.

Indeed, increasing evidence suggests the rise in popularity of digital technologies but there is a lack of robust evidence beyond the research considering how they provide the positive impact in financial systems, business sectors, our organisations, and our society. How does digital innovation translate in higher capital accumulation or productivity growth? Why do not all countries and sectors take advantage of this?

There is a clearly identified need for robust evidence which can address gaps in the existing knowledge base. This conference seeks to understand what practices are most effective and why, as well as exploring the characteristics of economic systems that best support adoption of digital advancements. The conference is part of a dynamic research area for significant contributions in addressing the post-crisis growth challenges when there is a global shift to a green economy in the face of high economic uncertainty. The aim of the conference is to use our quantitative and qualitive research to engage with the policy debate on how policy, alongside new regulations, should be designed to support financial stability and economic growth in the post-crisis world.

With the focus of the research being inter-disciplinary between economics and business in nature, I hope that the 2022 conference will provide a common platform for a fruitful exchange of knowledge and ideas for future collaborations. I very much look forward to the engaging and interesting discussions.

Dr Bo Yang

Director of CReMMF
Department of Economics
School of Social Sciences
Swansea University

Congratulatory Speech Speech by the Head of the School of Social Sciences, Swansea University

-Prof. Ryan Murphy

Dear Conference Delegates and Guests,

I am delighted to welcome you, on behalf of Swansea University and the School of Social Sciences, to the SOI Conference 2022. It is wonderful to see this prestigious conference come to Wales and it is a particular privilege to welcome the conference back to an 'in person' format. The global pandemic has brought with it many challenges, including the sacrifice of our individual freedoms for the collective good. As well as the personal and professional challenges that we have all confronted, we have also learned a great deal about how we can use technology to remain connected and engaged with the wider world. For many this will be the first 'in person' conference for more than 2 years and I very much hope that you enjoy the unique opportunities that this brings.

Recent years have seen a rapid pace of globalisation of financial markets, much fuelled by technological innovations. A severe shock like COVID-19 has raised significant challenges and highlighted the urgent research need for policy intervention/regulation and effective governance that serves both in crisis and recovery times. The Conference forms a dynamic research area for significant contributions in addressing the post-crisis growth challenges for the world economy when there is a global shift to digitalisation in the face of high economic uncertainty. The crisis has pushed ever more academics and practitioners worldwide to rethink their global strategies by further engaging with business sectors, technology providers, NGOs, government bodies, and society, altogether forming a worldwide innovation ecosystem. As with the financial crisis before it, COVID-19 has already acted as a catalyst for change within very many sectors of the economy. The Conference promises to promote innovative solutions to thorny issues presented by COVID-19 and its lasting impression on society.

Swansea University is well-placed to host this conference as we are pursuing a strategic plan to develop our reputation as a research-hub with increasing engagement with policy and practice at regional, national and international levels. Swansea prides itself on its applied approach to research and has focus on shaping solutions to global challenges. The Conference has the potential to have a significant academic impact by contributing to the construction of improved business models, which are better aligned with the available data and hence can inform better policy-based discussion.

I very much look forward to welcoming you to our University Campus and hope that, amidst the engaging and interesting discussions, you find time to explore the beautiful Welsh coastlines and mountains.

With warmest welcomes,
Ryan Murphy
Professor and Head of the School of Social Sciences

Offline(On-site conference rooms) & Online(Zoom links) Introduction

-Keynote Speech

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<tr><td rowspan="2">Keynote Speech</td><td rowspan="2">Faraday Lecture Theatre</td><td>Keynote Speakers</td><td>Zoom link: https://swanseauniversity.zoom.us/j/96751922599?pwd=K2hxTzUyeXB0YUlPR0JYRTI2VUFmZz09
Meeting ID: 967 5192 2599
Passcode: 843211</td></tr>
<tr><td>Audience</td><td>Facebook Live: Open Innovation-first
Method: [Friends Search → "Open Innovation-first" → Select the search result with the name of "Open Innovation-first" → add friend → visiting the live videos]
 
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Offline(On-site conference rooms) & Online(Zoom links) Introduction

-Session Presenters

Contents	Onsite Room	Online Room	
		Presenters(Zoom Meeting)	***Audience(Facebook Live)***
Special & General Session Presentation	**Faraday Lecture Theatre**	**Zoom link:** https://swanseauniversity.zoom.us/j/96751922599?pwd=K2hxTzUyeXB0YUlPR0JYRTI2VUFmZz09 **Meeting ID: 967 5192 2599 Passcode: 843211**	Facebook Live: Open Innovation-first Method: [Friends Search → "Open Innovation-first" → Select the search result with the name of "Open Innovation-first" → add friend → visiting the live videos] 
	Faraday Room B	**Zoom link:** https://swanseauniversity.zoom.us/j/92718501281?pwd=dDh5NGcvYjA4SFp3WWRPak5wamsrQT09 **Meeting ID: 927 1850 1281 Passcode: 160550**	Facebook Live: Open Innovation-b Method: [**Friends Search** → "**Open Innovation-b**" → Select the search result with the name of "**Open Innovation-b**" → add friend → visiting the live videos] 

-Session Presenters(Continued)

<table>
<tr><th rowspan="2">Contents</th><th rowspan="2">Onsite Room</th><th colspan="2">Online Room</th></tr>
<tr><th>Presenters(Zoom Meeting)</th><th>Audience(Facebook Live)</th></tr>
<tr><td rowspan="2">Special & General Session Presentation</td><td>Faraday Room C</td><td>Zoom link:
https://swanseauniversity.zoom.us/j/99179549674?pwd=dkgxdTUrKzlsWTFVOEtrcG9qaDl2Zz09
Meeting ID: 991 7954 9674
Passcode: 702653</td><td>Facebook Live: Open Innovation-third
Method: [Friends Search → "Open Innovation-third" → Select the search result with the name of "Open Innovation-third" → add friend → visiting the live videos]
 

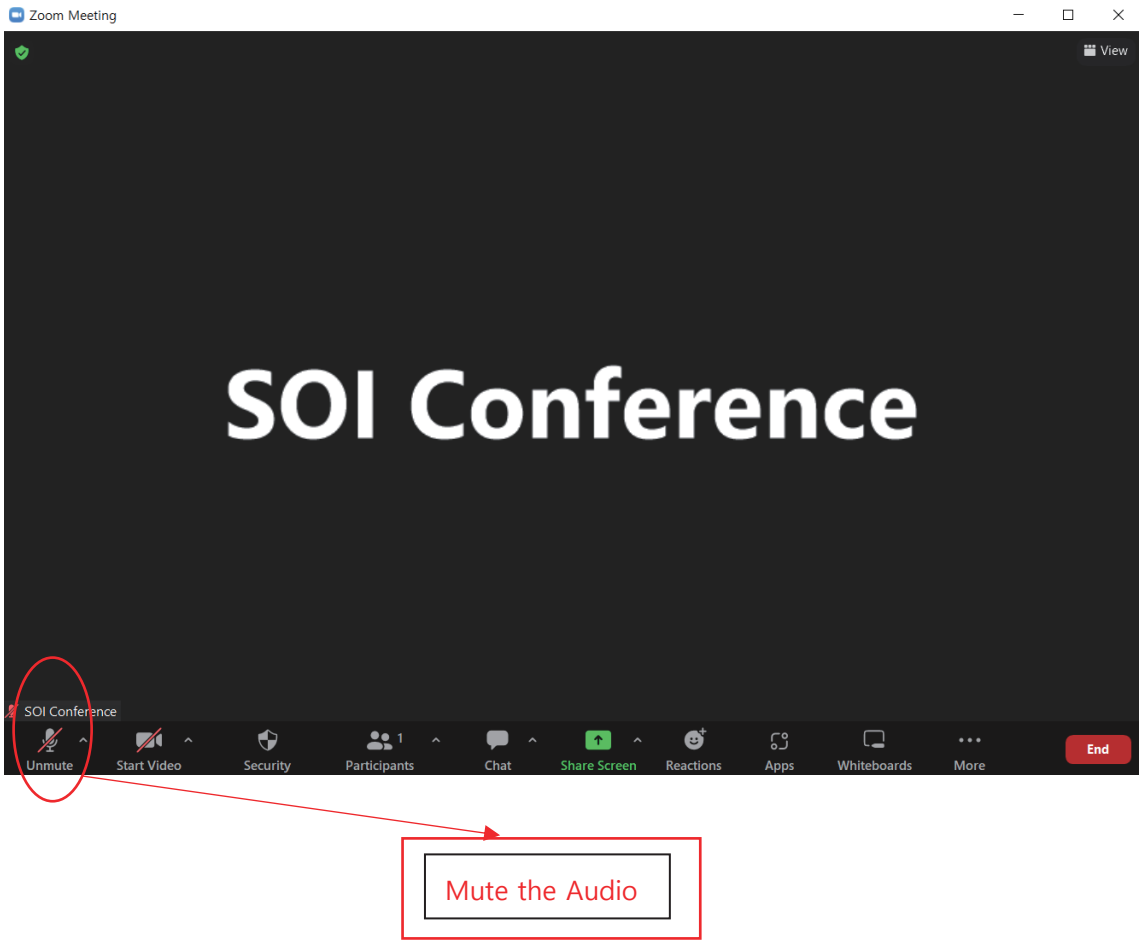
Open Innovation-third</td></tr>
<tr><td>Faraday Room D</td><td>Zoom link:
https://swanseauniversity.zoom.us/j/98797044207?pwd=azhIL0hubG1temMyZzM1d3RwT0FlZz09
Meeting ID: 987 9704 4207
Passcode: 740094</td><td>Facebook Live: Open Innovation-d
Method: [Friends Search → "Open Innovation-d" → Select the search result with the name of "Open Innovation-d" → add friend → visiting the live videos]
 
Open Innovation-d</td></tr>
</table>

***Important Instructions for Using Zoom**

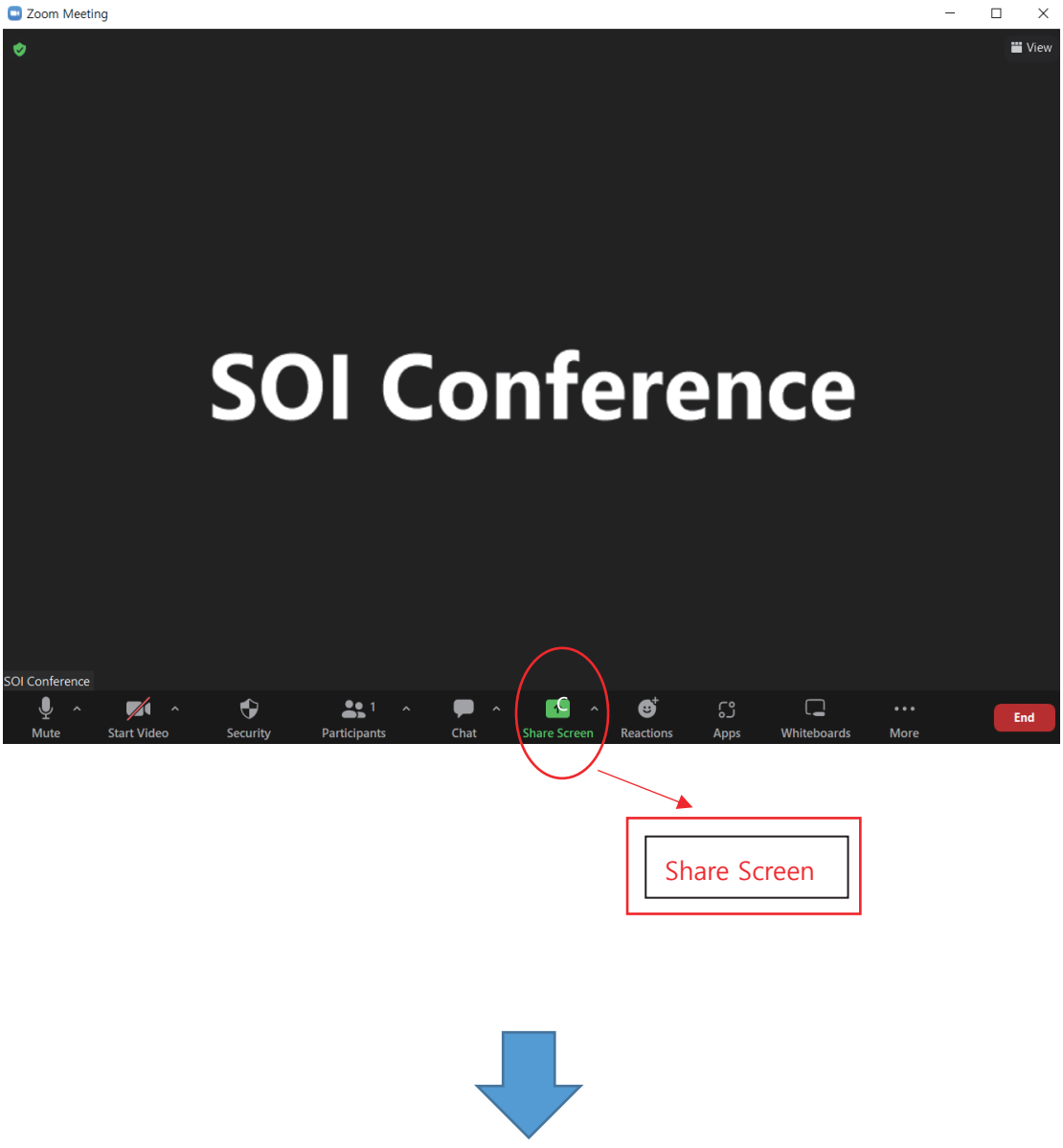
1. Please download zoom app(https://zoom.us/download) and register as a member.

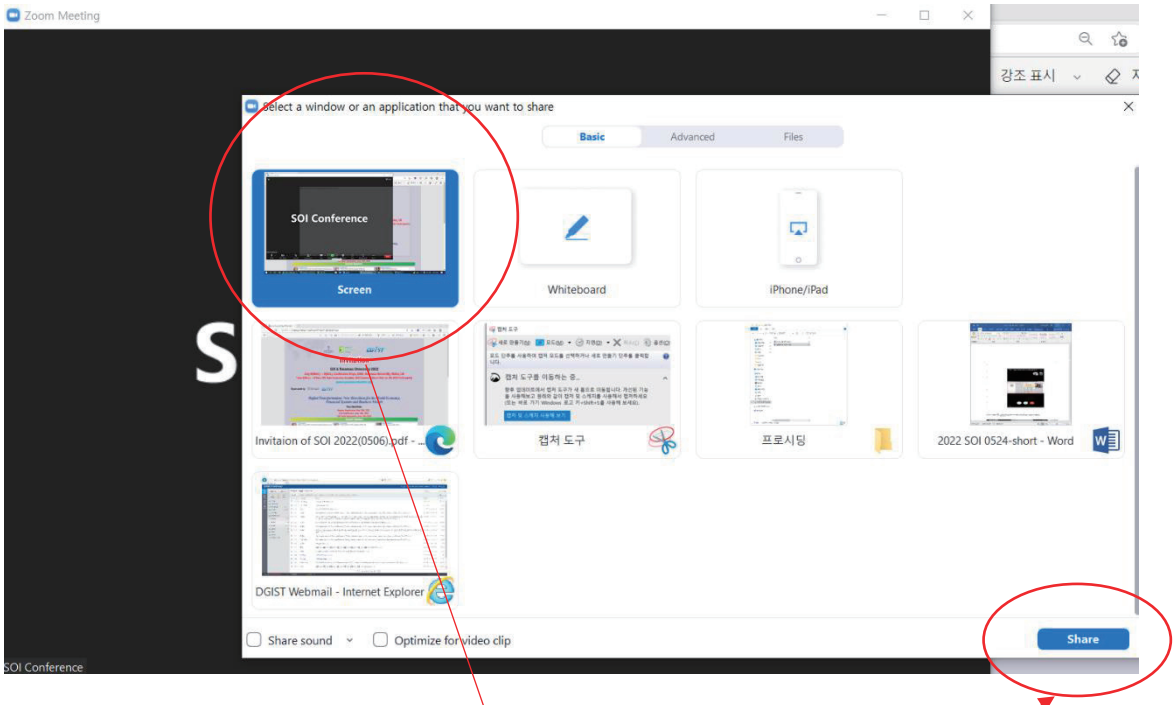
   * It's free. Otherwise, it might limit your video chatting and other rights.

2. When a presenter is presenting, **all other joiners** should mute their audios. Method is like the following:



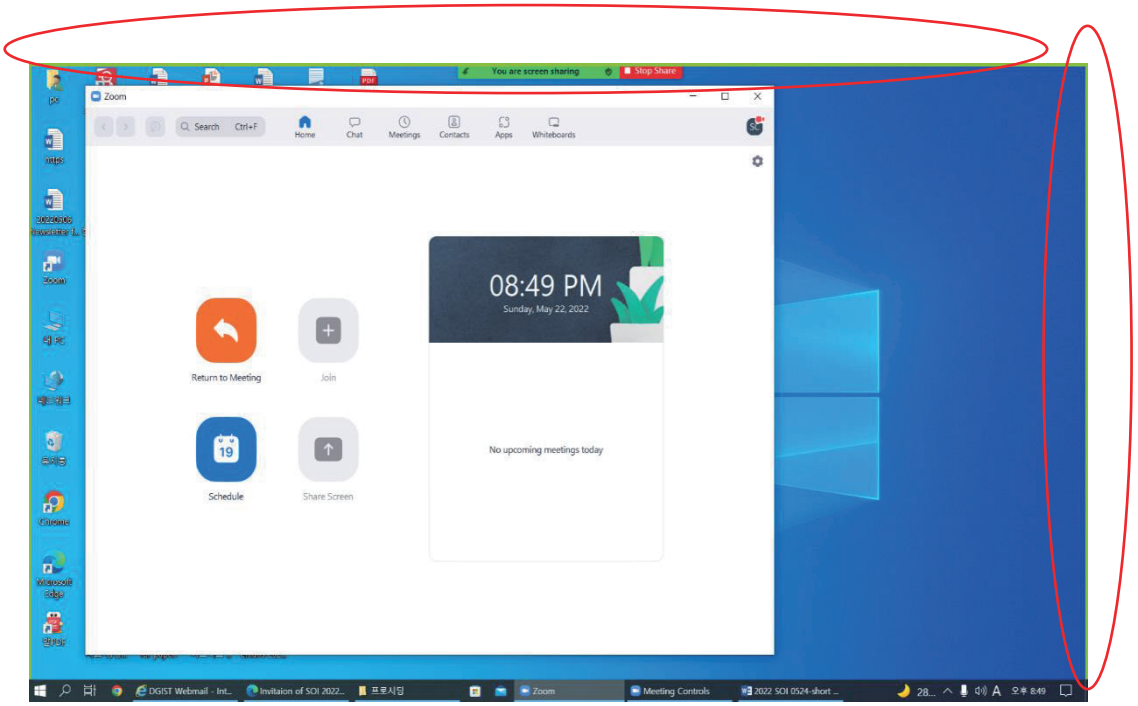
3. Method for Presenters to show the PPT with others





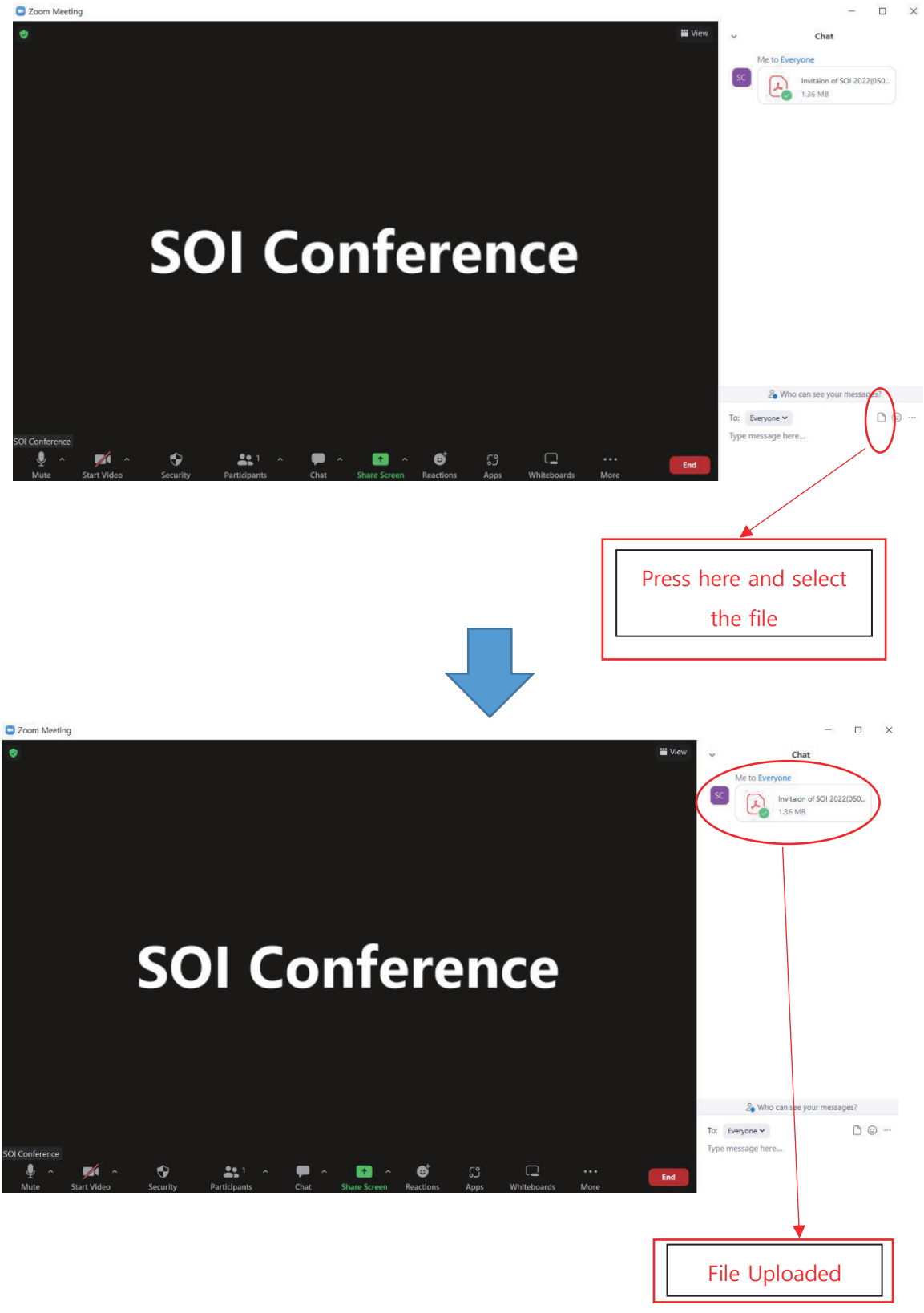
*When ask you to "Select a window or an application that you want to share", please just select the "Screen". And then press the "Share" button.

* Otherwise, it might limit your slides show(stop showing) to others.

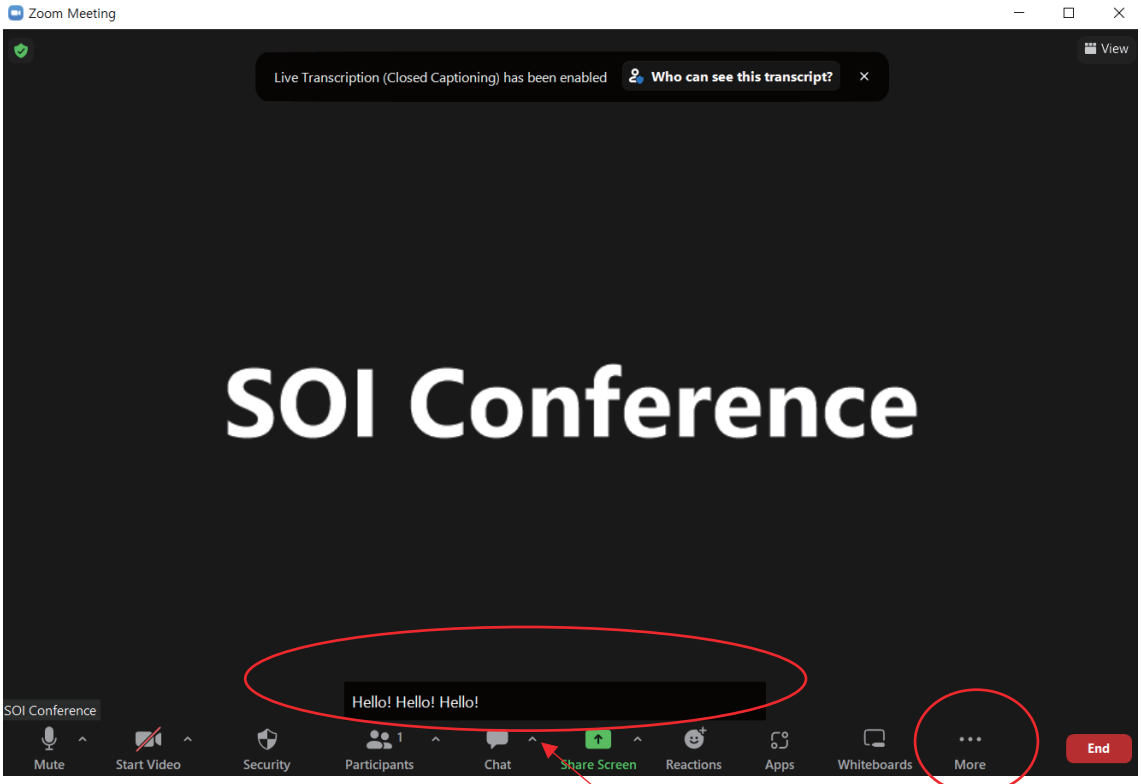


*When there is a green color window frame, it means you are sharing your screen.

4. Presenters PPT upload(Available for others to download and check)



5. Additional Function: Live Transcript



Press here and select "Live Transcript", and then you can see the the presenter's words in text here.

July 04 (Mon.) ~July 05(Tue.)	**Programs**	***Venue: Faraday Room B, Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK**	
09:00~17:00	**Open Innovation Academy of SOI 2022 Summer School** **Presider: Assistant Professor of Open Innovation Academy, Xiaofei Zhao** ***Everyday will check the attendance, full attendants will be awarded "SOI Open Innovation Academy Alumni Certificate" on July 05th, 2022** •Venue & Address: Faraday Room B, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK *For more schedule details & lecture materials, please check Page 46-51. ***Contact: Principal Professor JinHyo Joseph Yun; +82-10-6697-8355, jhyun@dgist.ac.kr** **Or Assistant Professor Xiaofei Zhao; +82-10-4072-8595, qiaoke@dgist.ac.kr** ***Online Participation*: Zoom** **Zoom link: https://swanseauniversity.zoom.us/j/92718501281?pwd=dDh5NGcvYjA4SFp3WWRPak5wamsrQT09** **Meeting ID: 927 1850 1281** **Passcode: 160550**		

7. 06(Wed.)	**Programs**	***Venue:**	**Industry Visiting & Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK**
Time			
08:00~13:00	**Industry Visiting "Penderyn distillery whisky factory"** **Presiders: Saimi Woo(BISTEP, Korea) & Dilshad Jahan (Swansea University, UK)**		

1. (08:00~)The Marriott Swansea Hotel → (08:30~)Swansea Univ. Singleton Park Campus → Penderyn distillery whisky factory
   - Bus waiting until 08:00 in front of The Marriott Swansea Hotel (Maritime Quarter, Swansea SA1 3SS United Kingdom)
   - Bus waiting until 08:30 at Swansea Univ. Singleton Park Campus (for bus parking lot, please refer to Appendix 3.)

2. •09:30~12:00 Penderyn distillery whisky factory

•Bus departure at 12:00 from the parking lot of Penderyn distillery whisky factory

*11:00~12:00 Lunch time (Lunch box & water will be provided; *11.5 Pounds of guide and tasting fee in whisky factory would be paid by SOI.)

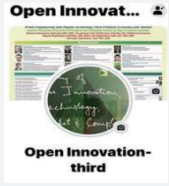
3. 12:00~13:00 (Penderyn distillery whisky factory → Swansea Univ. Singleton Park Campus

4. Only for the First 50 applicants who had sent the applications can participate in the tour.
Contact: openinnovationtmc@dgist.ac.kr or Zoom id: qiaoke@dgist.ac.kr

Audience Facebook Live: Open Innovation-b

Method: [**Friends Search** → "**Open Innovation-b**" → Select the search result with the name of "**Open Innovation-b**" → add friend → visiting the live videos]

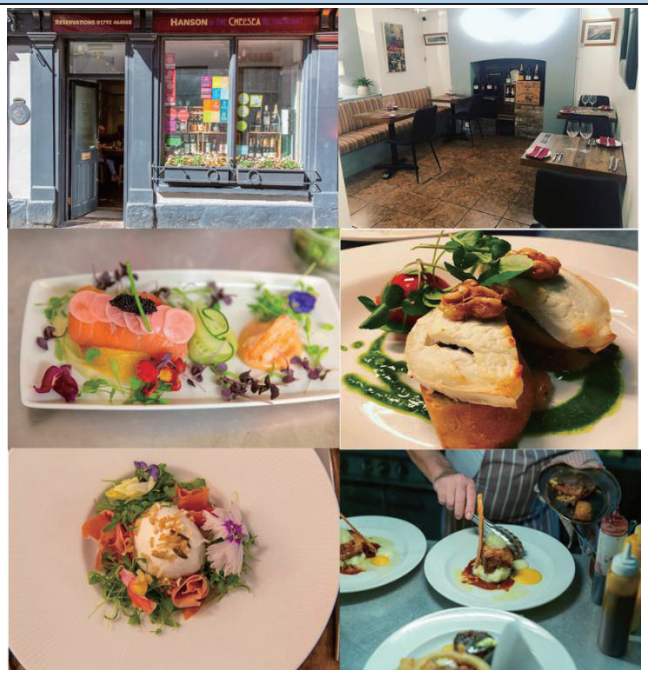
Open Innovation-b

7. 06(Wed.)	Programs	*Venue: Industry Visiting & Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK							
13:00~14:00	Welcome Reception + Preliminary Registration * Venue: Faraday 001, Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK (Coffee and dessert will be provided) 								
14:00~15:30	Faraday Lecture Theatre		Faraday Room B		Faraday Room C		Faraday Room D	
	Online Presenters (Zoom)	Online Audience (Facebook Live)	Online Presenters (Zoom)	Online Audience (Facebook Live)	Online Presenters (Zoom)	Online Audience (Facebook Live)	Online Presenters (Zoom)	Online Audience (Facebook Live)
	Zoom link: https://swanseauniversity.zoom.us/j/96751922599?pwd=K2hxTzUyeXB0YUlPR0JYRTI2VUFmZz09 Meeting ID: 967 5192 2599 Passcode: 843211	Facebook Live: Open Innovation-first Method: [Friends Search → "Open Innovation-first" → Select the search result with the name of "Open Innovation-first" → add friend → visiting the live videos] 	Zoom link: https://swanseauniversity.zoom.us/j/92718501281?pwd=dDh5NGcvYjA4SFp3WWRPak5wamsrQT09 Meeting ID: 927 1850 1281 Passcode: 160550	Facebook Live: Open Innovation-b Method: [Friends Search → "Open Innovation-b" → Select the search result with the name of "Open Innovation-b" → add friend → visiting the live videos] 	Zoom link: https://swanseauniversity.zoom.us/j/99179549674?pwd=dkgxdTUrKzlsWTFVOEtrcG9qaDI2Zz09 Meeting ID: 991 7954 9674 Passcode: 702653	Facebook Live: Open Innovation-third Method: [Friends Search → "Open Innovation-third" → Select the search result with the name of "Open Innovation-thirdt" → add friend → visiting the live videos] 	Zoom link: https://swanseauniversity.zoom.us/j/98797044207?pwd=azhIL0hubG1temMyZzM1d3RwT0FlZz09 Meeting ID: 987 9704 4207 Passcode: 740094	Facebook Live: Open Innovation-d Method: [Friends Search → "Open Innovation-d" → Select the search result with the name of "Open Innovation-d" → add friend → visiting the live videos] 
	Session Digital Transformation with Regulation Conversion Offline Chair: JinHyo Joseph Yun(DGIST, Korea)		Session Digital Transformation and Smart Governance in the Context of Big Data(1) & Open Innovation and Business Model in Biomedical Industry		Session Digital Transformation and Smart Governance in the Context of Big Data(2)		Session Digital Transformation and Smart Governance in the Context of Big Data (6)	

7. 06(Wed.)	Programs	*Venue: Industry Visiting & Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK		
	Online Chair: WANG Ting(GUIZHOU UINIVERSITY, CHINA) • Paper 1: "Regulation conversion at telemedicine of UK and Korea in digital transformation; -The way to growing up new industry with open innovation dynamics" by **JinHyo Joseph Yun*, Xiaofei Zhao, Yang Bo, Zheng Liu** • (Online)Paper 2: "The Effects of Regional Eco-economic Coordinated Development on Population Mobility" by **Sitong Zhang** • (Online)Paper 3: "Study on the differences of industrial development strategies in regional innovatin ecosystem under niche theory" by **Baoqing Zhu** • Paper 4: "A Comparative Study of Digital Government Policies in Denmark and South Korea - Focusing on the analysis of UN and OECD evaluation data –" by **Choong-Sik Chung, Hanbyul Choi, Youngmin Cho** • (Online) Paper 5: "Economic Growth And Environmental Pollution: Testing The Kuznets Curve Based On Embodied Carbon" by **WANG Ting*, MO Shu** **Honor Discusser: Philip Cooke**	**Online Chairs: QI Si(GUIZHOU UINIVERSITY, CHINA), ZHOU Li Li (GUIZHOU UINIVERSITY, CHINA)** **Offline Chair: Kwangsoo Shin(The Catholic University of Korea, Korea)** • (Online)Paper 1: "Paths to Develop Urban Digital Economy : A Quadruple Helix Framework" by **Chaonan Yi, Lei Ma, Kaitong Liang, Xiaojing Huang** • Paper 2: "When do firms in biotechnology industry purpose open innovation? The perspective of small-medium enterprise" by **Changhyeon Song, Kwangsoo Shin*** • Paper 3: "Varieties of Regional Innovation Systems (RIS) around the world and Catch-up by Latecomers" by **Jinhee Kim & Keun Lee** • (Online)Paper 4: "Research on tax collection and administration in e-commerce in the context of big data" by **ZHOU Li Li, Xinru Peng, Qiong Shi, Mei Wu, Xinran Liu** • Paper 5: "ESG management of Food Firms in Europe and Korea for innovation ecosystem to create future together" by **Harry Jeong, Changhyeon Song, Kwangsoo Shin*** **Honor Discusser: Keun Lee**	**Online Chairs: CUI Hai Yang(GUIZHOU UINIVERSITY, CHINA), ZHOU Jie (GUIZHOU UINIVERSITY, CHINA)** Offline Chair: KwangHo Jung(Seoul National University, Korea) • Paper 1: "Exploring the implications of innovation lags from the delays in change inherent in organizational, institutional, and cultural changes" by **Kwangho Jung** • (Online)Paper 2: "Grey relational analysis for numerical big data: an improved model and a case for physical fitness test" by **YANG Yong, LI Qiao Xing*, WU Jun Fang** • (Online)Paper 3: "The Environmental Regulations may Reduce Pork Prices : A Case Study in China" by **Liu Xin*, Li YunXuan** • (Online)Paper 4: "Customer concentration and Corporate Financial Asset Investment: Empirical Analysis Based on Chinese Non-financial Listed Firms" by **Yong Wang, Xiangdong Liu, Weizhen Meng, Yun Peng, Duo Liu** • Paper 5: "Industry Structure of Ivory Coast" by **Jae-Hwan Park, Choi, Jeeyeon** **Honor Discusser: KwangHo Jung**	**Online Chairs: WANG Xiu Feng (GUIZHOU UINIVERSITY, CHINA), LIU Yi Zhi(GUIZHOU UINIVERSITY, CHINA)** Offline Chair: Sungyong Choi(HanYang University, Korea) • Paper 1: "Impact of risk management on innovation efficiency using a two-stage DEA-Tobit Model" by **Minjeong Oh, Hyundong Nam, Yunsik Choi, Sungyong Choi*** • (Online)Paper 2: "Research on Adoption Behavior of Mobile Medical Users——From the Perspective of Push-Pull-Anchor Analysis Framework" by **Liu YIZHI, Xuan Lu** • (Online)Paper 3: "Exploring the Institutional Context of Strategic Alliances and Influencing Roles of Governments Impacting Alliances' Synergies" by **CIRJEVSKIS, Andrejs** • Paper 4: "Adopting a Formula Funding Model to Enhance Cooperation of Triple Helix" by **Sangjae Pyo, Hyoung Ryul Ma, Kyoungmi Jang, DongYeun Kwak, Dong Hoon Oh*** • Paper 5: "Study on Growth of Korean Venture Businesses in Local Area with Pohang City Case" by **Lee Sang-Young*, Moosup Jung**

7. 06(Wed.)	**Programs** ***Venue: Industry Visiting & Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK**
16:00~17:00	**Keynote Speech 1** (16:00~16:30) **Philip Cooke** (Bergen University College, Norway) •Theme: The digital envelope: From 'Fashion City' to digital 'Green Influence' to 'New Garden Cities' after COVID **•Venue: Faraday Lecture Theatre, Faraday Building, Swansea University, Singleton Park Campus** ***Presiders: Bo Yang(Swanasea University, Korea) & Sang-Don Lee(Ewha Womans University, Korea)** **Onlin participation: Zoom** **Zoom link: https://swanseauniversity.zoom.us/j/96751922599?pwd=K2hxTzUyeXB0YUlPR0JYRTl2VUFmZz09** **Meeting ID: 967 5192 2599; Passcode: 843211** **Audience Facebook Live: Open Innovation-first** Method: [**Friends Search** → "**Open Innovation-first**" → Select the search result with the name of "**Open Innovation-first**" → add friend → visiting the live videos] 
	Keynote Speech 2 (16:30~17:00) **KwangHo Jung** (Seoul National University, Korea) •Theme: Two Pillars of Innovation Process Research: From Motivational Theory to Institutional Perspective
17:30~	**Invited VIP Dinner by the president of SOI** ***Presiders: KwangHo Jung(Seoul National Univ., Korea), DongHoon Oh(OSP, Korea) & BongHwan Kim(Seoul National Univ., Korea)** • Venue: "Hanson at The Chelsea" (Joint Taxi will be prepared) * Address: 17 St. Mary Street, Swansea, SA1 3LH, Wales, UK; +44 01792 464 068 * Because of the limited seats, we will contact the invited VIPs separately.

7. 06(Wed.)	**Programs**	***Venue:** **Industry Visiting & Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK**



Audience Facebook Live: Open Innovation-b

Method: [**Friends Search** → "**Open Innovation-b**" → Select the search result with the name of "**Open Innovation-b**" → add friend → visiting the live videos]

Open Innovation-b

7. 07(Thur.)	Programs		*Venue: Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK						
	Faraday Lecture Theatre		Faraday Room B		Faraday Room C		Faraday Room D		
	Online Presenters (Zoom)	Online Audience (Facebook Live)	Online Presenters (Zoom)	Online Audience (Facebook Live)	Online Presenters (Zoom)	Online Audience (Facebook Live)	Online Presenters (Zoom)	Online Audience (Facebook Live)	
Time	**Zoom link:** https://swanseauniversity.zoom.us/j/96751922599?pwd=K2hxTzUyeXB0YUlPR0JYRTl2VUFmZz09 **Meeting ID: 967 5192 2599 Passcode: 843211**	Facebook Live: Open Innovation-first Method: [Friends Search → "Open Innovation-first" → Select the search result with the name of "Open Innovation-first" → add friend → visiting the live videos] 	**Zoom link:** https://swanseauniversity.zoom.us/j/92718501281?pwd=dDh5NGcvYjA4SFp3WWRPak5wamsrQT09 **Meeting ID: 927 1850 1281 Passcode: 160550**	Facebook Live: Open Innovation-b Method: [Friends Search → "Open Innovation-b" → Select the search result with the name of "Open Innovation-b" → add friend → visiting the live videos] 	**Zoom link:** https://swanseauniversity.zoom.us/j/99179549674?pwd=dkgxdTUrKzlsWTFVOEtrcG9qaDI2Zz09 **Meeting ID: 991 7954 9674 Passcode: 702653**	Facebook Live: Open Innovation-third Method: [Friends Search → "Open Innovation-third" → Select the search result with the name of "Open Innovation-third" → add friend → visiting the live 	**Zoom link:** https://swanseauniversity.zoom.us/j/98797044207?pwd=azhIL0hubG1temMyZzM1d3RwT0FIZz09 **Meeting ID: 987 9704 4207 Passcode: 740094**	Facebook Live: Open Innovation-d Method: [Friends Search → "Open Innovation-d" → Select the search result with the name of "Open Innovation-d" → add friend → visiting the live videos] 	
08:00~09:00	**Registration (Registration Desk: Foyer of Faraday Building)**								
09:00~10:30	**Session Digitalization and regional innovation & Innovation Ecosystem and Governance Mechanism in the Digital era Offline Chair: Bo Yang(Swansea University, UK) Online Chair: Jinxi Wu(Tsinghua University, China)** • Paper 1: "Open innovation in crisis: An overview of the healthcare sector in response to the COVID-19 pandemic" by		**Session Innovation Diversity for Emerging Economies & Innovation & Growth Online Chairs: Natalja LACE and Yuanyuan LIU (Riga Technical University, Latvia) Offline Chairs: Kangwon Lee (Korea Institute for Advanced Study, Korea) & Seung Hoo Jin(Sumsung SDS, Korea)** • (Online)Paper 1: "Organizing studies entrepreneurially to prepare for sailing through the		**Session Innovation Policy and Regulation of Digital Transformation Online Chair: Ben Zhang (Huazhong University of Science & Technology, China)** Offline Chair: Joao Leitao(University of Beira Interior, Portugal) • (Online)Paper 1: "Digital innovation strategy based on actor network of self-driving vehicles: Patent comparison between China and European Union" by **Yakun Ji, Ben Zhang***		**Session Challenges of Digital Transformation in Korean Manufacturing Industry & Regional Innovation Systems Offline Chairs: DongHoon Oh & Heongu Lee(Ministry of Trade, Industry and Energy, Office of Strategic R&D Planning, Korea) Online Chair: Yuri Sadoi(Meijo University, Japan)** • Paper 1: "Factor Analysis and Prediction of High-Performance Government-Sponsored R&D		

7. 07(Thur.)	Programs	*Venue: Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK			
	Zheng Liu, Yongjiang Shi, Bo Yang* • Paper 2: "The signal of post catch-up in Open Innovation Dynamics" by **JinHyo Joseph Yun*, Xiaofei Zhao, EuiSeob Jeong, KyungHun Kim, SeungDeuk Hahm** • (Online)Paper 3: "Innovation ecosystem evolution from traditional Internet to artificial intelligence: A case study of Chinese search engine enterprise" by **DING Ling, YANG Mingchun, MA Ziyou, YANG Mingchun, WU Jin-xi** • Paper 4: "How can Open Innovation Make an Innovation Ecosystem Work?" by **Yongjiang Shi, Hu, Zheng Liu*, David TX Shang** • (Online)Paper 5: "The Integration Innovation of Technological Governance and Social Governance in the Post Epidemic Era" by **Sun Rui, WU Jinxi*, SUN Qintao** **Honor Discusser: JinHyo Joseph Yun**	turbulences of the unknown" by **OGANISJANA Karine, WESTERBERG Mats, and HIETANEN Lenita** • Paper 2: "Investment and performance of in-vitro diagnostic medical device firm for infectious disease in post-corona era: A South Korea case" by **Min Joon Kim, Hyun Yeong Kim, Kwangsoo Shin* Changhyeon Song*** • Paper 3: "A Research on the Effect of R&D Stocks by Industry Group on Technological Advance and Economic Growth" by **Jaeho Jung, Sangok Choi** • (Online)Paper 4: "Exploring the Enablers of Strategic Orientation for Health Care Business Innovation Ecosystems" by **Min-Ren Yan, Chun Han Wang** • (Online)Paper 5: "The moderating effect of reinvestment propensity on research capabilities and technology transfer relationship in government funded institutes: The Korean case" by **Woojoong Kim, Sangok Choi, Kangwon Lee** **Honor Discusser: Andreas Pyka**	• (Online)Paper 2: "Evaluation of Country Epidemic Emergency Governance Capacity Based on RESEIR Model" by **Runhui Lin, Yalin Li** • (Online)Paper 3: "Investor emotions-based stock return prediction model using deep learning algorithms" by **Min-Seung Kim, Yong-Ju Jang, Chan-Ho Lee, Ji-Hye Choi, Jeong-Hee Lee, Sun-Hong Lee, Tae-Eung Sung*** • Paper 4: "Open Innovation, Coopetition and Co-innovation: How does co-creation interact?" by **Joao Leitao, Ângelo Novo, and Dina Pereira*** • Paper 5: "Innovation of Online Food Delivery Platform Systems through an Emphatic Design Approach" by **XU FAN, Kim Taesun**	project: Logistic Regression and Machine Learning" by **Hyoung Ryul MA, Cheol-Ju Lee** • (Online)Paper 2: "Digital transformation and its impact on green transformation of business in Japan" by **Sergei Shaposhinikov & Yuri Sadoi** • Paper 3: "Does digital literacy of college students affect their entrepreneurial intentions in the era of the 4th industrial revolution?" by **ByungYun Bae, Sungyong Choi*** • Paper 4 "Smart cities and open innovation: towards a coopetition framework" by **Valentina Della Corte, Enrico Di Taranto, Simone Luongo** • Paper 5: "A Study on the Fit between Innovation Strategies and Country-Specific Ownership Structures: Focusing on Ambidextrous Innovation Strategy and the Ownership Structures in Korean Manufacturing Firms" by **Choo Yeon Kim, Jae Wook Yoo***	

7. 07(Thur.)	Programs *Venue: Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK	
10:30~11:00	Coffee Break ★ **Coffee and dessert will be provided in Faraday 001.**	
11:00~13:00	**Welcoming Speech by the Organizing President of SOI - Prof. Dr. JinHyo Joseph Yun (**11:00~11:05) **•Venue: Faraday Lecture Theatre, Faraday Building, Swansea University, Singleton Park Campus** ***Presiders: Zheng Liu(Cardiff Metropolitan University, UK) & BongHwan Kim(Seoul National Univ., Korea)** **Onlin participation: Zoom** **Zoom link: https://swanseauniversity.zoom.us/j/96751922599?pwd=K2hxTzUyeXB0YUlPR0JYRTl2VUFmZz09** **Meeting ID: 967 5192 2599; Passcode: 843211** **Audience Facebook Live: Open Innovation-first** Method: [**Friends Search** → "**Open Innovation-first**" → Select the search result with the name of "**Open Innovation-first**" → add friend → visiting the live videos] **Open Innovat...**  **Open Innovation-first**	
	Welcoming Speech by the Executive President of SOI - Prof. KwangHo Jung (11:05~11:10)	
	Welcoming Speech by the Swansea University Hosting Chair-Dr. Bo Yang (11:10~11:15)	
	Congratulatory Speech by the Head of the School of Social Sciences, Swansea University-Prof. Ryan Murphy (11:15~11:20)	
	Keynote Speech 3 (11:30~12:00) **JinHyo Joseph Yun** (DGIST, Korea) •Theme: Regulation conversion at telemedicine of UK and Korea in digital transformation; -The way to growing up new industry with open innovation dynamics"	
	Keynote Speech 4 (12:00~12:30) **Fred Phillips** (University of New Mexico, USA) •Theme: Climate Dialog, Climate Action: Can democracy do the job?	
	Keynote Speech 5 (12:30~13:00) **Andreas Pyka** (University of Hohenheim, Germany) •Theme: Growth, development and transformation. What is important now?	
13:00~15:30	Lunch & Coffee Break ★ **Lunch, Coffee and dessert will be provided in Faraday 001.**	

7. 07(Thur.)	Programs	*Venue: Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK			
15:30~17:00	**Session** **Open Innovation Business Model Session** **Offline Chairs: JinHyo Joseph Yun(DGIST, Korea), Bo Yang (Swansea University, Korea) & EuiSeob Jeong(KISTI, Korea)** • (Online)Paper 1: "A business model for the emergence of a social market for amateur artists" by **Yoonseo Jung** • Paper 2: "Business Model of K-Youth Culture" by **Juhyung Jung**	**Session** **Open Innovation and Sustainable System Development in Practices & Open Innovation and ecosystem** **Online Chairs: Min-Ren Yan (Chinese Culture Univ.) & Haiyan Yan(Shanghai Univ. of International Business and Economics, China)** **Offline Chair: Zheng Liu(Cardiff Metropolitan University, UK)** • Paper 1: "Competitiveness in E-mobility industry" by **Seunghyun Kim*** • (Online)Paper 2: "Exploring the Driving Forces of New Retail Business Model Innovation in China" by **HaiyanYan, Min-Ren Yan*, Xiaotong Shen*, Xinyue Yan, Haonan Qu** • Paper 3: "Innovation capabilities and technology commercialization in the smart farm sector of Korea" by **Daeyu Kim, Seung Hoo Jin** • Paper 4: "Industrialisation, Ecologicalisation and Digitalisation (IED): Building a theoretical framework for	**Session** **Innovation and Digital Transformation in Emerging Economies** **Online Chairs: Elina Gaile-Sarkane and Inga Lapiņa (Riga Technical University)** Offline Chair: Eungdo Kim (Chungbuk National University, Korea) • (Online)Paper 1: "Factors Affecting Innovation in the Clothing and Textile Industry: Towards the Circular Economy" by **HOVLANNE Zane, DUBICKIS Mikus, GAILE-SARKANE Elina** • Paper 2: "Is Groupthink Really Inevitable? The Self-Organizational Perspective" by **Namjun Cha, Eungdo Kim*** • Paper 3: "A Study on Design Education Related to Attitude of Accepting AI-Based Design" by **Ko Yunseo, Kim Taesun** • (Online)Paper 4: "Exploring the social construction of counterfeit purchases as social reality: Externalization, objectification, and internalization" by **Seung-**	**Session** **Issues on Innovative Competitiveness and Efficiency & Open Innovation in the new era. The role of artificial intelligence** **Offline Chairs: DaeCheol Kim(Hanyang University, Korea) & SungYong Choi(Hanyang University, Korea)** Online Chair: SCEULOVS Deniss (Riga Technical University, Latvia) • Paper 1: "Impacts of the local government's visa waiver program on Tourism in Jeju Island" by **Tae Youn Kim, Eunsong Bae, Daecheol Kim*** • Paper 2: "Open innovation and well-being: In relation to 'The Postpandemic Future of Work'" by **Mari Iizuka** • Paper 3: "Innovation of tacit knowledge management via digital transformation in the demographic transition era - case study on a national R&D project of the Korean ceramic industry" by **Heongu Lee** • (Online)Paper 4: "The Impact on Audience Attention and Media Brand Choice Using Media	

7. 07(Thur.)	Programs	*Venue: Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK			
		sustainable development" by **Yongjiang Shi, Jialun Hu, David Tianxin Shang, Zheng Liu*** • (Online)Paper 5: "Diversified Paths to Improve Operating Efficiency of Patent Operation Platforms: A Fuzzy-Set Qualitative Comparative Analysis Based on TOE Framework in China" by **Kaitong Liang, Lei Ma, Zheng Liu, Chaonan Yi, Xinwei Ye** **Honor Discusser: Fred Phillips**	**Hee Lee, Kwangho Jung & Jane Workman** • Paper 5: "An Experiment on Digitalizing Gratitude and Improving Trust" by **Jun-ichi Yamamoto, Rina Numabe, Quan Than Pham & Shugo Sugawara**	Brands Uniqueness Phenomenon" by **SAULITE Linda, SCEULOVS Deniss** • Paper 5: "Water Treatment Technology Trends Through Patent Data Analysis in the Age of Digital Transformation" by **Sangjae Pyo, Hyoung Ryul Ma, Seung Gun Chung, Dong Hoon Oh**	

7. 08(Fri.)	Programs		*Venue: Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK						
Time	Faraday Lecture Theatre		Faraday Room B		Faraday Room C		Faraday Room D		
	Online Presenters (Zoom)	Online Audience (Facebook Live)	Online Presenters (Zoom)	Online Audience (Facebook Live)	Online Presenters (Zoom)	Online Audience (Facebook Live)	Online Presenters (Zoom)	Online Audience (Facebook Live)	
	Zoom link: https://swanseauniversity.zoom.us/j/96751922599?pwd=K2hxTzUyeXB0YUIPR0JYRTI2VUFmZz09 **Meeting ID:** 967 5192 2599 **Passcode:** 843211	Facebook Live: Open Innovation-first Method: [Friends Search → "Open Innovation-first" → Select the search result with the name of "Open Innovation-first" → add friend → visiting the live videos] 	**Zoom link:** https://swanseauniversity.zoom.us/j/92718501281?pwd=dDh5NGcvYjA4SFp3WWRPak5wamsrQT09 **Meeting ID:** 927 1850 1281 **Passcode:** 160550	Facebook Live: Open Innovation-b Method: [Friends Search → "Open Innovation-b" → Select the search result with the name of "Open Innovation-b" → add friend → visiting the live videos] 	**Zoom link:** https://swanseauniversity.zoom.us/j/99179549674?pwd=dkgxdTUrKzlsWTFVOEtrcG9qaDI2Zz09 **Meeting ID:** 991 7954 9674 **Passcode:** 702653	Facebook Live: Open Innovation-third Method: [Friends Search → "Open Innovation-third" → Select the search result with the name of "Open Innovation-third" → add friend → visiting the live 	**Zoom link:** https://swanseauniversity.zoom.us/j/98797044207?pwd=azhIL0hubG1temMyZzM1d3RwT0FlZz09 **Meeting ID:** 987 9704 4207 **Passcode:** 740094	Facebook Live: Open Innovation-d Method: [Friends Search → "Open Innovation-d" → Select the search result with the name of "Open Innovation-d" → add friend → visiting the live videos] 	
08:00~09:00	**Registration (Registration Desk: Foyer of Faraday Building)**								
09:00~10:30	**Session** **Platform innovation** **Online Chair: Lei Ma(Nanjing Univ. of Science and Technology, China)** Offline Chair: Jang Hyun Kim (Sungkyunkwan University, Korea • Paper 1: "Knowledge flow mechanism for platform innovation ecosystem: Multiple case studies on intellectual property operation platform in China" by **Lei Ma, Ben Zhang*,**		**Session** **Digital Smart and Socially Inclusive Design & New Directions for Corporate Finance and Innovation** **Offline Chair: Taesun Kim (HanYang University, Korea)** **Online Chair: Erwei Xiang (Newcastle University, UK)** • Paper1: "Designing for Children - Strategies for the digital transformation of basic education for refugee children"		**Session** **Innovation Lag, Social Construction, Creativity, and Autonomy & Green Governance: Code and Evaluation** **Offline Chair: KwangHo Jung(Seoul National University, Korea)** **Online Chair: Weian Li(Nankai University & Tianjin University of Finance and Economics, China)** • Paper 1: "The Effect of Organizational Performance on		**Session** **Open Innovation in the new era. The role of artificial intelligence** **Offline Chairs: Valentina Della Corte(University of Naples Federico Ⅱ, Italy) & Giovanna Del Gaudio(University of Naples Federico Ⅱ, Italy)** Online Chair: Mari Iizuka(Doshisha University, Japan) • Paper 1: "Organization culture and Open Innovation: A Case of	

7. 08(Fri.)	Programs	*Venue: Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK			
	Liying Wang, Zheng Liu, Kaitong Liang • Paper 2: "Factors affecting open innovation performance of venture firms: focusing on innovation mode with university and research institute" by **Cheongho Na, EungDo Kim*** • Paper 3: "Barrier to establishing communities of practice around circular economy: Study of the Welsh Circular Economy Innovation Communities" by **Staffen James, Zheng Liu, Gary Walpole, Gareth RT White** • Paper 4: "Risk management and innovation : Analytical mapping using CiteSpace" by **ShaoPeng Che, Dongyan Nan, Shunan Zhang, Jang Hyun Kim*** • (Online)Paper 5: "Development and Future Trends of Media Economy Amid Technological Evolution: A China Perspective" by **Shi Xiaojin, Wu Jinxi** **Honor Discusser: Venni V Krishna**	by **Zhang Xi, Hongyuan Zhao, Kim Taesun** • Paper 2: "Open Innovation and Cost Efficiency in an Emerging Economy" by **Xiaowen Tian, Erwei Xiang, Wenjuan Ruan** • Paper 3: "Exploring a way of sustainable development of intermediary organizations supporting the innovative SMEs in the region — A case study of TAMA (Technology Advanced Metropolitan Area) Association in Japan" by **Kodama, Toshihiro** • Paper 4: "Success Factors for Innovation: A Bayesian Network Approach" by **Seungwon Yu, Jaeseong Kim** • Paper 5: "Digitalizing the Pillars of Hybrid Civic Universities" by **Joao Leitao, Dina Pereira, Ângela Gonçalves, Tiago Oliveira, and Joaquim Ferreira**	Recruiting Female Workers in State-Owned Corporations" by **Jineui Hahm, Kwangho Jung** • (Online)Paper 2: "Human Capital-Driven Organizational Innovation Ecosystem" by **Min-Ren Yan, Ting-Cheng Lee*** • Paper 3: "Can Stability of Board Contribute to fulfill Corporate Social Responsibility?——Based on Evidence of A-share Listed Companies" by **Lun Wang, Runhui Lin** • (Online)Paper 4: "Digital transformation of higher education fundraising campaigns: the importance of donors' segmentation" by **STRAUJUMA Anita, LOZE Lelde** • Paper 5: "Empirical study on the process of servitization in the Product Service System with the digitization; Focused on Manufacturing firm" by **Junghee Han**	Daikin" by **Mari Iizuka, Yuko Shiotani** • Paper 2: "A Study on the Effects of Learning Orientation of Technology Startups on Autonomy, Proactiveness, Competitiveness and Management Performance" by **ByungYun Bae, Chulok Ahn, Sungyong Choi*** • Paper 3: "A study on optimal distinctiveness of strategic CSR to maximize the impact of technological innovation on firms' value" by **SooHwan Choi, JaeWook Yoo*** • Paper 4: "The customer's emotional experience along the Artificial Intelligence journey: the case of Mrs. Connie and Mr. Pepper." by **Valentina Della Corte, Giovanna Del Gaudio, Fabiana Sepe, Simone Luongo**	
10:30~11:00	Coffee Break ★ **Coffee and dessert will be provided Faraday 001.**				
11:00~12:30	**Keynote Speech 6** (11:00~11:30) **Ulrich Witt** (Max Planck Institute of Economics Jena, Germany) •Theme: Innovative Capitalism Needs Institutional Co-evolution				

<table>
<tr><td>7. 08(Fri.)</td><td colspan="4">Programs *Venue: Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK</td><td></td></tr>
<tr><td rowspan="3"></td><td colspan="4">•Venue: Faraday Lecture Theatre, Faraday Building, Swansea University, Singleton Park Campus
*Presiders: Rosen Chowdhury (Swansea University, UK) & Eungdo Kim(Chungbuk National University, Korea)

Onlin participation: Zoom
Zoom link: https://swanseauniversity.zoom.us/j/96751922599?pwd=K2hxTzUyeXB0YUlPR0JYRTI2VUFmZz09
Meeting ID: 967 5192 2599; Passcode: 843211

Audience Facebook Live: Open Innovation-first
Method: [Friends Search → "Open Innovation-first" → Select the search result with the name of "Open Innovation-first" → add friend → visiting the live videos]

Open Innovat...
 
Open Innovation-first</td><td></td></tr>
<tr><td colspan="4">Keynote Speech 7 (11:30~12:00) Venni V Krishna (University of New South Wales, Australia) •Theme: Can we Build Innovation Systems with Weak Science and Technology Systems? Some Insights from Successful Cases in Asia [Online Speech]</td></tr>
<tr><td colspan="4">Keynote Speech 8 (12:00~12:30) Bo Yang (Swansea University, UK) •Theme: Open Innovation in time of Crisis</td></tr>
<tr><td>12:30~13:30</td><td colspan="4">Lunch Break ★ Lunch will be provided in Faraday 001.</td><td></td></tr>
<tr><td>13:30~15:00</td><td>Session
Open Innovation in Biomedical Industry
Offline Chairs: Eungdo Kim(Chungbuk National University, Korea)</td><td>Session
Climate Change in Digital Transformation Era & Digital Transformation and Smart Governance in the Context of Big Data (3)</td><td>Session
Digital Transformation and Smart Governance in the Context of Big Data (4) & Knowledge service, open innovation and firm performance</td><td>Session
Digital Transformation for new business innovation & Digital Transformation and Smart Governance in the Context of Big Data (5)</td><td></td></tr>
</table>

7. 08(Fri.)	Programs	*Venue: Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK			
	Online Chair: Zheng Liu(Cardiff Metropolitan University, UK) • Paper 1: "Impact of use emerging technologies on organizational knowledge creation capability by task complexity" by **Namjun Cha, Eungdo Kim*** • Paper 2: "Industrial Symbiosis and Open Innovation" by **David T. X. Shang** • Paper 3: "Analysis of patent activity trends by IPC in the IT-related field using Korean registered patents" by **Youeil KIM, EuiSeob JEONG*, Sangwoo KIM** • Paper 4: "Innovation in Crisis: an examination of the interoperation of Triple Helix actors in response to Covid-19 pandemic" by **Staffen James, Zheng Liu*, Victoria Stephens, Gareth RT White** • Paper 5: "A study of communication network management: A case study of the Overseas Technical Certification Process in the	**Offline Chair: Sang-Don Lee(Ewha Womans University, Korea)** **Online Chairs: HONG Ming Yong(GUIZHOU UINIVERSITY, CHINA), ZENG Fang Mei(Yuan Ze University)** • Paper 1: "Changes in Species Richness and Distribution of Birds in Winter in Korea" by **Minkyung Kim, Sang-im Lee, SangDon Lee, Piotr G. Jablonski*** • (Online)Paper 2: "Smog, firm evolution and macro-economic efficiency: evidence from 800-mm isoline in China" by **Wu Dewang, Liu Xin** • (Online)Paper 3: "Do environmental subsidies efficient on air pollution: Games and empirical evidence" by **Liu Xin*, Xu Chunmei** • (Online)Paper 4: "Analysis on the mechanism of population structure on carbon emission" by **Fu Haowen** • (Online)Paper 5: "Ethical responsibility of a company in	**Online Chairs: LI Ye(GUIZHOU UINIVERSITY, CHINA), WANG Ting(GUIZHOU UINIVERSITY, CHINA)** **Offline Chairs: Hun Park(KISTI, Korea), Jinwoo Sim(KISTI, Korea) & Tae-Eung Sung(Yonsei University, Korea)** • Paper 1: "Effect of Knowledge Services on Organizational Performance based on the Concept of Balance Score Cards: Evidence from South Korea" by **Heon-Hwi Lee, Jae-Woong Jeong, Hun Park*** • Paper 2: Exploring firms' endeavours in adopting circular economy - a case study of a leading glass manufacturer in Taiwan" by **Sirirat Lim, Perpétue Cornet** • (Online)Paper 3: "Construction of Research Model of Tourism Function System under the Background of Smart Tourism Development" by **Yu yi** • Paper 4: "Finding out user characteristics by metaverse	**Offline Chair: Junic Kim(KonKuk University, Korea)** **Online Chairs: RAN GuangGui (GUIZHOU UINIV., CHINA), LACE Natalja(RIGA TECHNICAL UNIVERSITY, LATVIA) and HONG Yun (GUIZHOU UINIV., CHINA)** • Paper 1: "Science, technology and innovation strategies for local government" by **Saimi Woo** • Paper 2: "Digital Transformation and Continuous Improvement as a Catalyst for Sustainability and Open Innovation" by **ROBERTSONE Galina, LAPINA Inga** • Paper 3: "6D Model to foster design creativity: Analysis of design creativity instructional model for higher education" by **Youbin Kim and Junic Kim*** • Paper 4: "Finding opportunities to improve the COVID 19 self quarantine policy of S.Korea based on inbound foreign students' experience" by **Ma Xinton, Kim Taesun**	

7. 08(Fri.)	**Programs**	***Venue: Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK**			
	Korean Rail Industry" by **Choi, Jeeyeon, Jae-Hwan Park, Steve Evans**	the context of digital transformation of work: conceptual model" by **ROSA Angelina, LOBANOVA Liudmila**	platforms" by **Jinwook Hong, Jungwan Han** • Paper 5: "Positioning as a Catalyst Towards Innovations" by **STRAUSA Evita, ENCE Enno, GAILE-SARKANE Elina** **Honor Discusser: Bo Yang**	• Paper 5: "New Possibilities of knowledge Innovation and human resource development Generated by Self-Reflection at COVID-19" by **Naomi Kinoshita, Yusuke Tanaka & Yuri Sadoi** **Honor Discusser: Ulrich Witt**	
15:00~15:30	Coffee Break ★ **Coffee and dessert will be provided in Faraday 001.** **& SOI 2022 Award Committee Meeting(only for 6 committee members) in Faraday Lecture Theatre.**				
15:30~17:00	**General Meeting of SOI** **•Venue: Faraday Lecture Theatre, Faraday Building, Swansea University, Singleton Park Campus** ***Presiders: KyungBae Park(SangJi University, Korea) & Yuri Sadoi(Meijo University, Korea)** **Onlin participation: Zoom** **Zoom link: https://swanseauniversity.zoom.us/j/96751922599?pwd=K2hxTzUyeXB0YUlPR0JYRTl2VUFmZz09** **Meeting ID: 967 5192 2599; Passcode: 843211** **Audience Facebook Live: Open Innovation-first** Method: [**Friends Search** → "**Open Innovation-first**" → Select the search result with the name of "**Open Innovation-first**" → add friend → visiting the live videos] **Open Innovat...**  **Open Innovation-first** * **Best Paper(Best Paper/Outstanding Paper) Award Ceremony**				

7. 08(Fri.)	Programs	*Venue: Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK	
	***Appreciation Plaque Ceremony** ***for SOI 2022 Organizing President, Hosting Chair, Vice-hosting Chair, and special appreciation for prof. Natalja Lace** ***Important Decision Issues** ***including SOI 2023, SOI 2024 & SOI 2025 planning, new honorable advisory members and board members inviting** **Notice of SOI & Department of Economics, Management, Institutions (DEMI) of the University Federico II of Naples(UNINA) 2023 Conference**  • Hosted by Department of Economics, Management, Institutions (DEMI) of the University Federico II of Naples(UNINA) *Hosting Chair: Prof. Valentina Della Corte & Vice hosting chair: Dr. Giovanna Del Gaudio • Organized by Society of Open Innovation: Technology, Market, and Complexity (SOI) *Organizing President: Prof. Dr. JinHyo Joseph Yun •Theme: New Way of Open Innovation and Open Business Model after Pandemic for the Recovery of World Economy • Date: July 12(Wed.) ~ 15(Sat.), Conference Days, 2023, University Federico II of Naples, Naples, Italy *July 10~11, Open Innovation Academy of SOI 2023 Summer School Lecture Days;	
18:00~	**Gala-Free & Inviting Dinner** **Venue: Grape & Olive(27th floor with panoramic view over Swansea Bay)**		

7. 08(Fri.)	Programs	*Venue: Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK	
	Address: The Tower, Trawler Rd, Maritime Quarter, Swansea SA1 1JW, UK; +44 1792 462617 ***Presiders: SungYong Choi(Hanyang University, Korea), Giovanna Del Gaudio(University of Naples Federico Ⅱ, Italy)**  *We will contact the participants separately. * Gala-Free & Inviting dinner is for thanks to the contribution of all special session chairs + contributors for organizing special sessions, general sessions and participants(in advance booked for 50 seats & more possible). * Shuttle bus waiting until 17:00 at Swansea Univ. Singleton Park Campus (for bus parking lot, please refer to Appendix 2.) & take the path from Swansea Univ. Singleton Park Campus -> Grape & Olive *After dinner, there is no shuttle bus, the Marriott Swansea Hotel is nex to the dinner venue. **Audience Facebook Live: Open Innovation-third** Method: [**Friends Search** → "**Open Innovation-third**" → Select the search result with the name of "**Open Innovation-third**" → add friend → visiting the live videos] 	

7.09(Sat.)	Programs		*Venue: Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK						
Time	Faraday Lecture Theatre		Faraday Room B		Faraday Room C		Faraday Room D		
	Online Presenters (Zoom)	Online Audience (Facebook Live)	Online Presenters (Zoom)	Online Audience (Facebook Live)	Online Presenters (Zoom)	Online Audience (Facebook Live)	Online Presenters (Zoom)	Online Audience (Facebook Live)	
	Zoom link: https://swanseauniversity.zoom.us/j/96751922599?pwd=K2hxTzUyeXB0YUIPR0JYRTI2VUFmZz09 **Meeting ID: 967 5192 2599 Passcode: 843211**	Facebook Live: Open Innovation-first Method: [Friends Search → "Open Innovation-first" → Select the search result with the name of "Open Innovation-first" → add friend → visiting the live videos] 	**Zoom link:** https://swanseauniversity.zoom.us/j/92718501281?pwd=dDh5NGcvYjA4SFp3WWRPak5wamsrQT09 **Meeting ID: 927 1850 1281 Passcode: 160550**	Facebook Live: Open Innovation-b Method: [Friends Search → "Open Innovation-b" → Select the search result with the name of "Open Innovation-b" → add friend → visiting the live videos] 	**Zoom link:** https://swanseauniversity.zoom.us/j/99179549674?pwd=dkgxdTUrKzlsWTFVOEtrcG9qaDI2Zz09 **Meeting ID: 991 7954 9674 Passcode: 702653**	Facebook Live: Open Innovation-third Method: [Friends Search → "Open Innovation-third" → Select the search result with the name of "Open Innovation-third" → add friend → visiting the live 	**Zoom link:** https://swanseauniversity.zoom.us/j/98797044207?pwd=azhIL0hubG1temMyZzM1d3RwT0FlZz09 **Meeting ID: 987 9704 4207 Passcode: 740094**	Facebook Live: Open Innovation-d Method: [Friends Search → "Open Innovation-d" → Select the search result with the name of "Open Innovation-d" → add friend → visiting the live videos] 	
09:00~10:30 **Poster Presentation Prize Money would be awarded for every conference room's with 3 best posters.** **Award: $100/per poster**	**Poster Session** **Chairs: DaeCheol Kim(Hanyang University, Korea), Youeil KIM (KISTI, Korea) & Sangwoo KIM(KISTI, Korea)** • Paper 1: "Protected nature, participation, and open innovation with tacit knowledge: The way to comedy of commons of new business model" by **JinHyo Joseph Yun*, Xiaofei Zhao, KyungBae Park, Valentina Della Corte, Giovanna Del Gaudio**		**Poster Session** **Chairs: Dilshad Jahan (Swansea University, UK) & Choong-Sik Chung (KyungSung University, Korea)** • Paper 1: "How can medical device companies catach-up by open innovation strategy? Evidence frim Korea" by **Dongwoo Kim, Kwangsoo Shin** • Paper 2: "Study on the open innovation signal in financial		**Poster Session** **Chairs: Bo Yang(Swansea University, UK) & Euiseob Jeong(KISTI, Korea)** • Paper 1: "A Case Study on the Effect of Knowledge Services on Business Performance according to the Firm Technology Level: Evidence from South Korea" by **Minji Kim, Jinwoo Sim, Hun Park*** 		**Poster Session** **Chairs: Staffen James(Southwales University, UK) & KwangHo Jung(Seoul National University, Korea)** • Paper 1: "Does digital finance empower carbon emission reduction? Evidence from Chinese cities" by **Hui Xu, Xin Liu*** • Paper 2: "Effects of Chinese carbon reduction policies on		

7.09(Sat.)	Programs	*Venue: Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK			
Evaluating Method: Every visitor would be given three heart memos before enter each room, then after visiting the presentation, you can choose the best three posters in every room and paste your heart memos on those posters. Poser session chairs would account the final results.	• Paper 2: "Mapping the evolution of digital transformation: A bibliometric review" by **Qingwei Zhang, Maoxi Yang, Xiangmeng Zhang, Guangqi Gao*, Zhongwei Hou** • Paper 3: "Modeling and Simulation of Open Innovation Micro Dynamics in Cost, Benefit, and Time-Lag" by **JinHyo Joseph Yun, Zhao, Xiaofei, Jeong, Eui Seob, Ahn, HeungJu, Park, KyungBae** • Paper 4: "Research on industrial enterprise digitization evaluation system based on systems Engineering" by **Yue Chang, Jun Zhang** • Paper 5: "The Evolutionary Trend and Network Characteristics of Global Hubs of STI-- Based on Big Data Analysis and Mining Technology" by **Xu Bai, Peng He, Di Cao, Jinxi Wu*** • Paper 6: "Open Standards Processes and Agile Governance in Evolution of OSS Platforms:	statement of firms" by **JinHyo Joseph Yun*, BongHwan Kim*, Xiaofei Zhao, EuiSeob Jeong, Joonggi Ahn** • Paper 3: "Configuration path of industrial digital transformation from the perspective of regional innovation ecosystem" by **Xinwei Ye, Lei Ma & Kaitong Liang** • Paper 4: "Innovation of International Cooperation Mechanism and Governance System for High-Quality Development of the Belt and Road Initiative" by **Si QI, Li Fen REN** • Paper 5: "Study on the Renovation of Smart Community Service Facilities for the Aged in Mountainous City" by **Honggang TANG, Shuwen XIANG, Wenyao XIAO** • Paper 6: "How does Adolescents' Usage of Social Media Affect	• Paper 2: "An Introduction to R&D Project Valuation Model and System" by **Hun Park, Hyunwoo Park, Jongtaik Lee** • Paper 3: "Digital innovation path of traditional manufacturing industry—A case study from ANSTEEL" by **Zihao Che** • Paper 4: "An evolutionary game research on value co-creation behaviour of digital patent platform" by **Xiaojing Huang, Lei Ma, Rao Li & Zheng Liu** • Paper 5: "The Perspective of Smart Education for Foreign Language Teaching and Management in Tertiary Education" by **SHEN Lin, Jing HUANG, Yuan HUANG, ZHOU Jie*** • Paper 6: "Digital transformation of science and technology development: A systematic literature review and future research agenda" by **Ben Zhang**	carbon emission-Based on text mining" by **YANG Da, DING Chuan*** • Paper 3: "Analysis of regional innovation practices in Japan: the role of foreign engineers" by **Yuri Sadoi** • Paper 4: "Geo-economic factors of regional innovation: the case of Taiwan and Japan" by **Yuri Sadoi, Lih Ren Li, Kuanju Lin & Cheng Wu** • Paper 5: "Servitization of Service providers with Open Innovation Consideration" by **Chulok Ahn, ByungYun Bae, Sungyong Choi*** • Paper 6: "The Effect of R&D Management Competency on Researchers' Satisfaction: Based on the Characteristics of Institutes" by **Byung Yong Hwang*, Narae Lee, Sung Hun Park, Mee Hyang Chang** • Paper 7: "An empirical study on Z-generation's consuming motives and attitude towards	

7.09(Sat.)	**Programs**	***Venue: Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK**			
	An Empirical Study on Python Community" by **Tao LI & Ma Lei** • Paper 7: "Digital empowerment in rural revitalisation" by **Yun Zhao, Huijie Yuan & Ting Yang** • Paper 8: "Which Factor Is More Important For M&A Performance of Biopharmaceutical Firms?: Capability and Relationship-Related Factors" by **Eundgo Kim, Jimin Choi, Namjun Cha*, Kwangsoo Shin** • Paper 9: "The Optimal R&D configuration strategy under uncertainty: Comparison between innovative and non-innovative firms" by **Eungdo Kim*** • Paper 10: "Digital transformation in the R&D planning and innovation policy: Comparison between China and European Union" by **Ben Zhang** • Paper 11: "Impacts of COVID-19 on WVC incidents in the Expressways of South Korea" by **Hyomin Park, SangDon Lee** • Paper 12: "The Finance Public Service System with Digital Transformation for International	Their Dietary Satisfaction?" by **Harry Jeong; Kwangsoo Shin*** • Paper 7: "Exploring Diverse Types of Residential Treatment Centers for COVDI-19 in South Korea" by **Jaeyong Lee & Kwangho Jung** • Paper 8: "Could Riga Become a Smart Tourism Destination without Being Sustainable in the Era of Digital Transformation?" by **LIU Yuan Yuan , LACE Natalja, Ling WU*, CHEN Lu Lu** • Paper 9: "Research on Builder difference and Development Strategy of Industrial Parks from the Perspective of Innovation Ecosystem" by **Chaonan Yi, Lei Ma*** • Paper 10: "Improving an online shopping platform design based on the user experience of the elderly" by **Zhou Chao, Kim Taesun** • Paper 11: "Two-pronged Approach: Research on the	• Paper 7: "Patent lawsuit risk early-warning system based on patent mining: A case of Artificial Intelligence" by **Chenxu Ming, Ben Zhang*** • Paper 8: "Predicting insolvent companies and analyzing factors influencing insolvency using auto-encoder" by **Chan-Ho Lee, Ji-Hye Choi, Min-Seung Kim, Yong-Ju Jang, Sun-Hong Lee, Jeong-Hee Lee, Tae-Eung Sung*** • Paper 9: "Job Satisfaction and Job Autonomy in Korean Science and Technology Research Institutions" by **Jineui Hahm, Kwangho Jung** • Paper 10: "Business Model Innovation for Riga as a Sustainable Smart Tourism Destination after the COVID-19 Pandemic" by **LIU Yuan Yuan, LACE Natalja, Ling WU*, CHEN Lu Lu** • Paper 11: "Regional Pollution and Environmental Investment of	electric vehicles in China" by **ZHOU Tao, CHENG Rui, BAI Yu, ZHONG Yuan, CHEN Ya Mei, YUAN Zhong Yi, DENG Ying Xue, YUAN Mao Xiang, LIU Yuan Yuan*** • Paper 8: "Predicting Tourist Numbers by Applying Big Data? An Empirical Research based on 2SLS" by **LIU Yuan Yuan, Fang-Mei Tseng*, Yi-Heng Tseng** • Paper 9: "The effect of green innovation on financial performance through double-mediation of innovation and non-financial performance" by **Yuhan Liu, Choo Yeon Kim, Jae Wook Yoo*** • Paper 10: "Rediscovering patriarchal leadership: Focusing on Chinese IT companies" by **Kexiang Zhao and Junic Kim*** • Paper 11: "Influence of board power of non-actual controller on green governance of state-	

7.09(Sat.)	**Programs**	***Venue: Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK**			
	Education in the Post-COVID-19 Era" by **HONG Yun, Yu Zhou*** • Paper 13: "Closing the Global Opportunity Gap in Open Innovation based STEM Education for Displaced Youth: A Curriculum for Ugandan Children" by **Minseo Jung & Steve Goldblatt** • Paper 14: "Analysis of Financial Value of Public Company with e-Commerce Platforms: The case of Affirm Holdings" by **Minseo Jung, Omri Even-Tov** • Paper 15: "Determining the Priorities of Potential Markets fro Brain Imaging Technigues: In Cognitive Neurscience" by **Yuhua Huang & Jonathan C. Ho** • Paper 16: "The relationship and knowledge sharing and technology readiness in regional innovation system" by **Junghee Han**	Influence of the Interaction between Green Contracting and CSR Management Committee on Green Innovation" by **Li Weian, Zhou Ning** • Paper 12: "A Study on the Role of Female Workforce in Korea's ICT Industry" by **Dae Soo, Choi** • Paper 13: "Asymmetries and Macroeconomic Impact of Oil Price Transmission in Oil-Exporting Emerging Economies" by **Emmanuel Agboola, Rosen Chowdhury, Bo Yang** • Paper 14: "Does Energy Poverty Hinder Reduction of Carbon Emissions? The Case of China" by **Jian Yang, Xin Liu*** • Paper 15: "Relational view and open innovation: implications for theory and practice" by **Valentina Della Corte, Giovanna Del Gaudio, Fabiana Sepe, Enrico Di Taranto**	SOEs in China: Political rent-seeking or Stakeholder Maintenance?" by **Weian Li, Wendi Hou** • Paper 12: "Prediction of S hotel Occupancy based on Web search Data" by **MENG Yun, LIU Yuan Yuan** • Paper 13: "Open Innovation Dynamics and Evolution in the Smart Payment Industry - comparative analysis among Daegu, Cardiff, and Nanjing" by **JinHyo Joseph Yun(Corr.), Xiaofei Zhao, Lei Ma, Zheng Liu, Bo Yang** • Paper 14: "Prediction of community-level seasonal changes based on detailed climate change scenarios in Korea" by **Sang-Don Lee** • Paper 15: "Rediscovering patriarchal leadership: Focusing on Chinese IT companies"by **K exiang Zhao and Junic Kim***	owned listed companies" by **Weian Li, Minghui Yi** • Paper 12: "Factors affecting successful clinical trial" by **Eungdo Kim, Sungjin Park, Jaehoon Yang*, Kwangsoo Shin** • Paper 13: "Quadruple Compass of Business Model Design, and Innovation: Design Thinking for Creative Open Innovation, and Open Business Model" by **Jinhyo Joseph Yun*, Juhyun Eune*, Xiaofei Zhao** • Paper 14: "Open innovation and artificial intelligence for senior citizens" by **Valentina Della Corte, Giovanna Del Gaudio, Enrico Di Taranto** • Paper 15: "Smartness in tourism destinations. A literature review"" by **Valentina Della Corte, Giovanna Del Gaudio, Fabiana Sepe, Enrico Di Taranto**	
					*Grey Color papers → Registration required before presentations.

7.09(Sat.)	**Programs**	***Venue: Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK**	
10:30~11:00	**Poster Presentation Award Ceremony** **•Venue: Faraday Lecture Theatre, Faraday Building, Swansea University, Singleton Park Campus** ***Presiders: Valentina Della Corte((University of Naples Federico Ⅱ, Italy) & Hun Park(KISTI, Korea)** **Onlin participation: Zoom** **Zoom link: https://swanseauniversity.zoom.us/j/96751922599?pwd=K2hxTzUyeXB0YUlPR0JYRTI2VUFmZz09** **Meeting ID: 967 5192 2599; Passcode: 843211** **Audience Facebook Live: Open Innovation-first** Method: [**Friends Search** → "**Open Innovation-first**" → Select the search result with the name of "**Open Innovation-first**" → add friend → visiting the live videos]  **Open Innovat...** **Open Innovation-first**	
11:00~17:00	**Cultural Tour "Tenby"** ***Presiders: XiaoFei Zhao(DGIST, Korea) & Zheng Liu(Cardiff Metropolitan University, UK)**	

7.09(Sat.)	**Programs**	***Venue: Faraday Building, Swansea University, Singleton Park, SWANSEA, SA2 8PP, Wales, UK**	

1. (Swansea Univ. Singleton Park Campus → Tenby) The bus departure

• Bus waiting until 10:50 at swansea Univ. Singleton Park Campus (for bus parking lot, please refer to Appendix 2.).

2. 14:00~ Participants may act for themselves,

• The Baggage can be loaded in the bus and participants can go to another place whenever you would like to.

3. 17:00~18:00(Tenby → The Marriott Swansea Hotel)

4. Only for the First 50 applicants who had sent the applications can participate in the tour.
Contact: openinnovationtmc@dgist.ac.kr or Zoom id:qiaoke@dgist.ac.kr
※ Lunch box & water will be provided;

Audience Facebook Live: Open Innovation-d

Method: [**Friends Search** → "**Open Innovation-d**" → Select the search result with the name of "**Open Innovation-d**" → add friend → visiting the live videos]

Open Innovation-d

Keynote Speech

July 06(Wednesday)

(Venue: Faraday Lecture Theatre, Faraday Building, Swansea University, Wales, UK; Time: 16:00~17:00)

Philip Cooke (Bergen University College, Norway)

•Theme: Crisis-resilience of enterprises and overcoming the negative consequences of COVID-19

KwangHo Jung (Seoul National University, Korea)

•Theme: Two Pillars of Innovation Process Research: From Motivational Theory to Institutional Perspective

July 07(Thursday)

(Venue: Faraday Lecture Theatre, Faraday Building, Swansea University, Wales, UK; Time: 11:30~13:00)

JinHyo Joseph Yun (DGIST & SNU, Korea)

•Theme: Regulation conversion at telemedicine of UK and Korea in digital transformation; -The way to growing up new industry with open innovation dynamics

Fred Phillips (University of New Mexico, USA)

•Theme: Climate Dialog, Climate Action: Can democracy do the job?

Andreas Pyka (University of Hohenheim, Germany)

•Theme: Growth, development and transformation. What is important now?

July 08(Friday)

(Venue: Faraday Lecture Theatre, Faraday Building, Swansea University, Wales, UK; Time: 11:00~12:30)

Ulrich Witt (Max Planck Institute of Economics Jena, Germany)
•Theme: Innovative Capitalism Needs Institutional Co-evolution

Venni V Krishna (University of New South Wales, Australia)
•Theme: STI Policies and the Rise of Chinese Universities: Entrepreneurship and Innovation Strategies

Bo Yang (Swansea University, UK)
•Theme: Open Innovation in time of Crisis

The digital envelope: From 'Fashion City' to digital 'Green Influence' to 'New Garden Cities' after COVID

Philip Cooke 1*

MohnCenter for Innovation & Regional Development, Western Norway Univ. of Applied Sciences, 5020 Bergen, Norway

Abstract: This paper explores digital reality replication for cultural consumption and green-digital open-system innovation, along with responsible, sustainable practices fashioned in a post-COVID-19 era. We address these after the dystopian effects of lockdown on global tourism and, in particular, the looming crisis of unsustainable 'overtourism'. The aim of this paper is to disclose problems and policies related to moderating consumption to more sustainable levels. The scope of the article tackles three fields: urban re-branding, fast fashion, and overtourism. Each problem area is analysed against the background of digital surveillance in the attention economy with the aid of a conceptual model. Accordingly, the principal objectives of this paper are to analyse key sustainability problem sources, evolutionary processes, and policy responses. The paper's originality and value lie in its recognition of tractable problem engagement through conceptual and practicable methods. This contribution also explores other consumption modes that tourists appreciate, namely, retail activity and its unsustainable "fast fashion" obsession. Finally, the paper analyses urban soft branding, the third tourism attractor within the niche touristic activity of the creative-cultural and gastronomic kind, which also features impulses that affect the perpetuation of unsustainable touristic practices. Thus, this contribution also assesses various studies on tourism futures that exploit digital media to assist in conserving both natural and cultural environments. Accordingly, we first narrate the soft re-branding of an "Art City" as a "Fashion City" and consider the example of green-digital innovation in the cultural milieu of Florence, Italy, in light of criticism of the unsustainability of "fast fashion". We consider which actions are envisioned or advised in the similarly "over-touristed" city of Venice. In a different vein, we consider whether the mobilisation of 'pop celebrity' performers such as audience engagers or influencers works for sustainable intervention through an assessment of the cultural interventions of Madonna in Lisbon. Finally, we anatomise "green" politics and policies for creative-cultural cities with the support of digital media to influence sustainable actions to moderate or, alternatively, revitalise polluted, congested, or otherwise over-touristed city centres. The greening of central Paris, Barcelona, Milan, and London offer a series of examples of this type of moderation and revitalisation.

Keywords: digital reproduction; open innovation; lockdown; overtourism; soft branding; influencers

Two Pillars of Innovation Process Research: From Motivational Theory to Institutional Perspective

Kwangho Jung

(Seoul National University)

Abstract:

Numerous theories of the innovation process have evolved into three main categories: (1) personal motivation, (2) institutions, and (3) political, economic, and social elements. This paper reviews how individual motivation theories and various institutional characteristics inherent in organizational formation and evolution influence innovation.

First, motivation theory has been attracting attention as a driving force that fosters and promotes the desire for innovation. Motivational theories about innovation are primarily composed of selfish and altruistic dimensions. Motivational elements of the innovation process are composed of pathways leading to innovation performance by the mediating effects of selfless and selfish motives on creativity, inclusiveness, and openness. Recently, the motivational approach applied to social and public innovation comes from altruism research. A suitable example is an approach that studies the impact of Public Service Motivation (PSM) and the connection path of innovation.

Second, institutional analysis on the innovation process includes research on collaboration and network analysis, searching for organizational structure for innovation, and institutionalization of innovation. As an appropriate example, open innovation originates from primitive institutional characteristics such as collaboration and networks. These essential institutional characteristics are structured and created as managerial software embedded in an organization, which emerges as an innovation-friendly or disruptive organization. Furthermore, institutionalizing innovation evolves an innovation-friendly system. Steve Jobs, for example, designed Apple as a global symbol of the innovation process, demonstrating his institutional leadership for future innovation. The origins of many innovation processes have illustrated that institutional leadership matters.

This paper considered only two dimensions of the pillars of the innovation process: motives and institutions. Further research can examine how political institutions such as democracy and civic participation, economic systems such as the ownership-based market economy and sharing-based market economy, and social characteristics such as mechanical and organic societies influence innovation. Furthermore, additional research should focus on lessons from a comparative historical perspective on how diverse individual and institutional factors interact with the political, economic, and social systems to promote or suppress the innovation process.

Keywords: Innovation Process, Motivation and Institutional Perspectives, Institutional Leadership

Regulation conversion at telemedicine of UK and Korea in digital transformation; -The way to growing up new industry with open innovation dynamics

JinHyo Joseph Yun

(DGIST & SNU, Korea)

Abstract

1. Introduction: Research Question, and Research Scope with Research Method

1.1 Research Question

With the appearance of the 4th industrial revolution, several new industries or markets are appearing, which are not complementary but substitute of modern markets[1]. Open innovation paradigm in the 4th industrial revolution are motivating to appear new industries which are different from existing industries such as carsharing industry compared to automotive industry, house sharing industry compared to hotel industry, telemedicine industry compared to hospital industry, or food delivery industry compared to restaurant industry[2].

Which is the role of the government to motivate the growth up of industries including modern industry and new industries in the 4th industrial revolution? In other words, we want to answer to the following research question.

What should the government do to motivate new industry such as telemedicine? deregulation or regulation conversion?

Medial providers, healthcare professionals, and patients frequently hear that telemedicine is not "the present" but the future even though after all, telemedicine technologies, the know-how, and the products are already here[3]. Even though telemedicine in south Korea is being prohibited, telemedicine is being adopted rapidly in USA with several key drivers of telemedicine such as 1) high-deductible insurance plans, 2) risk-based reimbursement contracts and reimbursement cuts, 3) increasing reimbursement and licensing, 4) switch to paperless medical records, and 550 high overhead costs for medical providers[3].

1.2 Research Scope and method

First, the concept model for regulation conversion in structure and process will be developed by the literature reviews on regulation, deregulation, regulation conversion, profit hospital or telemedicine. Second, the concept model of regulation conversion will be elaborated through focus group interviews on for-profit hospital and telemedicine <Appendix 1>. From the focus group interviews, the difference between the deregulation for the existing firms, and the regulation conversion for new firms which are in emerging or converted new industries will be updated.

Swansea University Prifysgol Abertawe
Society of Open Innovation Technology, Market & Complexity
DGIST

Climate Dialog, Climate Action: Can democracy do the job?

Fred Phillips

University of New Mexico, Albuquerque, New Mexico, USA

Abstract

The latest IPCC report forcefully states that immediate, decisive, and largescale actions are needed to avert climate catastrophe. This essay presumes that democratic governments are best and most desirably positioned to take these actions. Yet in the countries most pivotal to global climate, significant voting blocs are uninterested in environmental issues. The essay urges adding bottom-up dialog between environmental and anti-environmental voters, to current and future topdown technocratic "solutions." To make this combination result in a unified pro-environment electorate, we must understand: religious objections to environmentalism; the capital-vs.-knowledge strife that slows polluting corporations' green transitions; and the psychological mechanisms that can make inter-group dialog fruitful

Keywords: Climate; Democracy; Religion; Evangelism; Environment

Economic Growth, Structural Change and Transformation: What's important now?

Andreas Pyka

University of Hohenheim in Stuttgart, Germany

Abstracts

Economics today is under sever critique because of the limited abilities to provide answers concerning long term economic development. Because of the prevailing quantitative orientation and the focus on substitution, mainstream economic theory is not capable to include qualitative developments like structural change and transformation.

Modern evolutionary innovation economics offers an alternative and places central qualitative change triggered in complex innovation systems. However, also modern evolutionary innovation economics falls short when it comes to transformative change encompassing the whole economic systems including the interaction between supply and demand sides.

The current developments in the knowledge-based bioeconomy are an example par excellence for a comprehensive transformation which has the power not only to overcome the lock-in into fossil-based technologies but to contribute substantially to new patterns of production and consumption and to achieve higher degrees of sustainability.

In order to understand better this crucial transformation processes and to derive adequate policy recommendations, innovation economics needs to address the ability of innovation systems to pass tipping points in order to fundamentally change the patterns of production and consumption, before the Earth climate system reaches its tipping point which would go hand in hand with devastating and irreversible effects.

Innovative Capitalism Needs Institutional Co-evolution

Ulrich Witt

Max Planck Institute of Economics, Jena and University of Jena, Germany

Abstract

The pro-active transformation of the economy through major innovative breakthroughs is the characteristic of innovative capitalism. New product and services lines and new technologies create ever new business opportunities and secure continued profitability, employment, and growth. Major innovative breakthroughs are usually complemented by pro-active institutional adaptations. Supply chains are rearranged through entrepreneurial initiative. Government agencies plan and orchestrate adaptations of systemic infrastructure. However, the repercussions of major innovative breakthroughs can also trigger structural changes that cause social crises and/or environmental damages and ecological hazards. They, in turn, call for institutional adaptations in the regulatory framework of the economy and political governance structure. These are usually re-active adaptations as the critical side effects of innovations only turn out with a delay.

Both the pro-active innovation transformation and the re-active institutional adaptations are inherent features of restless innovative capitalism that is always in search of new business opportunities. But the two features and the very causal nexus between them are not equally well researched and understood. The industrial transformations and the complementary adaptation requirements regarding supply chains and systemic infrastructure have been broadly discussed and explained as, for example, the works on the breakthrough of general purpose technologies show (see Bresnahan 2010). By comparison, the re-active institutional adaptation needs are not so well understood, and the question of how their emergence is causally connected to the innovative dynamics has gained very little attention.

For that reason the present paper is devoted to discussing the re-active institutional co-evolution needs of innovative capitalism and why they recur over and again. The key to both phenomena can be found, it will be argued, in the fact already described by Schumpeter (19349 that innovations only temporarily raise sales and profits. When sales growth slackens and competitive pressure on profits increases, producers often seek to create new products and technological innovations so as to restore profitability and growth. However, in the case of major innovative breakthroughs a host of innovative activities occur that eventually develop an impact on the formal and informal institutions in which the economy is embedded. The result can be critical societal and/or ecological developments that are often not easily attributable to the innovations that caused them.

Can we Build Innovation Systems with Weak Science and Technology Systems? Some Insights from Successful Cases in Asia

Venni V Krishna

Professorial Fellow, University of New South Wales, Sydney, Australia & EIC, Science, Technology and Society

Abstract

The post-war era, particularly from the mid-1980s, can be seen as a turning point for various Asian countries. Japanese success in industrialisation based on technology transfer from the industrialised West and evolution of unique endogenous scientific and technological capacities led scholars to conceptualise 'late industrialisation' and 'catching up' strategies. Alice Amsden's book on Asia's Next Giant: South Korea and Late Industrialization is probably the single most cited work on East Asian development. What has come to be known as 'Imitation to Innovation' was the main title of Linsu Kim's The Dynamics of Korea's Technological Learning. The technological dynamics in the region soon came be characterized as East Asian Miracle by the World Bank in the 1990s. In a large measure, this 'East Asian Miracle', led to some erroneous misconceptions on science, technology and innovation (STI) policies. Various writings and commentatorsfrom Africa, Asia and Latin America advocated to follow the path of East Asian Dragons. These writings begun to assume that countries can build innovation systems or dynamic technological sectors of economy within respective countries, without paying much attention to building and strengthening science and technology (S&T) systems including higher educational institutions. S&T systems invariably include scientific and technological communities or specialist research groups advancing knowledge; communities oriented to strengthen research capacities and innovation potential; scientific journals and professional societies; research publications; higher educational institutions; and public and private R&D laboratory capabiltieis. With hindsight, we have now systematic evidence to suggest the role of various actors and agencies in STI policies behind the success of innovation systems or dynamic technological sectors (from the perspective of sectoral innovation systems). In other words, there are now clear STI policy signals which point to the significance of building science and technology systems before fully embarking on innovation policies. Drawing on some exemplary cases, this presentation will explore the importance of S&T systems in the context of developing countries. How some economies (for instance agriculture-based economies) vary from East Asian Dragons? In the current phase of pandemic, how some countries have become self-reliant in health security compared to others? Why some countries within Asia were relatively more successful than others? To what extent S&T systems in these exemplary cases vary with other developing countries?

Open Innovation in time of Crisis

Bo Yang

** Swansea University, UK*

Abstract

The COVID-19 pandemic has caused huge and disruptive technological changes in the healthcare sector, transforming the way businesses and societies function. To respond to the global health crisis, there have been numerous innovation projects in the healthcare sector, including the fast design and manufacturing of personal protective equipment (PPE) and medical devices, and testing, treatment, and vaccine technologies. Many of these innovative activities happen beyond organizational boundaries with collaboration and open innovation. In this paper, we review the current literature on open innovation strategy during the pandemic and adopt the co-evolution view of business ecosystems to address the context of change. Based on a detailed exploration of the COVID-19-related technologies in the UK and global healthcare sectors, we identify the key emerging themes of open innovation in crisis. Further discussions are conducted in relation to each theme. Our results and analysis can help provide policy recommendations for the healthcare sector, businesses, and society to recover from the crisis.

Keywords: open innovation; ecosystem; digitalization; COVID-1

SOI & Swansea University 2022 Conference

July 6(Wed.) ~ 9(Sat.), Conference Days, 2022
Swansea University
(Faraday Building, Singleton Park Campus), Wales, UK
& Online(Zoom)

July 06 (Wednesday)

July 06 (Wednesday)

Venue: Faraday Lecture Theatre, Faraday Building, Swansea University, Wales, UK, 14:00~15:30

Digital Transformation with Regulation Conversion

Offline Chair: JinHyo Joseph Yun(DGIST, Korea)

Online Chair: WANG Ting(GUIZHOU UINIVERSITY, CHINA)

- Paper 1: "Regulation conversion at telemedicine of UK and Korea in digital transformation; -The way to growing up new industry with open innovation dynamics" by **JinHyo Joseph Yun*, Xiaofei Zhao, Yang Bo, Zheng Liu**
- (Online)Paper 2: "The Effects of Regional Eco-economic Coordinated Development on Population Mobility" by **Sitong Zhang**
- (Online)Paper 3: "Study on the differences of industrial development strategies in regional innovatin ecosystem under niche theory" by **Baoqing Zhu**
- Paper 4: "A Comparative Study of Digital Government Policies in Denmark and South Korea - Focusing on the analysis of UN and OECD evaluation data –" by **Choong-Sik Chung, Hanbyul Choi, Youngmin Cho**
- (Online) Paper 5: "Economic Growth And Environmental Pollution: Testing The Kuznets Curve Based On Embodied Carbon" by **WANG Ting*, MO Shu**

July 06 (Wednesday)

Venue: Faraday Room B, Faraday Building, Swansea University, Wales, UK, 14:00~15:30

Digital Transformation and Smart Governance in the Context of Big Data(1) & Open Innovation and Business Model in Biomedical Industry

Online Chairs: QI Si(GUIZHOU UINIVERSITY, CHINA), ZHOU Li Li (GUIZHOU UINIV., CHINA)

Offline Chair: Kwangsoo Shin(The Catholic University of Korea, Korea)

- (Online)Paper 1: "Paths to Develop Urban Digital Economy : A Quadruple Helix Framework" by **Chaonan Yi, Lei Ma, Kaitong Liang, Xiaojing Huang**
- Paper 2: "When do firms in biotechnology industry purpose open innovation? The perspective of small-medium enterprise" by **Changhyeon Song, Kwangsoo Shin***

- Paper 3: "Varieties of Regional Innovation Systems (RIS) around the world and Catch-up by Latecomers" by **Jinhee Kim & Keun Lee**
- (Online)Paper 4: "Research on tax collection and administration in e-commerce in the context of big data" by **ZHOU Li Li, Xinru Peng, Qiong Shi, Mei Wu, Xinran Liu**
- Paper 5: "ESG management of Food Firms in Europe and Korea for innovation ecosystem to create future together" by **Harry Jeong, Changhyeon Song, Kwangsoo Shin***

July 06 (Wednesday)

Venue: Faraday Room C, Faraday Building, Swansea University, Wales, UK, 14:00~15:30

Digital Transformation and Smart Governance in the Context of Big Data(2)

Online Chairs: CUI Hai Yang(GUIZHOU UINIVERSITY, CHINA), ZHOU Jie (GUIZHOU UINIVERSITY, CHINA)

Offline Chair: KwangHo Jung(Seoul National University, Korea)

- Paper 1: "Exploring the implications of innovation lags from the delays in change inherent in organizational, institutional, and cultural changes" by **Kwangho Jung**
- (Online)Paper 2: "Grey relational analysis for numerical big data: an improved model and a case for physical fitness test" by **YANG Yong, LI Qiao Xing*, WU Jun Fang**
- (Online)Paper 3: "The Environmental Regulations may Reduce Pork Prices : A Case Study in China" by **Liu Xin*, Li Yunxuan**
- (Online)Paper 4: "Customer concentration and Corporate Financial Asset Investment: Empirical Analysis Based on Chinese Non-financial Listed Firms" by **Yong Wang, Xiangdong Liu, Weizhen Meng, Yun Peng, Duo Liu**
- Paper 5: "Industry Structure of Ivory Coast" by **Jae-Hwan Park, Choi, Jeeyeon**

July 06 (Wednesday)

Venue: Faraday Room D, Faraday Building, Swansea University, Wales, UK, 14:00~15:30

Digital Transformation and Smart Governance in the Context of Big Data (6)

Online Chairs: WANG Xiu Feng (GUIZHOU UINIVERSITY, CHINA), LIU Yi Zhi(GUIZHOU UINIVERSITY, CHINA)

Offline Chair: Sungyong Choi(HanYang University, Korea)

- Paper 1: "Impact of risk management on innovation efficiency using a two-stage DEA-Tobit Model" by **Minjeong Oh, Hyundong Nam, Yunsik Choi, Sungyong Choi***
- (Online)Paper 2: "Research on Adoption Behavior of Mobile Medical Users——From the Perspective of Push-Pull-Anchor Analysis Framework" by **Liu YIZHI, Lu Xuan**
- (Online)Paper 3: "Exploring the Institutional Context of Strategic Alliances and Influencing Roles of Governments Impacting Alliances' Synergies" by **CIRJEVSKIS, Andrejs**
- Paper 4: "Adopting a Formula Funding Model to Enhance Cooperation of Triple Helix" by **Sangjae Pyo, Hyoung Ryul Ma, Kyoungmi Jang, DongYeun Kwak, Dong Hoon Oh***
- Paper 5: "Study on Growth of Korean Venture Businesses in Local Area with Pohang City Case" by **Lee Sang-Young*, Moosup Jung**

Regulation conversion at telemedicine of UK and Korea in digital transformation; -The way to growing up new industry with open innovation dynamics

JinHyo Joseph Yun

(DGIST & SNU, Korea)

Xiaofei Zhao, Bo Yang, Zheng Liu

DGIST, Korea; Swansea University, UK; Cardiff Metropolitan University, UK

Abstract

1. Introduction: Research Question, and Research Scope with Research Method

1.1 Research Question

With the appearance of the 4th industrial revolution, several new industries or markets are appearing, which are not complementary but substitute of modern markets[1]. Open innovation paradigm in the 4th industrial revolution are motivating to appear new industries which are different from existing industries such as carsharing industry compared to automotive industry, house sharing industry compared to hotel industry, telemedicine industry compared to hospital industry, or food delivery industry compared to restaurant industry[2].

Which is the role of the government to motivate the growth up of industries including modern industry and new industries in the 4th industrial revolution? In other words, we want to answer to the following research question.

What should the government do to motivate new industry such as telemedicine? deregulation or regulation conversion?

Medial providers, healthcare professionals, and patients frequently hear that telemedicine is not "the present" but the future even though after all, telemedicine technologies, the know-how, and the products are already here[3]. Even though telemedicine in south Korea is being prohibited, telemedicine is being adopted rapidly in USA with several key drivers of telemedicine such as 1) high-deductible insurance plans, 2) risk-based reimbursement contracts and reimbursement cuts, 3) increasing reimbursement and licensing, 4) switch to paperless medical records, and 550 high overhead costs for medical providers[3].

1.2 Research Scope and method

First, the concept model for regulation conversion in structure and process will be developed by the literature reviews on regulation, deregulation, regulation conversion, profit hospital or telemedicine. Second, the concept model of regulation conversion will be elaborated through focus group interviews on for-profit hospital and telemedicine <Appendix 1>.

The Effects of Regional Eco-economic Coordinated Development on Population Mobility

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Abstract

Purpose/ Research Question

The vast majority of population mobility adapts to the changing ecological and economic environment, and it is linked to factors such as environment, customs, economy or family (Black et al, 2011). The main trend of population mobility in China is from west regions to east regions, from remote and underdeveloped areas to metropolitan areas. Areas with extreme net population outflows are generally willing to sacrifice the local level of ecological development in exchange for economic development, while areas with extreme net population inflows have to slow down economic development to protect the ecology due to pressurre from government policy and public opinion.

When analyzing the general trends of population migration in China, it is rarely found that the ecological environment itself is the single source of influence on migration, and most of them are based on the consideration of combination of local economic development level, education level, customs and other factors.

Key Literature Reviews (About 3~5 papers):

When discussing the relationship between regional ecological development and economic development, Xing, Xue and Hu (2019). points out that understanding the operating mechanism of the economy-resource-environment (ERE) system and evaluating its coordination level are of immense significance for sustainable urban development. Their work based on the CCDM show that the coordination of the economy scenario performs the worst, the environment scenario performs best in the short term and the resource scenario is considerably effective for the coordinated development of the urban ERE system in the long term. Arouri et al. (2012) indicate that in the long-run energy consumption has a positive significant impact on CO2 emissions, and they suggest that future reductions in CO_2 emissions per capita might be achieved at the same time as GDP per capita in the MENA region continues to grow. The empirical results of Chen et al. (2016) there exist long-run relationships between economic growth, energy consumption and carbon dioxide emissions for all countries.

Study on the differences of industrial development strategies in Regional Innovation Ecosystem under niche theory

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Abstract :

According to different geographical locations, the economic strength of adjacent regions is also different, the industrial development direction and technological generation difference of each region are different, and the innovation ability and value realized by technological innovation of each region are also different.

Based on Niche Theory and patent navigation, this paper analyzes the industrial development direction and technological generation difference of each regional innovation ecosystem, and obtains the reasons for the imbalance of industrial development direction and technological innovation in each region.

At the same time, based on the internal mechanism of the coordinated development of regional innovation ecosystem, this paper analyzes the factors hindering the coordinated development of various regions at this stage, and around the existing factors and problems, uses patent navigation to analyze and change the innovation mode, and explores a new mode of the coordinated development of regional innovation ecosystem.

Key words: Niche, Regional Innovation, Ecosystem, Differences of Industrial Development, Coordinated Development

References:

Ghinoi, S., De Vita, R. Steiner, B., Sinatra, A. Knowledge Networks and the Role of Family Firms: The Case of an Italian Regional Cluster (2021). J. Open Innov. Technol. Mark. Complex. 2021, 7(3), 193; https://doi.org/10.3390/joitmc7030193

Liu, Z. (2021). The Impact of Government Policy on Macro Dynamic Innovation of the Creative Industries: Studies of the UK's and China's Animation Sectors. J. Open Innov. Technol. Mark. Complex. 2021, 7(3), 168; https://doi.org/10.3390/joitmc7030168

Jonek-Kowalska, I., Wolniak, R. (2021). The Influence of Local Economic Conditions on Start-Ups and Local Open Innovation System. J. Open Innov. Technol. Mark. Complex. 2021, 7(2), 110; https://doi.org/10.3390/joitmc7020110

A Comparative Study of Digital Government Policies in Denmark and South Korea

- Focusing on the analysis of UN and OECD evaluation data –

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Hanbyul Choi & YoungMin Cho

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Abstract

In the UN's e-Government survey and OECD's evaluation of digital government, Denmark and South Korea are always at the top of the list. Denmark continues to rank first in the world in the latest UN e-Government survey in 2018 and 2020. Furthermore, in the 2020 OECD digital government evaluation, it was ranked 4th in the world. South Korea has ranked first in the world three times in a row in the UN e-Government evaluation from 2010 to 2014, and recently ranked 3rd and 2nd in the UN e-government survey in 2018 and 2020, continuing to rank high. Next, in the 2020 OECD Digital Government Evaluation, it ranked first in the world.

As such, Denmark and South Korea are currently evaluated as world leaders in the field of digital government. Therefore, many countries around the world are paying great attention to the excellence of the digital government of these two countries. Many countries are looking for ways to upgrade their digital government level to a higher level by benchmarking the characteristics of the digital government policies of these two countries.

Therefore, the purpose of this paper is to draw implications for digital government policy by comparing and analyzing the digital government promotion policies of Denmark and South Korea, which are currently recognized as world leaders in the fields of e-government and digital government. To this end, the existing UN's e-government survey index and the OECD's digital government evaluation index were analyzed, and a new evaluation index was created. Based on this, a comparative analysis was conducted.

Key Literature Reviews:

The United Nations *E-Government Survey 2020: Digital Government in the Decade of Action for Sustainable Development* was launched on July, 2020 (UN, 2020). Since 2002, the United Nations has been evaluating the level of e-government around the world.

Economic Growth And Environmental Pollution: Testing The Kuznets Curve Based On Embodied Carbon

Wang Ting(Corr.)

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Abstract

The signing of the Paris Climate Accord has opened a new global climate change governance stage. As the world's largest carbon emitter, China is actively responsible for reducing emissions and proposed striving to achieve carbon peaks by 2030 and carbon neutrality by 2060. In the process of a continuous deepening of carbon emission reduction cooperation and the increasingly fierce carbon emission responsibility game, carbon emissions implied in trade are the focus of research in academic and practical circles, which have a significant impact on China's overall carbon emission reduction and carbon emission spatial pattern. Based on existing research, this paper analyzes the relationship between environmental pollution and economic growth from the perspective of trade embodied carbon emissions and tests whether the Kuznets curve hypothesis of embodied carbon emissions in China as a whole and each province exists. The Kuznets curve is subdivided into stages, and the time required for different regions to reach the turning point of embodied carbon emissions is studied, to guide the reasonable grasp of the direction and intensity of carbon emission reduction in the process of economic development.

In an empirical study in the 1990s, Grossman & Krueger (1995) found that the relationship between per capita income and environmental degradation over time follows an "inverted U-shaped" characteristic, which is called the environmental Kuznets curve. With the deepening of research, scholars further discovered that there are significant differences in environmental Kuznets curves among different pollutants, and named them according to the types of pollutants, including the carbon dioxide Kuznets curve (CKC). Due to its particularity, there is widespread controversy over the research results of CKC in the world. Many studies such as Maneejuk (2021) believe that there is an "inverted U-shaped" CKC, Pruethsan, et al. (2019), Li (2020), and others have obtained a monotonically rising CKC, in addition, Bazilian (2020) found that CKC Presents "N-type" and other forms.

Paths to Develop Urban Digital Economy : A Quadruple Helix Framework

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Abstract

Digitalization has become an important mode for regional economic development. Nonetheless, influenced by talents, firms, government, capital and other factors, the development of digital economy is unbalanced and faces many challenges in different regions. Several case studies about cities in China have been conducted with a quadruple helix model in the context of digital economy to explore their paths to develop digital economy, which provides experience for relevant regions in other developing countries.

Accompanied with scholars' gradual recognition, quadruple helix framework plays an important role in the rapid development of science and technology era. The spirals of university, government, enterprises are interconnected with each other and a regional innovation ecosystem has been cultivated, which promotes the nonlinear development of regional economy. Paredes Frigolett (2016) has made research intensively on the quadruple helix model, including the theoretical model, measurement method, analytical modeling and empirical research. Driven by the trend of "Innovation 2.0" to "Innovation 3.0", the continuous development of the quadruple helix model and innovation ecosystem theory has gradually influenced the thinking of industrial development. Miller (2016) has analyzed and considered the relationship among the quadruple helix under the open innovation ecosystem. Carayannis (2018) believes that through the interaction of resource flow and information transmission among the quadruple helix, independent subsystem formed by each helix can play the positive effects and fulfill the overall virtuous cycle. Barykin (2020) has proposed a concept of digital ecosystem and emphasized the leading role of digital technology in its formation. He concludes that the emergence of digital ecosystem is reasonable, and the direction is the cooperation between different types of economies. Saleh (2020) proposes that the development of regional economy can be promoted by optimizing natural resources and using technology. Tolstykh (2021) has chosen two different cities to study the sustainable development of regional economy in combination with ecosystem theory.

When do firms in biotechnology industry purpose open innovation? The perspective of small-medium enterprise

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Abstract

There has been a lot of research to date on the usefulness of open innovation strategies since Chesbrough(2003) first introduced a concept in his article. Open innovation is particularly important in areas where internal resources are scarce and rapid development is required. In particular, as biomedical industry requires a high level of technology and long development time, open innovation is regarded as an appropriate strategy.

However, not all firms can pursue an open innovation strategy. Some even don't want this. For SMEs that lack resources, open innovation may not always be a viable option. Government support are being implemented to strengthen the innovation capabilities of SMEs. Therefore, it is necessary to figure out which attributes SMEs prefer to open innovation.

Firms may have different external knowledge needs depending on the growth stage. In addition, the demand for external technology may vary depending on the technology capabilities firms have. Or, as the same firm enters different stages over time, the pattern of open innovation can change. As such, we are less concerned with the contextual and dynamic nature of open innovation. Therefore, we would like to investigate when and under what conditions firms attempt open innovation using data from Korean biomedical SMEs. Biomedical industry in Korea is rather a 'latecomer' compared to other high-tech industries (Yeom et al., 2021). It is expected that this study will provide significant policy implications by identifying the pattern of SMEs' open innovation in latecomer countries.

There are many studies that show that open innovation strategies have a positive impact on performance in the bio industry. Mazzola et al. (2016) examined how innovation and financial performance appear according to the types of open innovation (inbound, outbound, coupled) that biopharmaceutical firms pursue. However, less research is being done on what conditions biomedical firms pursue open innovation. Some studies partly covered this. It is known that biopharmaceutical firms mainly acquire technology from outside in the early stages of new drug development. (Su et al., 2016).

Varieties of Regional Innovation Systems (RIS) around the world and Catch-up by Latecomers

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Keun Lee(*Presenter)

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Abstract

Innovation is a key engine of economic growth. The National Innovation Systems (NIS) is a key concept in Schumpeterian economics, which is also applied for regional levels as a RIS. Lee and Kim (2022) find two different cases of RIS, such as slow catch-up (Penang), and fast catch-up (Shenzhen). The key differentiating factor between the two is the capacity of indigenous knowledge. This research generalizes this case-based finding to a global level by analyzing the data of 30 regions around the world, identifying diverse types of RIS and their linkage to economic growth.

30 regions are considered, including 7 in Europe, 4 in US, 13 in Asia (Shenzhen, Penang, Taipei, Tokyo, Beijing, Osaka, Seoul, Daejeon, Bangalore, New Delhi, Hong Kong, Shanghai, Singapore, etc), and three Latin American regions. Cluster analysis using RIS variable (knowledge localization, technological diversification, knowledge decentralization, local ownership of knowledge, and cycle time of technologies) is applied to classify 30 regions into 4 clusters, such as mature, mixed and two catching up RIS. Regression analysis is conducted to link the 4 groups to economic growth. Regions associated with two types of catching up RIS tend to show increasing level of knowledge localization and ownership, and thus to boast a faster rate of economic growth than the mature or mixed RIS groups.

Research on tax collection and administration in e-commerce in the context of big data

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Master, Guizhou University

Qiong Shi

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Mei Wu

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Xinran Liu

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Abstract

The development of big data promotes the progress of e-commerce transactions. As a new driving force for economic development, it creates huge market benefits. However, the huge market transaction volume brings new challenges and difficulties to the current tax collection and administration. The virtual, hidden and electronic characteristics of e-commerce transaction make the traditional tax collection and administration system stock the hit. This article will strengthen the supervision and coordination of network platform, innovative digital tax collection and administration mode based on the e-commerce tax legislation, tax collection and administration, creating the new concept of tax collection and administration, to solve the unclear tax elements, tax information asymmetry, weak awareness of voluntary tax, thus the feasibility measures are put forward for our country's reform of tax collection and administration and improvement of tax management's capacity.

First of all, from the perspective of big data, based on the current situation of China's e-commerce development, this paper explores the shortcomings of China's tax legislation, tax collection and management, tax supervision and other aspects and makes a systematic summary to dig out the deep reasons behind the problem of tax loss. Secondly, in view of the challenges faced in the tax collection and management process, this paper will make use of the advantages of the era of big data to put forward constructive optimization suggestions for improving China's tax policy system, promoting the integration and digitalization of e-commerce and electronic taxation, and building e-commerce tax data sharing platform.

ESG Management of Food Firms in Europe and Korea for Innovation Ecosystem to Create Future Together

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Abstract

In the post-COVID-19 era, ESG management that comprehensively considers the environment, society, and governance has become more important (Schwab and Malleret, 2020). ESG management is also becoming important in the food industry. Food firms of Asia such as Korea are latecomers in food industry. This is the same position in ESG management. Since the early 2000s, Europe has advocated sustainable management centered on stakeholders, not just for shareholders. Korean firms just started to introduce it from the late 2010s. Korean government set a goal to disclose sustainable management of all listed firms by 2030. There are a few studies that approach ESG management from the perspective of a latecomer that is chasing the food industry. This study aims to gain insight into whether Korean food firms as latecomers can learn from European experience (Casper, 2009) through a case study on ESG management of representative food firms in Europe and Korea.

Cooke(2015) focused on the climate change challenge faced by Central & Eastern European countries both those inside the European Union and those outside it. Europe, the United States, and China spend a lot of energy and emit enormous amounts of greenhouse gases. They must significantly reduce emissions under a global framework. Important thing is that public awareness of green is needed to achieve the results of 'green governance' in central eastern Europe (CEE) as well as EU and OECD countries to solve the problem of global warming.

Sánchez-Teba et al.(2021) analyzed scientific articles on the existence of women in the board of directors and created a bibliometric map for them. Their research revealed studies related to sustainability, corporate social responsibility (CSR), and has highlighted the very important characteristics of women on board of directors in the following context; empathy, open innovation, concern for the needs of interest groups and a heightened perception of risks.

Exploring the implications of innovation lags from the delays in change inherent in organizational, institutional, and cultural changes

Kwangho Jung

(Seoul National University)

Abstract

This study intends to examine various aspects of the lag phenomenon accompanying the advent of artificial intelligence society from organizational, institutional, and cultural perspectives. Organizational lag arises from the gap between management and technological innovations (Evan, 1966). In other words, organizational lag occurs when management innovation does not keep up with the degree of technological innovation. Compared with mechanical or closed organizations, organic or open organizations are more friendly to technological innovation and reduce the environment for organizational lag. Institutional lag represents when an innovative technology or idea comes out and the time it takes to adopt and adapt it. It takes a certain amount of time to adapt and adjust to a new phenomenon. The reason is that new technologies usually pursue rapid change beyond existing institutional logic or norms. Cultural lag explains the gap between rapidly changing material cultures and slowly changing immaterial cultures. Like technology, change in material culture naturally occurs faster than the speed of existing non-material institutions or norms. Cultural lag represents a gap in cultural adaptation to new technologies. For example, artificial intelligence technology that brings a new culture will entail a time lag that collides with the existing culture in various aspects. The cultural lag is likely to cause unexpected problems due to the spread of artificial intelligence. The above three dimensions of lags provide policy implications for understanding the various side effects of innovative technologies.

Keywords: Innovation function, organizational lag, institutional lag, cultural lag

Grey Correlation analysis for numerical big data: an improved model and a case for physical fitness test

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Jun-fang Wu

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Abstract

This paper provides an improved grey correlation model to analyze the correlation between physical fitness test items of students in a university in Western China.

: The grey correlation analysis proposed by Professor Deng Ju-long in 1985 is on the basis of the four axioms of grey correlation and it measures the varied trend similarity of the system factors by using the distance between the corresponding points on those sequences. Scholars have successively proposed various models of grey correlation degree which are respectively based on the distance, slope and area as well as their mixed mode[20,21], and they have been widely utilized in various social fields [22-24]. However, these traditional models are often used for correlation analysis with less data and less information. So, it has been an important topic to expand the grey correlation model for big data.

Based on Deng's model of correlation degree, we proposed an improved model of grey correlation analysis for numerical big data and analyzed its properties. The model is used to calculate the correlation between physical fitness test items of college students in a university.

Firstly, the point number of correlation coefficient which satisfies the threshold condition can be utilized to measure the strong correlation degree among those sequences under the situation of big data; Secondly, the threshold of the strong correlation ratio can be utilized to find the main factors of grey correlation and make the conclusion of correlation analysis be more targeted; Thirdly, the improved model has the characteristics of even pair symmetry, integrity and weak proximity, but it does not have normalization.

Research limitations/ Implications: The improved model of grey correlation for numerical big data can realize the correlation analysis on several factors with a large of samples and massive information, and it effectively expand the theoretical hypothesis and application scope of grey correlation analysis.

Keywords: Grey correlation analysis, Big data modeling, Strong correlation, Physical fitness test

The Environmental Regulations may Reduce Pork Prices : A Case Study in China

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Abstract

The "Central Environmental Protection Inspection" (CEPI) is an unprecedented stringent environmental regulation in China. It has had a significant impact on many industries. The objective of this study is to explore the relationship between CEPI and livestock industry. This study employed the Cobb-Douglas model to explore the impact of environmental regulation intensity, pollution in the production process of enterprises, and final product prices. we adopt the multi-period DID method to explore the impact of CEPI on pork prices, with monthly data from 2015 to 2018.

Understanding that stringent regulations will have a significant effect on polluting industries is not difficult. First, some industries will move from regions with stringent environmental regulations to those with less, thus triggering the "pollution haven" effect (Walter and Ugelow, 1979; Lu Yang, 2009; Ryschawy et al., 2014). Firms can reflect the innovation of their production technology or whether it is large-scale production, through the price signal mechanism. Therefore, when environmental regulations are stringent, large firms with sound environmental performance can afford to price their products at low levels (Mahenc, 2007; Zhou Mingyue, 2013), thereby maintaining price advantages in the market. Stringent environmental policies couple with environmentally friendly innovation will also impetus to green innovation in some countries (Ahmed,2020). A restriction on emissions from a polluting industry creates price effects in adjacent markets. When a quantity restriction on emissions causes two things: output to fall and output price to rise (Coggins et al., 2018).

The prior studies mentioned that the strictness of local environmental regulations and supervision would have an effect on the output level of hog production (Brian et al., 2002). In India's sugar industry, environmental regulations will affect the company's total factor productivity (Murty et al.,2006).

Prior literature focused on the development process of hog production. Rhodes (1995) believed that the regional layout of hog production had a spatial transfer. Charles et al. (1995) argued that the number of hog farms and the scale of hog farms has a compensatory relationship: the higher the degree of large-scale production, the fewer the number of hog farms. Among them, the expansion of the US hog farming scale is mainly due to the "Economy of Scale" and technological progress.

Customer concentration and Corporate Financialization —— Empirical Analysis Based on Chinese Non-financial Listed Firms

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Abstract

The paper aims to test the relation between firm customer concentration and its financialization level. Based on China's unique institutional environment, it further aims to study the moderating effects of state ownership characteristic and customer listing characteristic on the relationship between firm customer concentration and its financialization level.

[1] Capital market imperfections and financialization of real sectors in emerging markets: Private investment and cash flow relationship revisited.

The paper analyzes the impacts of cash flow from multiple investments in real and financial sectors on the new fixed investment spending of real sector firms. The empirical results based on the Euler equation approach and semi-annual firm level data from two major emerging markets, Mexico and Turkey, suggest that profits and rates of returns from fixed and financial assets have differential effects on fixed investment spending of real sector firms. Accordingly, increasing availability and accessibility of alternative investment opportunities in financial markets can become instrumental in channeling real sector savings to short-term financial investments instead of long-term fixed capital formation and thus lead to deindustrialization. Other words , to prevent the financial risks and operational risks caused by the loss of major customers, a firm may reserve a lot of cash as a buffer against a series of risks.

[2] Financialisation and capital accumulation in the non-financial corporate sector: A theoretical and empirical investigation on the US economy: 1973–2003 The paper analyzes the impact of financialisation on real capital accumulation in the US.

Industry Structure of Ivory Coast

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Choi, Jeeyeon

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Abstract

This paper begins with two main research questions: one for why cocoa farmers in most cocoa producing countries remain poor over the last six decades and the other for why Ivory Coast, one of the main cocoa producing countries has failed to create a high-value-added industry in cocoa. This questions leads to important implications: although developed countries and international entities provide huge financial supports to low-income countries, why those countries fail to restructure their industry and economic structure towards higher value added ones. With a lens of Multi-level Perspective (MLP) (Geel, 2006) we investigate cocoa farming industry of Ivory Coast in terms of technology, training, pressure from developed countries and MNEs in chocolate industry, inertia of local farmers and internal governance over the last five decades. In this way, we develop a more holistic view of failure of major industry in lower-income countries and suggest practical and policy implication on how lower income countries could create a higher value industry based on their main resource industry. For such theoretical contribution, we connect MLP and theories of International Business in order to develop a new perspective. Also, we attempt to identify missing opportunities to transform its industry in innovative transition.

Impact of risk management on innovation efficiency using a two-stage DEA-Tobit Model

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Abstract

National innovative capacity is a country's ability to produce and commercialize relevant innovations in a political and economic entity [3]. The capacity is an influential component in determining the level of productivity of the people and securing competitiveness in the economy, policy, and system [6]. Many countries have invested in innovation activities (e.g., R & D investments and knowledge workers) to enhance the innovative capacity [2]. Although many innovation activities are undertaken in many countries, a small number of governments could dominate the process of innovation development that strengthens national competitiveness. Developing a research model to evaluate the effectiveness of innovation activities on the innovative capacity is essential.

There have been significant and minor changes in social and political interactions during the Covid-19 [8]. The COVID-19 pandemic has affected the development of government innovation, and this pandemic has inhibited or promoted a government's inputs or activities to improve its innovation performances. On the other hand, government innovation has impacted how a government has responded to the crisis. This phenomenon could lead countries to different consequences for the short-term (e.g., the number of COVID cases or mortality) and the long-term (e.g., the development of national innovation policies/systems).

Our study aims to evaluate the national innovation capacity among 132 countries and determine the relationship between the capability and risk management in the presence of COVID 19. We implement a two-stage approach. First, we perform a two-stage Data Envelopment Analysis (DEA) to evaluate operational efficiency (innovation inputs -> innovation outputs (intermediates)) and productivity efficiency (innovation outputs -> innovation outcomes).

Research on Adoption Behavior of Mobile Medical Users ——From the Perspective of Push-Pull-Anchor Analysis Framework

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LU Xuan

Master, School of Management, Guizhou University

LIANG Zihan

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Abstract

Background: Mobile medical treatment refers to light medical treatment with mobile terminal equipment as the carrier, mainly including online medical services such as appointment registration, mobile consultation and medical e-commerce. According to the Analysys analysis and survey report, the peak number of mobile medical app's daily active people during the Spring Festival reached 6.712 million, with a maximum increase of nearly 1.6 million (2020). Users' awareness of obtaining medical services through mobile medicine is awakening, and mobile medicine will usher in new opportunities. During the epidemic period, the awareness and recognition of mobile medicine have increased significantly. It is expected that the market scale will exceed 50 billion yuan in 2020 (2019), which shows that mobile medical users begin to form the habit of obtaining medical services from mobile terminals. Obviously, mobile medicine is gradually becoming a new development direction in the medical field because of its obvious advantages such as convenience, low medical cost, high medical efficiency and strong timeliness of inquiry. The mobile medical market is expected to show an explosive growth trend.Objective:This paper aims to explore the mechanism of internal adoption behavior of mobile medical users under the background of "Internet plus", improve the efficiency of medical services, reduce the cost of medical services, and enrich the theoretical research content of "Internet plus medical health".Method:Based on the perspective of push-pull anchor analysis framework, this paper proposes a theoretical framework model of mobile medical user adoption behavior. The empirical data of user adoption behavior are collected through questionnaire survey, and the model is empirically tested by SPSS 25.0 and Amos 21.0 statistical software.Results:The results show that inconvenience, the attractiveness of mobile medical app and high risk significantly affect adoption behavior through the mediating effect of adoption attitude and adoption intention;
Key words: Mobile medical; PPM model; Adoption intention; Adoption behavior

Exploring the Institutional Context of Strategic Alliances and Influencing Roles of Governments Impacting Alliances' Synergies

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Abstract

The institution-based view of strategy has emerged as a leading perspective in international business and strategic management disciplines (Garrido et al., 2014). However, up to date, the institutional context of strategic alliances, specifically, analyses of the influencing role of the government's agencies on the international alliance's synergies or might be on dis-synergies is still unexplored. Thereby, the paper aims to offer an empirical framework that would be useful to practitioners and scholars to incorporate the institutional dimensions into dynamic capabilities and resource-based views on competitive advantage to explore the prerequisites of collaborative synergies in the international alliances

The institution-based view of strategy incorporates the institutional dimension when offering relevant answers to the fundamental questions of strategy on what determines the success or failure of the firm in international competition? (Rumelt et al., 1994). This new paradigm is extremely young in IB and the strategic management discipline and one of its challenges are "to demonstrate the importance of institutional factors for our understanding of competitive advantage" (Garrido et al.,2014, p.83), specifically in the context of international strategic alliances. Up today, only a few research explored the role of institutional factors as a lever or a brake of dynamic capabilities and competence-based synergy in international strategic alliances (Čirjevskis, 2021). If this is so, the paper asks a research question: how do dynamic alliance capabilities, core competencies of collaborative international partners, and their institutional contexts underpin the success or failure of alliance formation and greater performance? The answering of the research question by employing a case study may provide a theoretical novelty and practical reasoning because an institutional dimension and influencing roles of governments' agencies impacting on alliances' synergies were missed in many strategic fit's assessment models.

Having analyzed a case study on Tesco and Carrefour strategic alliance during the period 2018-2021, the paper has explored the probable challenges in the global supermarket's alliances through three contemporary theoretical lenses including an institutional-based theoretical lens.

Keywords: Institutional-based view, resource-based view, dynamic capabilities-based view, international alliance, synergy.

Adopting a Formula Funding Model to Enhance Cooperation of Triple Helix

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Abstract

Regional resilience refers to a regional economy that can withstand external economic shocks. Regions are going through individual stages of the economic cycle, but adverse external shocks such as COVID-19 sometimes come without notice. Economic regions should be resilient to adapt to changes and eliminate their harmful effects. Until recently, regional development policies have focused on improving regional competitiveness, such as enhancing regional productivity and attracting new capital and labor. However, national priority is becoming more robust in recent years, and a multinational system is developing. In addition, regional resilience and sustainable development emerged as important tasks as economic diversity and complexity increased further due to the era of low growth and pandemic represented by new normal. Digital transformation affects the future of the country and region in various aspects, including new spatial order and cooperation. This study aims to compare the regions of France, Germany, Italy, and South Korea and derive implications for regional development.

Resilience considers several measures, such as individuals, households, local, regional and national sizes, industries, knowledge production, entrepreneurship, and labor markets[1]. Regional resilience helps us think about the region in a dynamic, holistic, and systematic way[2]. Many studies have been conducted on regional resilience.

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DGIST

Study on Growth of Korean Venture Businesses in Local Area with Pohang City Case

Lee, Sang-Young*, Moosup Jung

(Dong-A Univ.)

Abstract

In this paper, (1) Among the cities in the non-metropolitan area of Korea, which city succeeded in creating a venture ecosystem? (2) What are the reasons why the region succeeded in attracting and fostering venture companies? This paper is the answers to the two questions. Through data on changes in venture companies by basic local governments and corporate attraction status of the Venture Promotion District, a representative government-led venture company attraction support system, Pohang City is the most successful city among non-metropolitan cities in Korea. In addition, through an expert interview, (1) the importance of the existence of the world's top engineering university was explained as the success factors of Pohang City. In addition, it argues that (2) promoting a policy to foster venture companies in connection with large local companies, (3) drastically reducing administrative regulations and (4) preempting future new industries through the designation of a special regulatory zone. This paper is significant in that it contributes to the search for a new way of success for local cities that are experiencing population decline in the sense of economic crisis.

Key words: Korean Venture Businesses, Innovation Cluster, Innovation ecosystem, Regional Innovation System, Venture Business Promotion

SOI & Swansea University 2022 Conference

July 6(Wed.) ~ 9(Sat.), Conference Days, 2022
Swansea University
(Faraday Building, Singleton Park Campus), Wales, UK
& Online(Zoom)

July 07 (Thursday)

July 07 (Thursday)

Venue: Faraday Lecture Theatre, Faraday Building, Swansea University, Wales, UK, 09:00~10:30

Digitalization and regional innovation & Innovation Ecosystem and Governance Mechanism in the Digital era

Offline Chair: Bo Yang(Swansea University, UK)

Online Chair: Jinxi Wu(Tsinghua University, China)

- Paper 1: "Open innovation in crisis: An overview of the healthcare sector in response to the COVID-19 pandemic" by **Zheng Liu, Yongjiang Shi, Bo Yang***
- Paper 2: "The signal of post catch-up in Open Innovation Dynamics" by **JinHyo Joseph Yun*, Xiaofei Zhao, EuiSeob Jeong, KyungHun Kim, SeungDeuk Hahm**
- (Online)Paper 3: "Innovation ecosystem evolution from traditional Internet to artificial intelligence: A case study of Chinese search engine enterprise" by **DING Ling, YANG Mingchun, MA Ziyou, YANG Mingchun, WU Jin-xi**
- Paper 4: "How can Open Innovation Make an Innovation Ecosystem Work?" by **Yongjiang Shi, Hu, Zheng Liu*, David TX Shang**
- (Online)Paper 5: "The Integration Innovation of Technological Governance and Social Governance in the Post Epidemic Era" by **Sun Rui, WU Jinxi*, SUN Qintao**

July 07 (Thursday)

Venue: Faraday Room B, Faraday Building, Swansea University, Wales, UK, 09:00~10:30

Innovation Diversity for Emerging Economies & Innovation & Growth

Online Chairs: Natalja LACE and Yuanyuan LIU (Riga Technical University, Latvia)

Offline Chairs: Kangwon Lee (Korea Institute for Advanced Study, Korea) & Seung Hoo Jin(Sumsung SDS, Korea)

- (Online)Paper 1: "Organizing studies entrepreneurially to prepare for sailing through the turbulences of the unknown" by **OGANISJANA Karine, WESTERBERG Mats, and HIETANEN Lenita**
- Paper 2: "Investment and performance of in-vitro diagnostic medical device firm for infectious disease in post-corona era: A South Korea case" by **Min Joon Kim, Hyun Yeong Kim, Kwangsoo Shin* Changhyeon Song***

- Paper 3: "A Research on the Effect of R&D Stocks by Industry Group on Technological Advance and Economic Growth" by **Jaeho Jung, Sangok Choi**
- (Online)Paper 4: "Exploring the Enablers of Strategic Orientation for Health Care Business Innovation Ecosystems" by **Min-Ren Yan, Chun Han Wang**
- (Online)Paper 5: "The moderating effect of reinvestment propensity on research capabilities and technology transfer relationship in government funded institutes: The Korean case" by **Woojoong Kim, Sangok Choi, Kangwon Lee**

July 07 (Thursday)

Venue: Faraday Room C, Faraday Building, Swansea University, Wales, UK, 09:00~10:30

Innovation Policy and Regulation of Digital Transformation

Online Chair: Ben Zhang (Huazhong University of Science & Technology, China)

Offline Chair: Joao Leitao(University of Beira Interior, Portugal)

- (Online)Paper 1: "Digital innovation strategy based on actor network of self-driving vehicles: Patent comparison between China and European Union" by **Yakun Ji, Ben Zhang***
- (Online)Paper 2: "Evaluation of Country Epidemic Emergency Governance Capacity Based on RESEIR Model" by **Runhui Lin, Yalin Li**
- (Online)Paper 3: "Investor emotions-based stock return prediction model using deep learning algorithms" by **Min-Seung Kim, Yong-Ju Jang, Chan-Ho Lee, Ji-Hye Choi, Jeong-Hee Lee, Sun-Hong Lee, Tae-Eung Sung***
- Paper 4: "Open Innovation, Coopetition and Co-innovation: How does co-creation interact?" by **Joao Leitao, Ângelo Novo, and Dina Pereira***
- Paper 5: "Innovation of Online Food Delivery Platform Systems through an Emphatic Design Approach" by **XU FAN, Kim Taesun**

July 07 (Thursday)

Venue: Faraday Room D, Faraday Building, Swansea University, Wales, UK, 09:00~10:30

Challenges of Digital Transformation in Korean Manufacturing Industry & Regional Innovation Systems

Offline Chairs: DongHoon Oh & Heongu Lee(Ministry of Trade, Industry and Energy, Office of Strategic R&D Planning, Korea)
Online Chair: Yuri Sadoi(Meijo University, Japan)

- Paper 1: "Factor Analysis and Prediction of High-Performance Government-Sponsored R&D project: Logistic Regression and Machine Learning" by **Hyoung Ryul MA, Cheol-Ju Lee**
- (Online)Paper 2: "Digital transformation and its impact on green transformation of business in Japan" by **Sergei Shaposhinikov & Yuri Sadoi**
- Paper 3: "Does digital literacy of college students affect their entrepreneurial intentions in the era of the 4th industrial revolution?" by **ByungYun Bae, Sungyong Choi***
- Paper 4 "Smart cities and open innovation: towards a coopetition framework" by **Valentina Della Corte, Enrico Di Taranto, Simone Luongo**
- Paper 5: "A Study on the Fit between Innovation Strategies and Country-Specific Ownership Structures: Focusing on Ambidextrous Innovation Strategy and the Ownership Structures in Korean Manufacturing Firms" by **Choo Yeon Kim, Jae Wook Yoo***

July 07 (Thursday)

Venue: Faraday Lecture Theatre, Faraday Building, Swansea University, Wales, UK, 15:30~17:00

Open Innovation Business Model Session

Offline Chairs: Offline Chairs: JinHyo Joseph Yun(DGIST, Korea), Bo Yang (Swansea University, Korea) & EuiSeob Jeong(KISTI, Korea)

- (Online)Paper 1: A business model for the emergence of a social market for amateur artists" by **Yoonseo Jung**
- Paper 2: "Business Model of K-Youth Culture" by **Juhyung Jung**

July 07 (Thursday)

Venue: Faraday Room B, Faraday Building, Swansea University, Wales, UK, 15:30~17:00

Open Innovation and Sustainable System Development in Practices & Open Innovation and ecosystem

Online Chairs: Min-Ren Yan (Chinese Culture Univ.) & Haiyan Yan(Shanghai Univ. of International Business and Economics, China)
Offline Chair: Zheng Liu(Cardiff Metropolitan University, UK)

- Paper 1: "Competitiveness in E-mobility industry" by **Seunghyun Kim***
- (Online)Paper 2: "Exploring the Driving Forces of New Retail Business Model Innovation in China" by **HaiyanYan, Min-Ren Yan*, Xiaotong Shen*, Xinyue Yan, Haonan Qu**
- Paper 3: "Innovation capabilities and technology commercialization in the smart farm sector of Korea" by **Daeyu Kim, Seung Hoo Jin**
- Paper 4: "Industrialisation, Ecologicalisation and Digitalisation (IED): Building a theoretical framework for sustainable development" by **Yongjiang Shi, Jialun Hu, David Tianxin Shang, Zheng Liu***
- (Online)Paper 5: "Diversified Paths to Improve Operating Efficiency of Patent Operation Platforms: A Fuzzy-Set Qualitative Comparative Analysis Based on TOE Framework in China" by **Kaitong Liang, Lei Ma, Zheng Liu, Chaonan Yi, Xinwei Ye**

July 07 (Thursday)

Venue: Faraday Room C, Faraday Building, Swansea University, Wales, UK, 15:30~17:00

Innovation and Digital Transformation in Emerging Economies

Online Chairs: Elina Gaile-Sarkane and Inga Lapiņa (Riga Technical University)
Offline Chair: Eungdo Kim (Chungbuk National University, Korea)

- (Online)Paper 1: "Factors Affecting Innovation in the Clothing and Textile Industry: Towards the Circular Economy" by **HOVLANNE Zane, DUBICKIS Mikus, GAILE-SARKANE Elina**
- Paper 2: "Is Groupthink Really Inevitable? The Self-Organizational Perspective" by **Namjun Cha, Eungdo Kim***

- Paper 3: "A Study on Design Education Related to Attitude of Accepting AI-Based Design" by **Ko Yunseo, Kim Taesun**
- (Online)Paper 4: "Exploring the social construction of counterfeit purchases as social reality: Externalization, objectification, and internalization" by **Seung-Hee Lee, Kwangho Jung & Jane Workman**
- Paper 5: "An Experiment on Digitalizing Gratitude and Improving Trust" by **Jun-ichi Yamamoto, Rina Numabe, Quan Than Pham & Shugo Sugawara**

July 07 (Thursday)

Venue: Faraday Room D, Faraday Building, Swansea University, Wales, UK, 15:30~17:00

Issues on Innovative Competitiveness and Efficiency & Open Innovation in the new era. The role of artificial intelligence

Offline Chairs: DaeCheol Kim(Hanyang University, Korea) & SungYong Choi(Hanyang University, Korea)
Online Chair: SCEULOVS Deniss (Riga Technical University, Latvia)

- Paper 1: "Impacts of the local government's visa waiver program on Tourism in Jeju Island" by **Tae Youn Kim, Eunsong Bae, Daecheol Kim***
- Paper 2: "Open innovation and well-being: In relation to 'The Postpandemic Future of Work'" by **Mari Iizuka**
- Paper 3: "Innovation of tacit knowledge management via digital transformation in the demographic transition era - case study on a national R&D project of the Korean ceramic industry" by **Heongu Lee**
- (Online)Paper 4: "The Impact on Audience Attention and Media Brand Choice Using Media Brands Uniqueness Phenomenon" by **SAULITE Linda, SCEULOVS Deniss**
- Paper 5: "Water Treatment Technology Trends Through Patent Data Analysis in the Age of Digital Transformation" by **Sangjae Pyo, Hyoung Ryul Ma, Seung Gun Chung, Dong Hoon Oh**

Open innovation strategy in crisis: An overview of the healthcare sector in response to the Covid-19 pandemic

Zheng Liu
Cardiff Metropolitan University, UK
Yongjiang Shi
University of Cambridge, UK
Bo Yang (Corresponding author)
Swansea University, UK

Abstract

The Covid-19 pandemic has caused huge disruption to the healthcare sector, business and society. To response to this unexpected crisis, there have been numerous incentives in the healthcare sector with fast design and manufacturing of personal protective equipment (PPE), medical devices such as ventilators, testing, treatment and vaccine technology. Many of these innovative activities happen beyond organisational boundaries with collaboration and open innovation. There have been studies highlighting fast and frugal innovation, reverse innovation, and crowdsourcing with empirical evidence; whereas others explore innovation across broader sectors. Despite this, how open innovation strategy can be performed during and after the crisis is still a new topic (Chesbrough, 2020). Particularly, in the era of digitalisation and paradigm of business ecosystem challenged by VUCA, it is time for us to revisit the theory of open innovation strategy. The key research question of this paper is "*what are the emerging themes of open innovation strategy in response to the Covid-19 pandemic?*" By exploring the healthcare related open innovation strategy during the pandemic, the paper also aims to provide recommendations for the healthcare sector, business and society to recover from the crisis.

The concept of open innovation meaning generating knowledge and profiting from it through internal and external exchange, breaking the organisational boundaries (Chesbrough, 2003), has attracted wide academic research and business practices. Innovation experiences dynamics among open innovation, complex adaptive system and evolutionary change of companies, which can be categorized as micro open innovation dynamics (Yun et al., 2018). At macro level, there are interactions among open innovation system formed with small and medium-sized enterprises' (SMEs') knowledge sharing, closed innovation system led by large firms, and social innovation system with society engagement (Yun, 2015). In the long term, there is a need to integrate micro and macro open innovation dynamics to achieve sustainability-oriented innovation (Yun and Liu, 2019).

The signal of post catch-up in Open Innovation Dynamics

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DGIST & SNU, Korea

Xiaofei Zhao

(DGIST)

EuiSeob Jeong, Sangwoo Kim

(KISTI)

KyungHun Kim

(LADI)

Sung Deuk Hahm

(Kyonggi University)

Abstract

The digital transformation can serve as a window of opportunity for those late-commers who are equipped with the capability to create complementary assets for grabbing new opportunity of technological leapfrogging as a way of catch-up while penalizing the forerunner. In this context, we want to answer the following research question. Is there any difference in open innovation effect on the firm according to the changing of belonging sectorial innovation system from catch-up to post catch-up?

We statistically analyzed the moderating effects of open innovation between catching-up, and the performance with the patents which were registered in United States Patent and Trademark Office, which were applied from China in telecommunication, from South Korea in Semiconductor, and from Japan in biotechnology on 1995-1999, and 2005-2009. We found out 3 results from this study as follows. First, from this research, as the signal of post catching-up, open innovation effects on the performance of firm, and the moderating effects of open innovation between catching-up, and the performance of the firm were found, Second, the appearance of new dominant design after post catching-up was explained through the powerful open innovation. Third, Open innovation could be the useful new strategy for firms in the post catching-up to use.

Keywords: Catching-up, open innovation, dominant design, telecommunication, semiconductor, biotechnology

Innovation ecosystem evolution from traditional Internet to artificial intelligence: A case study of Chinese search engine enterprise

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WU Jinxi

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Abstract

In the world competition pattern, artificial intelligence (AI) has gradually become the commanding heights of science and technology. Its development level directly affects many aspects of national economic and social life. At present, China's AI innovation ecosystem is facing the problems of "technology blockade", "industrial transfer decoupling" and "manufacturing reflux", and most of the AI core technologies are monopolized by foreign advanced AI enterprises. Innovation ecosystem evolution is an important way of enterprise digital upgrade. This study explores the evolution path, characteristics and mechanism of the innovation ecosystem in the process of upgrading from traditional Internet to AI enterprises. It attempts to open the "black box" of the evolution from traditional Internet to AI innovation ecosystem.

Existing research provides useful enlightenment for this study. Researches on artificial intelligence mainly focus on correlation classification (e.g. Kaplan et al., 2019; Yang et al, 2020), promoting industrial innovation (e.g. Zhou et al, 2019; Park, 2017), and applications in the medical field (e.g. Hosny et al, 2018; Pirouz et al, 2020), enhancing the competitive advantage of enterprises (e.g. Jin Chenfei et al, 2020), challenges faced by enterprises (e.g. Xu Peng et al., 2020; Huang et al., 2018). Studies on innovation ecosystem mainly focus on related concepts (e.g. Adner, 2006; Ma et al, 2019), composition (e.g. Estrin, 2008; Wu Jianlong et al., 2021) and characteristics (e.g. Yun et al, 2021; Zhang, 2015) and Evolution (De Jager et al, 2017; Ouyang et al, 2015).

So far, innovation has gone through linear and innovation system paradigm, and started to enter the stage of innovation ecosystem (Li et al, 2014).

How can Open Innovation Make an Innovation Ecosystem Work?

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Jialun Hu

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Zheng Liu (corr.)

Cardiff School of Management, Cardiff Metropolitan University

David TX Shang

Department of Engineering, University of Cambridge, UK

Abstract

Since introduced in 2003, open innovation is adopted to increase embrace of external cooperation in a complex world (Chesbrough, 2003). It is now regarded an established paradigm in the innovation management (Patrucco et al., 2021). Meanwhile, ecosystem including innovation ecosystem and its boarder concept of business ecosystem has been explored in the last two decades across strategy and innovation disciplines to deal with dynamic environments, providing important strategic guidance to companies. It seems that open innovation and innovation ecosystem share similar characteristics of collaboration, openness, change and complementor interaction, yet the exact linkage between the two bodies of knowledge is unclear.

This paper seeks to understand and clarify the relationships between open innovation and innovation ecosystem based on some comprehensive literature reviews on the concepts. It eventually aims to enrich the understandings about main mechanisms and management processes of the innovation ecosystems. The paper takes its title as the research question – "how can open innovation make an innovation ecosystem work?" It mainly emphasizes on the theoretical reviews and discussions, including five sections and ending with a conceptual framework development for the future research work.

Keywords: Innovation Ecosystem, Open Innovation, Business Ecosystem, Innovation System.

Open Innovation (OI): academic evolutions and practical boundaries

Literature review on open innovation will cover motivations, evolutionary process and practical tools. Open innovation is defined as "the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively.

The Integration Innovation of Technological Governance and Social Governance in the Post Epidemic Era

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SUN Qintao

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Abstract

The research purpose of this paper is to deal with the social governance problems caused by the changes of social life in the post epidemic era. The object of this paper is: First, to analyze the existing contradictions between the guidance of technological governance and the needs of social governance; Second, to tap the potential integration innovation points of technological governance orientation and social governance trend; Third, to explore the mutual promotion mechanism and dynamic evolution between various subjects of technological governance and social governance; Fourth, to put forward) an integration innovation model of technological governance and social governance in China from the perspective of innovation ecosystem.

According to the research logic of raising questions, theoretical construction, empirical research, implementation path and countermeasures, the research outline of this paper is:

Part I: China's technical governance orientation and social governance trend in the post epidemic Era.

Part II: Theoretical framework for the integration innovation of China's technological governance and social governance in the post epidemic Era.

Part III: Analysis on the interaction mechanism between technological governance and social governance based on Innovation Ecosystem.

Part IV: The realization path of integrated innovation of China's technological governance and social governance in the post epidemic Era.

Part V: Countermeasures and suggestions on the integration innovation of China's technological governance and social governance in the post epidemic Era.

Organizing studies entrepreneurially to prepare for sailing through the turbulences of the unknown

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Mats Westerberg

Professor, PhD., Luleå Technology University, Sweden

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Abstract

In the face of ambiguity and unprecedented global crisis caused by the COVID-19 pandemic, the boosting of digitalization in almost all spheres of human activities has turned into a panacea for the ills and severities of modern distanced life. However, to promote innovation and entrepreneurship, also new approaches to the organization of the teaching and learning processes are required to help students become self-confident and self-directed learners who achieve harmony with the drastically changing world and are able to cope with the turbulences of the unknown. The pursuit of more effective ways of learning, which would promote a development-oriented entrepreneurial mindset and strengthen essential entrepreneurial skills across a broad range of pedagogical practices and contexts, has brought us to the idea of organizing studies entrepreneurially. This paper aims to analyze a case of organizing studies entrepreneurially at university to investigate its impact on students' entrepreneurial skills, thinking, behaviors, abilities, feelings and emotions activated while learning in the remote study mode during the lockdown caused by the pandemic.

The framework of organizing studies entrepreneurially (OSE) is based on Colin Jones' philosophy of entrepreneurship education which states that its ultimate goal is seen as helping learners to become self-negotiated actors who are capable to "direct their conscious thinking and action towards an adjustment of their inner and outer worlds in order to succeed in life" (Jones, 2019:58). Another key aspect of OSE is the promotion of such significant entrepreneurial skills as courage, responsibility, initiative, tolerance for ambiguity, interactivity and ability to collaborate, and creativity grouped and named as CRITIC (Westerberg, 2020). OSE helps students recognize new potential, ideas and opportunities derived from the study content and context (Rae, 2014), and form clear understanding of how knowledge and skills acquired within and across study disciplines can be applied to solve real-life problems for creating new values for oneself and the society (Lackéus, 2016).

Investment and performance of in-vitro diagnostic medical device firm for infectious disease in post-corona era: A South Korea case

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Abstract

The paradigm of the medical device industry has been shifting from conventional treatment to early diagnosis and prevention of diseases. Against this background, more existing firms pay attention to the in-vitro diagnostic devices (IVD) and this industry shows remarkable growth worldwide. Due to high profit margins as well as technological and regulatory hurdles, firms in this industry are growing rapidly every year. The demand for IVD has also gradually increased because the spread of new infectious diseases has increased as the movement between countries increases. The COVID-19 pandemic, which began in 2020, was at its peak. Demand for IVD for infectious diseases skyrocketed in most of the countries, including the United States and Europe. The existence of competitive firms in IVD industry will be an important national capability to cope with another pandemic in the future. However, the market for IVD will not be formed easily due to the fact that it is difficult to predict the timing and scale of the outbreak of new infectious diseases.

To compensate this limitation in voluntary market formation, large scale investments had been made by the government in Korea. Most of the investments has been spent on the construction of industrial infrastructure and support for research and development at the firm level. Nevertheless, the size of the Korean IVD industry is very small compared to other medical device industries, and few firms exist. Among them, the IVD industry for infectious diseases is even smaller.

Therefore, this study examines the effect of government investment on corporate performance through the case of Korea's infectious disease IVD industry, and furthermore, tries to examine the effect of corporate performance on attracting private venture capital (VC) investment.

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Society of Open Innovation Technology, Market & Complexity
DGIST

A Research on the Effect of R&D Stocks by Industry Group on Technological Advance and Economic Growth

Jaeho Jung

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Sangok Choi(Corr.)

Prof., Korea University, Korea

Abstract

Purpose/ Research Question:

R&D stock of R&D-intensive industries (high technology, medium and high technology, medium and low technology) had a positive effect on economic growth, and the higher the R&D intensity, the higher the positive effect?

R&D stock of R&D-intensive industries (high technology, medium and high technology, medium and low technology) had a positive effect on technological progress, and the higher the R&D intensity, the higher the positive effect?

R&D stocks in R&D-intensive industries (high-tech group, middle- and high-tech group, medium- and low-tech group) had a positive effect on technological progress, and the higher the R&D intensity, the higher the positive effect?

From the past, economists have agreed that R&D has a positive effect on technological advance and economic growth..However, quantitatively verifying this is based on the neoclassical economist Robert Solow's Growth Accounting theory and the Endogenous Growth Theory, which attempted to more specifically identify the factors of technological advance. Based on their theoretical concepts, many preceding studies have been conducted on the causal relationship between R&D, technological advance, and economic growth domestically and internationally. In particular, Korea experienced the foreign exchange crisis in the late 1990s and attempted to switch to innovative growth through R&D rather than factor-led growth by accumulating labor and capital. In other words, from the early 2000s, the government promoted the transition to a knowledge economy, and to support this, state-run research institutes such as the Korea Development Institute(KDI) and the Korea Institute for Industrial Economic & Trade(KIET) led research related to this. Until now, however, few domestic studies have verified the impact of R&D on technological advance and economic growth according to the classification by industry group according to R&D intensity emphasizing technical characteristics. In particular, R&D intensity is a key factor in economic growth claimed in the second endogenous growth theory. They argue that the higher the R&D intensity, the higher the effect on technological progress and economic growth.

Exploring the Enablers of Strategic Orientation for Health Care Business Innovation Ecosystems

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Abstract

The present study explores the impacts of corporate strategic orientation on innovation ecosystems through the perspective of systems thinking. Cases method was adopted to analyse representative companies of different industries. In terms of academic contribution, the results of this study verify an innovation ecosystem model in a generalized manner, and find that market orientation, interaction orientation, and entrepreneurial orientation generate a positively reinforcing effect on the paths of the innovation ecosystem model in all phases, thus, diversifying the available literature of innovative ecosystems. In terms of practical contribution, this study presents a dynamic context of the development of new business, and describes the links between innovative activities and the market. Enterprises can refer to the proposed framework as well as strategic architecture in this study to effectively transform innovative activities into market performance.

Keywords – innovation ecosystem; market orientation; interaction orientation; entrepreneurial orientation; business model; systems thinking; sustainable system development

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The moderating effect of reinvestment propensity on research capabilities and technology transfer relationship in government funded institutes : The Korean case

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Abstract

Based on the resource-based perspective, this study examines how government-funded research capabilities (thesis, patents) and performance diffusion capabilities (TLO manpower, TLO budget) affect technology transfer performance (receipt of royalties), and reinvestment of institutional fees The purpose of this study was to examine the moderating effect of the tendency (reinvestment of researcher incentives, reinvestment of RnD, reinvestment of institutional operating expenses) in the above-mentioned influence relationship. For this purpose, 7-year panel data of 21 government-funded research institutes in the field of science and technology in Korea were analyzed.

The study results are as follows.

1) Research capacity (thesis, patent) did not affect royalty income, and performance diffusion capacity (TLO budget) had a significant (+) effect on royalty income.

2) The higher the rate of reinvestment of royalties as researcher incentives, the more significant (+) the research capacity (patents) had on the royalty income, and the significant (+) effect on the performance diffusion capacity (TLO manpower, TLO budget) on the royalty income. went crazy

3) Research capacity (patents) had a significant (-) effect on royalty income as the ratio of royalties reinvested in RnD was higher.

4) The higher the rate of reinvestment of royalties into institutional operating expenses, the higher the performance diffusion capacity (TLO budget) had a significant (+) effect on royalty income, but the effect was insignificant.

The implications of this study are as follows.

1) For the technology transfer performance of government-funded research institutes, performance diffusion capacity, especially TLO budget investment, is required rather than research capacity.

Digital innovation strategy based on actor network of self-driving vehicles: Patent comparison between China and European Union

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Abstract

With the development of driverless vehicle technology, the increasing complexity of the technology field has new and urgent requirements for the basic mode of technological innovation, so it is facing the emerging trend of digital transformation. In addition to strengthening interdisciplinary and interdisciplinary integration, digital innovation strategies need to be planned to build an open innovation ecosystem. However, affected by differences in geographical environment and patent system, digital innovation transformation in different countries/regions presents a trend of diversification, thus forming the main question of this study: what are the significant differences in digital innovation transformation process in regional innovation system? In order to solve this problem, this study aims to conduct exploratory analysis by comparing Chinese and European unmanned driving patents and form an effective analytical framework.

The development of technology as is affected by complex interactions among the tremendous amount of innovations (Yun et al., 2018), and it has been accelerated in this era of AI (Lee et al., 2018). Therefore, innovation is no longer limited to internal activities, absorbing knowledge and technology from the outside, as well as spreading their knowledge to more organizations has become more and more popular. (Kodama, 2018) Therefore, innovation is no longer limited to internal activities, absorbing knowledge and technology from the outside, as well as spreading their knowledge to more organizations has become more and more popular. It is considered an effective way to promote the innovation performance of enterprises and reduce the investment risk of R&D. In the field of automobile manufacturing, a closed innovation chain in which automobile manufacturers dominate has been maintained for a long time. However, self-driving vehicle is pushing the innovation chain to more openness, while the position of participants may change. Thus, it is necessary to in-depth study on the evolution and features of open innovation in automobile manufacturing.

Evaluation of Country Epidemic Emergency Governance Capacity Based on RESEIR Model

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Abstract

The COVID-19 pandemic has had a profound impact on the spatial mobility of large parts of the population in many countries. For most people, this is a devastating shock, resulting in loss of income, social contact, and quality of life [1-4].The rapid global spread of COVID-19 has prompted governments to implement a wide range of responses. However, due to the differences in the capacity of national governments for emergency response, the content and speed of control measures adopted by different countries are obviously different. And even for the same control measures, but also produce very different effects. The University of Oxford has launched the COVID-19 Government Response Plan (OxCGRT) to track how stringently governments are responding to COVID-19 at different times. However, it is still not clear whether the severity of control measures will affect the infection rate of the epidemic, and determine the correlation between the epidemic emergency governance capacity and the severity of control measures. Public data on the number of confirmed COVID-19 cases, infections and deaths reflect differences in response and capacity in different regions at different times. Based on the classical spread SEIR epidemic model, on the basis of building the governance capability to evaluate epidemic RESEIR model, this model considers the outbreak control effect, recovery ability, national economic geography link control (base), the prevention and control block (habit, culture), comprehensive governance capacity (the government and the government to mobilize) and other factors. Finally, this paper uses the model to evaluate the epidemic management capacity of different countries around the world, and analyzes the reasons for the differences in emergency governance capacity among different countries.

The COVID-19 pandemic has had a profound impact on the spatial mobility of large parts of the population in many countries. For most people, this is a devastating shock, resulting in loss of income, social contact, and quality of life. This kind of public health emergency is unpredictable, unexplained, rapidly spreading and powerful destructive, which is a major public and social crisis affecting the social, economic, political and diplomatic fields from the public health field. Many scholars have carried out studies based on public epidemic data.

Investor Emotions-based Stock Return Prediction Model Using Deep Learning Algorithms

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Abstract

This research seeks to answer the basic question like:

1. Does the Korean stock market have anomalies for EMH (Efficient Market Hypothesis)?
2. Can it be interpreted that weather changes affect the emotions of market participants?
3. Does the weather change have a significant effect on the actual market participant's transaction patterns?

Changes in investment behavior due to weather changes can be largely divided into analysis of whether actual weather changes affect human emotions and whether they affect in actual investment behavior.

First, in the field of psychology, a few studies have been conducted that weather changes have a significant effect on human emotions. Howarth, E. and Hoffman, M.S. (1984) analyzed the effects of sunlight time, precipitation, temperature, and humidity on 100 mood variables such as concentration, cooperation, anxiety, and aggression. And they confirmed that humidity, temperature, and sunlight have a significant influence on human emotions [1]. Matthew, C.K. et al. (2005) revealed that pleasant weather has a positive effect on human emotions, and mentioned that especially clear weather can increase human purchasing behavior [2]. Denissen, J. et al. (2008) analyzed the influence of six meteorological variables, including temperature, wind power, and sunlight, and confirmed that the increase in temperature, wind power, and sunlight could negatively affect human emotions, but the average influence was not significant [3]. In addition, change of human emotions causes fluctuations in the decision-making process. Richard, P.B. et al. (1999) mentioned that positive human emotions from a marketing point of view induces positive evaluation in the same situation, which ultimately significantly affects decision-making [4]. Studies that observed this from the risk perspective also existed.

Open Innovation, Coopetition and Co-innovation: How does co-creation interact?

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Abstract

The open innovation model was disseminated by Henry Chesbrough through the launch of the book titled: 'Open Innovation'; in 2003, stating that external ideas can be imported to leverage internal development and so expand operations, in the same way, that ideas arising internally, with potential in other contexts, can be shared across borders. The knowledge flow coming into the organisation is called inbound and the flow originating from the organization is denominated as outbound (Huizingh 2011).

According to Chesbrough (2006), by using the open innovation model, the company makes better use of the results of research and development (R&D) activities, being able to apply it in its product portfolio, transferring technology to third parties or through spin-off companies, as well as reaching new markets and significant results.

This model assumes that knowledge to generate and promote innovation is found anywhere in the organisation's value network and in the globalised world, and follows the following principles: (I) Always be open to new ideas from outside, regardless of whether they come from research centres, universities, or even competing companies; (II) Seek to use external technology to promote its own internal R&D process, as well as identify opportunities where other companies can take advantage of internal technology for the development of their business; (III) Research and development centres should deliver the new ideas and/or technologies that may emerge from suppliers, distributors, customers, etc.; (IV) Valuing intellectual contributions, whether from within or outside the company, facilitating the exchange of knowledge and incorporating technologies from others, sharing risks and benefits; (V) Promoting innovation management through long-term sustainable processes and not just focusing on the launch of new products; (VI) Seeking external sources of innovation and having the ability to identify good ideas in their raw state so that they can develop and improve so that they have commercial potential and generate profit for the company; and (VII) Developing research structures that identify and hire the necessary skills to deal with problems and challenges difficult to revolve internally.

Co-creation is a powerful mechanism, although with limited exploration, for generating innovation because it combines various collaborators' knowledge and promotes the transfer of tacit knowledge.

Innovation of Public Online Food Delivery Platform Systems through an Emphatic Design Approach

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Abstract

In early 2020,the epidemic broke out worldwide, creating a huge health, economic, and social crisis for the population. In most countries, lockdown policies have made contactless online food delivery the only way to reach the outside world for people isolated at home. Consumer fear of the outbreak affects the way restaurants are enjoyed (Zwanka and Buff, 2020) [1], with 65% of consumers saying they would prefer to order food from a restaurant online rather than eat at a restaurant (WWD Business News, 2020) [2], which has led to a significant increase in global online food delivery orders, with the 2020 global online food distribution industry with a 17% increase in the total value of goods (Statista, 2021) [3]. In South Korea, the food service industry has seen a significant decrease in offline sales and a significant increase in online food delivery orders due to the epidemic (Statista, 2020)[3], with increased government and private sector interest in online food delivery. The government, in an effort to promote compliance with epidemic prevention rules and to revitalize the food service industry, issued consumer vouchers for food orders through online food delivery platforms. Famous restaurant brands such as Starbucks have increased their online food delivery services, and there are also start-up logistics companies moving from commodity delivery to online food delivery. However, large online food delivery platforms in Korea have become monopolies, charging restaurant business owners 10%-15% per order, and small restaurant businesses are breaking even due to the high fees. To increase the revenue of caterers and reduce consumer expenses while optimizing the professional environment for take-out delivery workers, eight local governments plan to launch public online food delivery platforms led by the government. In December 2020, the Gyeonggi Provincial Government launched Delivery Express, a public online food delivery platform serving 30 municipalities in Gyeonggi Province for consumers in the service area to order food online, developed and operated jointly by the Gyeonggi Provincial Government and Gyeonggi Province Co. Although this platform has a transaction volume of 90 billion won and 300,000 downloads by the end of 2021 (news.mt.co.kr,2021) [4], it still lags behind private online food delivery platforms.

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Factor Analysis and Prediction of High-Performance Government-Sponsored R&D project: Logistic Regression and Machine Learning

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Abstract

The Korean government budget for research and development (R&D) in 2020 amounted to about 24 billion dollars, which has nearly doubled over the past decade. Despite the rapid expansion of the budget, the substantial performance of innovation does not meet general expectations. The concerns about government R&D funding's performance are increasing. This paper examines the factors affecting the high-performance of government-sponsored R&D projects, and predicts the possibility that the projects will produce the high-performance.

We analyze government-sponsored R&D project in the industrial technology field through logistic regression, detecting relevant factors (such as technological characteristic of a project, size of main entity, type of cooperation, and etc.) affecting the success of R&D projects. In addition, the occurrence of high success of R&D project are predicted by machine learning using random forest model and support vector machine (SVM).

Major research results are as follows. The performance of National R&D project is significantly increased in the case of commercialization-oriented R&D projects, as the raise of the government funding, for the case of big-sized enterprises as the leading institution, as the number of participating companies increases. As for the machine learning, by performing feature importance analysis, some of the abovementioned factors are confirmed to be main variables in classifying low, medium and high performance of National R&D project

Keywords: Government-sponsored R&D, project success, logistic regression, machine learning, random forest model, support vector machine

Digital transformation and its impact on green transformation of business in Japan

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Abstract

In today's world technologies have become crucial to assure the success of companies, digital transformation came to help companies transition towards a sustainability and accept the changes in the market. Nonetheless, even with the ever-growing importance shed on it, few articles and studies have linked it to the sustainability and digital transformation cases analysis in Japan. Empirical studies that have linked between the digital transformation and its impact on sustainable business are still limited. The purpose of this paper is to fill this gap by examining (empirically) the effect of digital transformation on sustainability of business in Japan.

Digital transformation (DX) is the process of disruption caused to an organisation by digital technologies, the impact of which is enormous on the value creation, strategy and structural mechanisms of the organisation (Vial, 2019). Digital transformation is stimulating new business models and causing disruption in markets and industries around the world. These disruptions have been made possible by digital technologies such as IoT, big data analytics, cloud computing, mobile technologies and artificial intelligence (Karimi, Walter, 2015). Even though digital technologies are the main enablers, other factors have also driven digital transformation. These factors include changes in consumer behaviour and expectations, digital competency (Lemon, Verhoef, 2016) and data availability. Moreover, digital transformation is expected to affect the sustainability triangle (Kamble, Gunasekaran, Gawankar, 2018; Lopes de Sousa Jabbour; Jabbour, Godinho Filho, 2018) - corporate sustainability, social sustainability and environmental sustainability (green transformation-GX). The development of digital technologies will bring improvements to the environment, human health and even to the entire food chain (Weersink, Fraser, et al, 2018). Therefore, there is a need for more comprehensive research to understand the impact of digital transformation on environmental changes in business. Protecting the environment from pollution and resource degradation remains a top priority (Beier, Fritzsche, Kunkel, et al, 2020) and more attention needs to be paid to digital transformation.

Keywords: digital transformation; sustainability transformation; digital innovation; business model

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Does digital literacy of college students in the era of the 4th industrial revolution affect their entrepreneurial intentions?

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Abstract

The purpose of this study is to verify through empirical analysis whether digital literacy of college students living in the era of the 4th industrial revolution affects their entrepreneurial intentions. Entrepreneurship drives economic growth, so there is a lot of effort in educational institutions to improve students' entrepreneurship (Pineiro et al., 2020). Indeed, among the entrepreneurial processes of students in universities, intention-based models have attracted the attention of entrepreneurial psychologists because the intention to act entrepreneurially is regarded as the first step in starting a business (Fernandez et al., 2019; Munir et al, 2019). In particular, Ajzen (1991)'s theory of planned behavior (TPB) received increased academic interest after proposing three antecedent factors of intention (1. attitude toward behavior, 2. subjective norm, 3. perceived degree of behavioral control). A number of studies have found empirical evidence for the effects of entrepreneurship, teaching and learning environments on entrepreneurial intentions (Krueger, 2000; Souitaris et al., 2007; Fayolle & Gailly, 2015; Welsh et al., 2016; Matsheke, & Dhurup, 2017; Lee et al., 2019; Zhang et al., 2019; Haddad et al., 2021; Ji & Goo, 2021). In addition, previous studies have highlighted the need for a better understanding of the influence of academic context on students' intentions for entrepreneurship (Lin~an & Fayolle, 2015).

Digital literacy as a member of a SW-centered society is the ability to converge and understand various fields using information and communication technology and online services, and to solve complex problems cooperatively by creating information and knowledge based on computational thinking. (Shin & Lee, 2019). As sub-factors of digital literacy, there are SW-centered social adaptation ability, SNS usage and collaboration ability, ICT basic competency, and basic business usage ability (Shin & Lee, 2019). Although digital literacy is a very important factor that university students must have in the era of the 4th industrial revolution, efforts to check whether it has an effect on the entrepreneurial intention and entrepreneurship are relatively insufficient. Therefore, this study is conducted to specifically understand the factors of digital literacy in college students and how they influence entrepreneurial intentions using the TPB model.

Smart cities and open innovation: towards a coopetition framework.

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Abstract

Based on a bibliometric analysis, this article seeks to address a research gap regarding the challenges and opportunities of open innovation processes in smart destinations. We develop a conceptual framework towards a co-opetition perspective, finding out the factors that facilitate or hamper collaborative networks.

Over the years, tourism industry has experienced a continuous increase in the academic production due to its continuous expansion and diversification that has turned it into one of the economic sectors with greater weight and growth in the world (Sanchez et al., 2017). Technology revolutionized the tourism industry and modified the strategy and competitiveness of tourism organizations and destinations (Buhalis and Law, 2008). On the other side, tourists are co-actors of the journey experience, especially through the use of social networks, changing their behaviors and preferences, and creating a smart demand. Substantially, a new tourism scenario has emerged which must be adapted to (Celdrán-Bernabeu et al., 2018). The competitiveness of tourism destination is increasing in complexity and smartness, as they must ensure high quality standards, provide unique and customized services, and extend the visitor experience in the pre-trip planning, on-site and after-trip phases (Zainuddin, Salleh Radzi, & Mohd Zahari, 2013). Furthermore, generating expectations of superior innovation, a greater interactivity, and a better image, destinations need to communicate their smartness and include it in their branding (Huertas et al., 2021). Since tourism firms' performance is conditioned by the actions of other players in the supply chain and, above all, by the territory in which they operate, a successful tourism product delivered in a certain destination relies on a network of stakeholders coordinating their initiatives, by competing and collaborating at the same time to innovate together (Kwon et al., 2020). Co-opetition strategy is frequent in any industries but in some contexts are more propitious, such as the tourism destinations, because of their high degree of complementarity and atomization of supply that induces networking arrangements (Della Corte and Aria, 2016).

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A Study on the Fit between Innovation Strategies and Country-Specific Ownership Structures : Focusing on Ambidextrous Innovation Strategy and the Ownership Structures in Korean Manufacturing Firms

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Abstract

According to the literature on technological innovation and organizational learning, innovation strategies can be broadly classified into explorative, exploitative, and ambidextrous innovation strategies (Jansen, Van den Bosch, & Volberda, 2005). Although scholars have emphasized the importance of ambidextrous innovation strategy simultaneously pursuing exploitative and explorative innovation (Tushman & O'Reilly, 1996), the empirical evidence remains mixed. Hence, the first purpose of this study is to examine whether ambidextrous innovation strategy produces higher performance than other strategies.

About 80% of listed Korean firms have a founding-family ownership structure (Yoon, 2005). However, more strictly, it can be further divided into owner control and joint control by the owner and professional managers, a unique ownership and control structure that has been developed over time under the local institutional environment in Korea. Korea's ownership and control structure can then be classified into owner control, management control, and joint control. The second and primary purpose of this study is to investigate the different effects of each ownership and control structure of Korean manufacturing firms on the relationship between each innovation strategy and innovation performance, particularly focusing on exploring the ownership and control structure that best fits with ambidextrous innovation strategies.

1) Innovation Strategy:

Ambidextrous innovation strategy is defined as a firm's ability to simultaneously pursue both exploitative (incremental) and explorative (radical) innovation (Jansen et al., 2005). Many scholars argue that a well-balanced combination of explorative and exploitative innovation strategies is essential for firms' success and long-term survival (March, 1991). However, some scholars argued that synchronizing both strategies may cause competition and conflict for scarce resources in a firm (Bento, 2018; Tani et al., 2018), thereby putting the firm in a "stuck-in-the-middle" position.

A business model for the emergence of a social market for amateur artists

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Abstract

This business model explores how to foster the future art market by nurturing the talents of amateur artists through the quasi-market mechanism. This model focuses on the pre-or quasi-market for the business ecosystem of the art market in the preliminary stage before the full-scale art market formation. The business model for the pre-market in arts consists of three dimensions.

The first dimension evolves sustainable funding, which is crucial to developing and nurturing the art market. The pathways to financing in arts involve government funding, social donations, and non-market voluntary activities. Market demand for works of art also serves as a primary revenue source for works of art. Furthermore, the government or private foundations can donate to foster this art market or directly consume works of art as buyers.

The second dimension evolves diverse artist groups in supply, creating amateur artists and transforming them into professionals in the art market. Initially, amateur artists can gain various experiences from the early growth of the art market. In addition, the government can contribute to vitalizing the supply-side ecosystem through various government projects for amateur artists.

The third dimension is sustainable demand for products that amateur artists can produce. Through government purchases, the government can provide the funding necessary for this amateur-based art market, and public institutions can support the amateur art market through policy instruments. The business model for the preliminary art market will create future social value by learning through groping trials and errors through collaboration with amateur artists, the government, and the community. The combination of amateur artists' engagement and smart policy instruments can make the future social art market a sustainable business model. Furthermore, this business model can provide community-based innovative solutions necessary for the evolution of the preliminary art market from the perspective of open innovation.

Keywords: Art market, amateur artists, social market, quasi-market, government funding, community innovation, open innovation

Business Model of K-Youth Culture

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Abstract

In my personal experience that I've been interacting with youths from various countries, there is a certain tendency that they recently become very interesting about Korean Culture especially Korean youth culture. Youth culture means all of things that young people in society use such as their clothes, shoes and cosmetics. Due to the explosive growth of the Korean drama, film, and K-pop industries, Korean culture has become a mainstream culture in the youth culture of many countries. Based on this trend, I would like to present a k-youth culture business model for youths in various countries. This business model is structurally similar to Musinsa, a representative online complex shopping mall. But there is a difference in marketing and service. Existing online shopping malls sell tops, bottoms, and hats individually. However, in order for these fashion items to gather and create a style, and for this style to become a trend, it is important to provide a combination of fashion items in consideration of the physical characteristics of consumers. I add this service to my business model and this service will works as competitive element.

Competitiveness in E-mobility industry

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Abstract

The automobile industry has undergone major changes over the past decade. The electronics industry that enables various controls has been added to the mechanical engineering-oriented manufacturing, which produced transportation means centered on the existing internal combustion engine, and the software industry, which can be called the processor of the electronics industry, has been expanded to the field of mobility. In particular, as the term mobility is used, the field of industry is also expanding significantly (Kodama, 2019). E-Mobility is a relatively recent concept and refers to a means of transportation with electric power that takes charge of the first and last mile in the field of movement. E-Mobility includes micro electric vehicles, electric motorcycle, electric bicycles, electric scooters, etc. (Sanggon, K. et al., 2020; Dongmin, L, 2020; Korea Smart E-Mobility Association, 2020)

As e-mobility merges with the realm of mobility, the prospects related to e-mobility are also predicted positively. The global e-mobility market is expected to grow from US$29.1 billion in 2019 to US$564 in 2030 at a CAGR of 6.2% (Navigany research, 2021).

In this situation, Korea, one of the major automobile manufacturing countries, is making efforts to foster the e-mobility industry centering on local governments. However, it is difficult to foster the e-mobility industry in the e-mobility market, which is a low-tech sector centered on price competitiveness. Therefore, it is not expected that it will not be easy for a company to grow with competitiveness on its own, unlike a typical automobile company. In this study, the factors affecting the performance of e-mobility companies are divided into internal factors and external factors, and implications for improving the company's competitiveness are drawn.

Research related to the growth of a company is based on the internal characteristics of the company. In particular, the strategy of the manager as an entrepreneur is important (Strorey, 1994; Papadaki and Chami, 2002). These management strategies can be divided into technology development and non-technology management activities, and technology development can be divided into various subdivided variables such as R&D strategy and patent strategy. Business activities also include various detailed variables such as debt management and transaction management.

Exploring the Driving Forces of New Retail Business Model Innovation in China

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Abstract

The purpose of this paper is to deeply analyze the effects of the driving forces of the new retail business model innovation on the ultimate goal of retail, consumer experience improvement, and to explain the essence of new retail business model innovation, so as to benefit future theoretical study in retail business model innovation and the management practices of retail industry executives. Wang (2019) distinguished "new retail" with traditional retail through technological innovation, management innovation, model innovation, service innovation and process innovation. What's more, Wang (2020) believed that new retail is a retail behavior and business organization that integrates online and offline channels based on emerging technologies such as big data and artificial intelligence, develops and utilizes contemporary logistics and consumption scenarios to provide consumers with the best consumption experience. Qiu (2019) regards that new retail innovation is driven by the development of information technology, the change of consumer demand, the bottleneck of traditional online retail e-commerce development, the complementary advantages of the combination of physical retail stores and online retail stores, and the promotion of government and market. Su (2017) and Zhou (2020) propose that technological innovation is the basic driving force for the emergence of "new retail". It was the technological innovation that makes the reformation of better consumer insight, retail supply chain, multi-scene consumption, online and offline channel integration possible. Diao (2012), Qiu(2019), and Yang (2020) respectively used systems thinking as the major method to build business model innovation framework and took practice case study to further explore the path of new retail business model innovation.

Innovation capabilities and technology commercialization in the smart farm sector of Korea

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Abstract

The purpose of this study was to analyze how innovative facility investment and innovative research manpower capabilities of venture companies related to the 4th industrial smart farm affect the technological performance of patents and design registrations, and the financial performance of sales and operating profit. As a research method, a total of 47 venture companies were selected as a sample and regression analysis was performed. Research Results This study analyzes the technological commercialization factors of venture companies related to the 4th industrial smart farm and proposes to expand the budget for R&D government tasks for financial and technological success. In the future research direction, I believe that more discussionis needed on the contribution of companies to quantitative and qualitative growth.

This study defines the capabilities of venture companies' smart farm companies as facility investment and technology development and research manpower capabilities, and analyzes the performance that companies create through them. Through this, the analysis was focused on what competencies need to be focused among the competencies required for companies due to the change of the smart farm technology ecosystem following the 4th industrial revolution and how they affect company performance. In this study, not only discussing corporate performance from a financial point of view, but also discussing patent registration and design registration, which are non-financial performance, verifies the company's innovation capability in the overall aspect and the correlation created through it, and The main purpose is to analyze the effect of the innovation capability of farm venture companies on the performance.

The open innovation of smart farm-related venture companies has a positive (+) effect on the company's technological performance of patents and design registrations.

Recruitment of research manpower for technology development by venture companies related to smart farms has a positive (+) effect on the company's technological performance in patents and design registrations.

Corporate open innovation has a positive (+) effect on corporate financial performance of sales and operating profit.

Industrialisation, Ecologicalisation and Digitalisation (IED): Building a theoretical framework for sustainable development

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Abstract

In the past two decades, manufacturing has witnessed significant transformations along with challenges (Moore, 1993). The worldwide established contexts, experiences, and principal models of industrial systems are no longer practical, instead it starts to lean towards the integration of industrialisation and ecological concerns (Shi et al., 2021; Campbell-Johnston et al., 2020). Meanwhile, digital transformation has enabled flexible & adaptable new organisational structures (Jian et al., 2017). The Covid-19 pandemic has further revealed the importance of resilience in the current volatility, uncertainty, complexity, and ambiguity (VUCA) conditions(Li, 2020), which requires for a holistic evolution process considering the synergy between industrialisation, ecologicalisation and digitalisation (IED). This paper aims to answer the research question: "How to integrate the three aims – industrialisation, ecologicalisation and digitalisation – for sustainable development?"

A systematic literature review is conducted, and an integrated framework is proposed based on the review of these 5 areas as well as cases.

After a thorough exploration into the five interactive bodies of knowledge within IED:"Industrialisation-Ecologicalisation","Ecologicalisation-Digitalisation","Industrialisation-Digitalisation","Digitalisation-Industrialisation", and"Digitalisation-New Organisation Structure" is covered. Key themes are summarised with the identification of research gaps. A theoretical framework is then synthesised and developed aiming to achieve synergy from IED with the modules, integration architecture, mechanism, and dynamic paths. To articulate the key research question, we propose the following theoretical framework (Figure 1), with the aim to achieve the integration and synergy of IED.

Based on the framework, a new process orientated abductive research method is proposed with respect to the research (Table 1).

Diversified Paths to Improve Operating Efficiency of Patent Operation Platforms: A Fuzzy-Set Qualitative Comparative Analysis Based on TOE Framework in China

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Abstract

There is a trend to identify patent intermediary in the context of platform ecosystem in China, especially after the release of 'develop a market-oriented way to promote intellectual property operation services' from China National Intellectual Property Administration (CNIPA) in 2014. Called as 'patent operation platforms'(POPs), they have made a great contribution to Chinese patent market, with providing several patent related services. Yet, few studies have focused on their operating efficiency in the current patent market. This study evaluates them by using a fsQCA method under TOE framework in purpose of exploring paths to improve POP's operating efficiency.

The emergence of patent intermediary in the patent market can be embarked on the construction of patent system and the implementation of patent monetization strategy (Petrusson,2010; Krishna, 2020). Based on the innovation ecosystem, POP plays the role of creating and sharing values of related innovation resources as the carrier in the innovation ecosystem, aiming to stimulate the patent market, revitalize the value chain of patents, and promote the co-prosperity of all market players in the innovation ecosystem (Yun,2021). However, studies focus on evaluating their operating efficiency are limited (Kim,2020). Moreover, the factors influencing POP's operating efficiency are still under explored (Og et.al,2020). Thus, in order to fill the research gap above, this study will evaluate the operating efficiency of POP in China, by using the methodology of fsQCA under the instruction of Technology-Organization-Environment framework (TOE).

Keywords: operating efficiency; patent operation platform (POP); fsQCA; TOE framework

Factors Affecting Innovation in the Clothing and Textile Industry: Towards the Circular Economy

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Abstract

Companies in the clothing and textile industry include elements of circular economy in their businesses to make production more sustainable. The inclusion of these elements is strongly connected with innovation implementation; however, it is not always clear to companies what is key to successful innovation. Therefore, it is crucial to determine the most important factors affecting innovation implementation.

Systematic Literature Review (SLR), online survey (71 companies in Latvia), correlation analysis, and analytic hierarchy process (AHP) survey are the methods applied to answer the research question. Data collection from both companies and experts ensured triangulation.

Twenty-one factors have been identified as important for introducing process, product, and organizational innovations in the empirical research. The factors are divided into groups, with Research and Development being the most important group of factors.

The study had the following restrictions – process, product, and organizational innovations were studied in the Paper; hypothetical effects on innovation were only studied for the factors found in the literature review; only those factors that are, directly or indirectly, dependent on companies are examined in more detail in the Paper. As a result of the study, a method for assessing the business readiness to implement innovations in the circular economy context has been developed and tested (clothing and textile industry). The developed method can be used by companies to identify priority aspects that need to be improved to foster innovation in the context of the circular economy. The Paper concludes with the recommendations for future research.

Keywords: Innovation, Knowledge Acquisition, Circular Economy, Clothing, Textile, Manufacturing

Is Groupthink Really Inevitable? The Self-Organizational Perspective

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Abstract

Groupthink has often been described as a fiasco in the organizational knowledge creation process. Studies that propose solutions for the prevention of the negative effect of the groupthink phenomenon are ongoing, however no consensus could be identified therein. This study revisited Janis's groupthink model and proposed a new solution by adopting a self-organizational perspective. First, results from the confirmatory factor analysis showed that defective decision-making does not necessarily originate from groupthink. Second, the results from the agent-based model simulation indicated that the groupthink phenomenon occurs regardless of any antecedents. The combined results of the two analyses performed in this study found that groupthink is unavoidable, at best. It concludes that the ex-post strategy can be more effective than ex-ante actions.

Keywords: organizational knowledge management, groupthink, self-organizational perspective, confirmatory factor analysis, agent-based model

1. Introduction

Our modern knowledge-based society values knowledge as a core competitive advantage of an organization (Kim et al., 2014). It follows that an organization's capabilities to create knowledge is a determining factor in its success or failure. (Kim et al., 2016). If decision-making is restricted and conformity is encouraged during the organizational knowledge creation process, it may lead to inefficiency within the organization. An initial tendency to engage in consultation whereby consensus is reached prematurely may ultimately produce detrimental results for an organization.

Earlier studies have attempted to define this linear process through the concept of groupthink, widely perceived as a negative organizational fiasco. Groupthink is defined as a mode of thinking that group members engage in when they are dominated by the concurrence-seeking tendency, when their strivings for unanimity override their motivation to appraise the consequences of their action (Janis, 1982). Groupthink was a restriction in decision-making and was characterized by a strong motivation for unanimity during the organizational knowledge creation process (Hart, 1991).

Swansea University Prifysgol Abertawe
Society of Open Innovation Technology, Market & Complexity
DGIST

A Study on Design Education Related to Attitude of Accepting AI-Based Design

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Teasun Kim(Corr.).

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Abstract

The development of 4th industrial revolution and replacement of various fields with the artificial intelligence (AI) are improving people's quality of life. However, such replacement with AI is expected to cause confusion. Especially, while the creativity has been regarded as the exclusive field of humanity, AI is now developed enough to suggest diverse creative designs based on the machine learning beyond the existing computer technologies.

Among AI technologies, a generative design technology is an AI technology widely used in the design field. This AI-based design technology not only generates images but also new voice and video contents within a short time.

Such development brings up a question on whether AI is the alternative or partners of the designers. Still, there are ongoing controversies over the replacement of humanity with AI because people have different thoughts and opinions on AI. Some researches point out the need for active and education for the AI design. However, the different aspects associated with accepting the AI influence on the attitude of accepting AI. Thus, in order to enhance the practical values of AI, it is necessary to narrow the gaps in thoughts toward AI design and come up with appropriate design education.

The purpose of this study is to come up with the measures for utilizing AI design and improving design education by evaluating the AI contents and analyzing the attitude of accepting them.

1. What are AI design technologies and how are they applied?
2. What are the issues associated with AI design?
3. How do designers and engineers accept AI design?
4. What are the better ways to utilize AI design and improve design education?

AI made people's lives more productive (Nadikattu, R. R, 2016). The generative adversarial networks (GAN) technology used for generating or editing images in the AI design competes with the generator AI system which generates fake data based on the data generation technology and discriminator AI system that discriminates such fake data to generate the virtual result values that are hard to tell the difference from the actual data (Goodfellow, Ian, et al, 2014).

Exploring the social construction of counterfeit purchases as social reality: Externalization, objectification, and internalization

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Kwangho Jung
(Seoul National University)
Jane Workman
(Southern Illinois University)

Abstract

This paper examines the phenomenon of buying counterfeits in terms of the perspective of the social construction process. Various human activities are social products socially formed through social construction. The so-called 'fake purchase,' in which the process of luxury consumption has evolved by purchasing counterfeit goods, represents deviant consumer behavior as a social product of social reality. The social reality of aberrant consumption called fake purchases consists of diverse processes of social construction. Previous studies on counterfeit purchases have focused on empirical analysis or legal and institutional analysis for the motives of counterfeit consumption. However, such past studies have neglected how counterfeit purchases are socially constructed and evolve into a social reality in the capitalist consumption culture. A survey methodology or technique on what psychological and social preferences are associated with counterfeit consumption has overlooked the nature of the social reality inherent in fake purchases. Research on legal devices and institutions to curb counterfeit consumption entails limitations in identifying hidden factors in counterfeit consumption. We need to pay attention to the process of counterfeit purchasing as an externalization of consumption behaviors of individual deviance embedded in the phenomenon of luxury consumption. In a significant black market worldwide, fake consumption represents an objectified phenomenon as a universally apparent market. Furthermore, as the legitimacy of counterfeit purchases has socially been shared among friends and peer groups, the past misdemeanor of fake consumption can reinforce consumer motivation to buy new counterfeits through the internalization process.

Keywords: Counterfeits, Social Construction, Consumption as Social Reality, Externalization, Objectivation, Internalization

An Experiment on Digitalizing Gratitude and Improving Trust

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Rina Numabe

NEC Solution Innovators Ltd., Japan

Pham Thahn Quang

NEC Solution Innovators Ltd., Japan

Shugo Sugawara

NEC Solution Innovators Ltd., Japan

Abstract

According to Gallup's State of the Global Workplace Report 2021, the employee engagement score in Japan is one of the worst scores in 141 countries. In Japan, it is one of the important issues for companies to improve their employee engagement. After 2020, COVID-19 has established telework in Japanese companies. The telework made clear to difficulty of building trust, engagement or well-being on work without face-to-face communications. Thus, it is a problem to building trust, engagement or well-being in telework.

In our previous studies, we found that gratitude using a smartphone app had strongly a correlation with prior survey results for trust in colleagues. Specifically, we defined a measure of the complexity of the gratitude network, the triangular network density, and found a correlation between this measure and the survey results for trust in colleagues. However, this experiment did not reveal the effect of gratitude intervention using the smartphone app. Therefore, we have to confirm that the gratitude with digital devices improve trust in colleagues as a factor of employee engagement. In this paper, our purpose is to report the results of another experiment to confirm the effect of gratitude intervention using the smartphone application.

Recently, the social function of gratitude has been studied. Algoe et al. confirmed that gratitude behavior affects the people who witness it [1]. Makri et al. investigated the experience of gratitude in online communities and proposed a process model of social gratitude: the gratitude cycle [2]. Masaki et al. confirmed the impact of collective gratitude on affective commitment in organizations [3]. Sciara et al. confirmed that witnessing gratitude on social networking services (SNS) only partially enhances subjective wellbeing [4]. Algoe suggested the "find-remind-and-bind" theory, which demonstrated the effect of gratitude on strengthening relationships via her intervention studies [5].

Impacts of the local government's visa waiver program on Tourism in Jeju Island

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Abstract

As Jeju Special Self-Governing Province was launched on July 1, 2007, Jeju Island began to implement visa-free entry Jeju Island (hereafter Jeju) is the largest island in Korea located in the southern sea of the Korean Peninsula. Jeju, formed from lava caused by volcanic eruptions, is an island with beautiful natural scenery and is registered as a UNESCO World Heritage in recognition of the ecological value for geological and biodiversity. Because of these characteristics, Jeju is famous as a world-class tourist destination, and the travel and tourism sector accounts for 17.9% of Jeju's GRDP (Gross Regional Domestic Product). In particular, according to 2006 'Jeju Statistics', tourism income per foreign tourist is three to four times that of domestic tourists. Therefore, foreign tourists play an important role in the Jeju tourism industry.

On the other hand, Visa is known as a powerful institutional tool for controlling the number of foreign visitors to a country (Neiman and Swagel, 2009; Neumayer, 2010; Belenkiy, 2014; Reilly and Tekleselassie, 2018). Gato and Akai (2017) studied the effect of visa easing on the number of legitimate visitors from 172 countries who visited Japan from 2000 to 2014. Through this, it is revealed that visa easing has a positive effect on an increase in legitimate foreign visitors. Hu (2013)'s study on the impact of the US visa waiver program on tourism demand also revealed that it had significant benefits on inbound tourism demand.

From those, as a part of encouraging foreign tourists to Jeju, Jeju local self-government introduced a visa waiver program (hereafter JVWP) that allows foreigners who visit Jeju for tourism or transit purposes to enter and stay in Jeju for up to 30 days without a visa. In 2006, travelers from seven countries including Japan, China, Hong Kong, Malaysia, the United States, Singapore and Taiwan accounted for 98% of Jeju inbound tourism. Among them, China was the only country affected by JVWP since the other six countries had a visa waiver agreement with South Korea and tourists from these countries were permitted to enter Jeju regardless of JVWP.

Open Innovation and Wellbeing: In relation to `The Postpandemic Future of Work`

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Abstract

During the pandemic, well-being becomes a key word for the people's concern. In fact, there is a talk that well-being will be the central idea after the SDGs which will be over 2030. Why so? How does it relate to the open innovation, global capitalism, and our sustainability concerns?

This conceptual paper tries to ponder how well-being practices relate to the open innovation especially in the postpandemic future of work. The paper concludes: Open innovation will be the "standard" characteristics, and introduction of well-being practices will be critically important in the postpandemic future of work. In fact, those well-being practices will facilitate the open innovation and vice versa. If successful, the introduction of well-being practices can make the global capitalism more compassionate, because people will be more mindful, kind, empathetic and compassionate. At the same time, the introduction of well-being practices can make the global capitalism more sustainable, because people will be more sensitive to environment and sustainability. We expect that open innovation will play a key role, when combined with well-being practices, for the well-being of people of the global capitalism and sustainability.

Purpose/ Research Question :

1. How does 'the Postpandemic Future of Work' relate to the Open Innovation?
2. How does 'the Postpandemic Future of Work' relate to the Well-being?
3. How does the Open Innovation contribute to the well-being in the postpandemic future of work?
4. What are the implications for the global capitalism and sustainability

The literature related directly to the well-being and open innovation are few.

In terms of the Future of Work, one which had read widely is by Malhotra. His model will be presented in the finding part of this slide. (Malhotra, Arvind. The Postpandemic Future of Work. Journal of Management. 2021, 47, 5 . 1091-1002.)

Well-being is a broad concept. Therefore, literature related to well-being needs to be checked by components of well-being. The components of well-being practices are listed in the table of Methodology section.

Innovation of tacit knowledge management via digital transformation in the demographic transition era - case study on a national R&D project of the Korean ceramic industry

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Abstract

Innovation and technological developments including electronic records, virtual reality (VR) training programs and digital coaching network (Barney & Wright, 1998) are significant research themes of KM, therefore KM perspective needs to be incorporated into technology development when it comes to for example capturing tacit knowledge or sharing knowledge within organizations. However, this kind of rational consideration is frequently overlooked in many of R&D projects funded by the government especially due to a rush for developing technologies itself.

The main objective of this study is to qualitatively analyze a national R&D project funded by the Ministry of Trade, Industry and Energy (hereinafter, MOTIE) with a framework of tacit knowledge management which is operationally constructed based on previous literature studies. The second is to identify a gap between the ideal and the reality while taking KM into account, finally, the answers are explored regarding the following research question: "How to enhance innovation performance and competitiveness of national R&D projects from the perspective of innovation management?"

While the worldwide fertility rate declined to almost half since the second half of the twentieth century (Gallagher, James, 2020), life expectancy has rapidly risen across the globe over the past 50 years. The global society is in the middle of a major demographic transition, and the impacts including the falling share of the working-age population are obvious among the industrialized countries (Callen et al., 2006), thus even change the structure of society, economy an industry. Developing countries with increasing size of the working-age population have shown relatively stronger per capita growth, thus enjoy more or less direct and immediate the first demographic dividend effect (Lee & Mason, 2006) coming from a larger share of working population with supporting fewer children, it is however on condition that the increasing labor force is effectively utilized (Cruz & Ahmed, 2018).

When physical and human capital of a country are successfully accumulated as its population ages, labor productivity as well as per capita household wealth rise due to the second demographic dividend effect (Lee & Mason, 2006).

The impact on audience attention and media brand choice using media brands uniqueness phenomenon.

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Deniss Sceulovs

Professor Dr.oec., Riga Technical University, Latvian

Abstract

While in recent years, research on media brands like TV, movies, music, books, or other traditional media has increased, very few studies focus on media brands like news media and their branding strategies, especially regarding unique brand associations unrelated to media brands content and its impact on audience attention and media brand choice. Many studies focus on content as a media brand element and its vital role in audience choice of brand. As much as it is true, in a marketplace where news and information are oversaturated and similar, the question arises for news media brands – what is the point of difference and uniqueness between news media brands if content across the outlets is the same? This is especially crucial for a younger audience that is more platform and experience-oriented. In an environment where multi-platform delivery decrease media brand associations and content experience become more important, the question of how media brands can ensure their brand preference and choice in a highly competitive marketplace becomes increasingly essential for media brands.

As the authors analyse, data shows that younger audiences use less national media and give preference to foreign media outlets, and then the question arises about the future national media audience. Today more than 80% of advertisers investments in digital media goes to global brands like Facebook, Google, Youtube. For the last ten years, a proportion of advertising volumes invested in international brands instead of national ones continues. The advertising money follows the audience patterns that spend more time and content on global media brands. Therefore, the research on the uniqueness of media brand association that positively influence audience attention and media brand choice by the younger audience would not only answer some challenging questions for national media brands how to attract a younger audience but also give a critical basis of finding how to answer the audience need for seamless media brand experience across multiple platforms and without loosing and keeping strong and unique media brand associations.

The research aims to present the role of the content consumption experience on the uniqueness of media brands and its impact on brand choice and attention.

Water Treatment Technology Trends Through Patent Data Analysis in the Age of Digital Transformation

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Abstract

Abnormal climate and industrialization threaten water source water safety by damaging the hydrological cycle and changing the process of pollutants and pollutants leakage. Water treatment technology is now evolving into smart and digitalization to stabilize river water quality and restore healthy river water circulation. Water is an essential factor in human survival. Water treatment technology should be managed as a national survival technology at the national level to secure water resources continuously. Analysis of research trends in the field of water treatment technology based on objective data should be prioritized to manage water treatment technology at the national level. Monitoring the emergence of new technologies helps managers and decision-makers understand the development trends of emerging technologies and is very important for government R&D and strategic planning.

Natural language processing began after computers appeared in the 1940s, and as computer performance developed significantly in the 1990s, a large-scale corpus was built to enable statistical analysis using various methods. Since the 2000s, with the development of machine learning, deep learning technology that automatically finds and improves hidden meaning patterns by learning by itself based on documents that computers continue to add has been studied in earnest[1]. Patent data contains various information such as application date, registrant, patent title, technical summary, cited information, and detailed technology, so its utilization value is very high. In addition, patent data is used as important data because it can see the overall flow of technology trends and related industrial/market trends depending on the analysis method[2].

Keywords: Water Treatment Technology, Digital Transformation, Patent Data Analysis, R&D Policy, Natural language processing

SOI & Swansea University 2022 Conference

July 6(Wed.) ~ 9(Sat.), Conference Days, 2022
Swansea University
(Faraday Building, Singleton Park Campus), Wales, UK
& Online(Zoom)

July 08 (Friday)

July 08 (Friday)

Venue: Faraday Lecture Theatre, Faraday Building, Swansea University, Wales, UK, 09:00~10:30

Platform innovation

Online Chair: Lei Ma(Nanjing Univ. of Science and Technology, China)

Offline Chair: Jang Hyun Kim (Sungkyunkwan University, Korea

- Paper 1: "Knowledge flow mechanism for platform innovation ecosystem: Multiple case studies on intellectual property operation platform in China" by **Lei Ma, Ben Zhang*, Liying Wang, Zheng Liu, Kaitong Liang**
- Paper 2: "Factors affecting open innovation performance of venture firms: focusing on innovation mode with university and research institute" by **Cheongho Na, EungDo Kim***
- Paper 3: "Barrier to establishing communities of practice around circular economy: Study of the Welsh Circular Economy Innovation Communities" by **Staffen James, Zheng Liu, Gary Walpole, Gareth RT White**
- Paper 4: "Risk management and innovation : Analytical mapping using CiteSpace" by **ShaoPeng Che, Dongyan Nan, Shunan Zhang, Jang Hyun Kim***
- (Online)Paper 5: "Development and Future Trends of Media Economy Amid Technological Evolution: A China Perspective" by **Shi Xiaojin, Wu Jinxi**

July 08 (Friday)

Venue: Faraday Room B, Faraday Building, Swansea University, Wales, UK, 09:00~10:30

Digital Smart and Socially Inclusive Design & New Directions for Corporate Finance and Innovation

Offline Chair: Taesun Kim (HanYang University, Korea)

Online Chair: Erwei Xiang (Newcastle University, UK)

- Paper1: "Designing for Children - Strategies for the digital transformation of basic education for refugee children" by **Zhang Xi, Hongyuan Zhao, Kim Taesun**
- Paper 2: "Open Innovation and Cost Efficiency in an Emerging Economy" by **Xiaowen Tian, Erwei Xiang, Wenjuan Ruan**

- Paper 3: "Exploring a way of sustainable development of intermediary organizations supporting the innovative SMEs in the region — A case study of TAMA (Technology Advanced Metropolitan Area) Association in Japan" by **Kodama, Toshihiro**
- Paper 4: "Success Factors for Innovation: A Bayesian Network Approach" by **Seungwon Yu, Jaeseong Kim**
- Paper 5: "Digitalizing the Pillars of Hybrid Civic Universities" by **Joao Leitao, Dina Pereira, Ângela Gonçalves, Tiago Oliveira, and Joaquim Ferreira**

July 08 (Friday)

Venue: Faraday Room C, Faraday Building, Swansea University, Wales, UK, 09:00~10:30

Innovation Lag, Social Construction, Creativity, and Autonomy & Green Governance: Code and Evaluation

Offline Chair: KwangHo Jung(Seoul National University, Korea)
Online Chair: Weian Li(Nankai University & Tianjin University of Finance and Economics, China)

- Paper 1: "The Effect of Organizational Performance on Recruiting Female Workers in State-Owned Corporations" by **Jineui Hahm, Kwangho Jung**
- (Online)Paper 2: "Human Capital-Driven Organizational Innovation Ecosystem" by **Min-Ren Yan, Ting-Cheng Lee***
- Paper 3: "Can Stability of Board Contribute to fulfill Corporate Social Responsibility?——Based on Evidence of A-share Listed Companies" by **Lun Wang, Runhui Lin**
- (Online)Paper 4: "Digital transformation of higher education fundraising campaigns: the importance of donors' segmentation" by **STRAUJUMA Anita, LOZE Lelde**
- Paper 5: "Empirical study on the process of servitization in the Product Service System with the digitization; Focused on Manufacturing firm" by **Junghee Han**

July 08 (Friday)

Venue: Faraday Room D, Faraday Building, Swansea University, Wales, UK, 09:00~10:30

Open Innovation in the new era. The role of artificial intelligence

Offline Chairs: Valentina Della Corte(University of Naples Federico Ⅱ, Italy) & Giovanna Del Gaudio(University of Naples Federico Ⅱ, Italy)
Online Chair: Mari Iizuka(Doshisha University, Japan)

- Paper 1: "Organization culture and Open Innovation: A Case of Daikin" by **Mari Iizuka, Yuko Shiotani**
- Paper 2: "A Study on the Effects of Learning Orientation of Technology Startups on Autonomy, Proactiveness, Competitiveness and Management Performance" by **ByungYun Bae, Chulok Ahn, Sungyong Choi***
- Paper 3: "A study on optimal distinctiveness of strategic CSR to maximize the impact of technological innovation on firms' value" by **SooHwan Choi, JaeWook Yoo***
- Paper 4: "The customer's emotional experience along the Artificial Intelligence journey: the case of Mrs. Connie and Mr. Pepper." by **Valentina Della Corte, Giovanna Del Gaudio, Fabiana Sepe, Simone Luongo**

July 08 (Friday)

Venue: Faraday Lecture Theatre, Faraday Building, Swansea University, Wales, UK, 13:30~15:00

Open Innovation in Biomedical Industry

Offline Chairs: Eungdo Kim(Chungbuk National University, Korea)
Online Chair: Zheng Liu(Cardiff Metropolitan University, UK)

- Paper 1: "Impact of use emerging technologies on organizational knowledge creation capability by task complexity" by **Namjun Cha, Eungdo Kim***
- Paper 2: "Industrial Symbiosis and Open Innovation" by **David T. X. Shang**
- Paper 3: "Analysis of patent activity trends by IPC in the IT-related field using Korean registered patents" by **Youeil KIM, EuiSeob JEONG*, Sangwoo KIM**
- Paper 4: "Innovation in Crisis: an examination of the interoperation of Triple Helix actors in response to Covid-19 pandemic" by **Staffen James, Zheng Liu*, Victoria Stephens, Gareth RT White**
- Paper 5: "A study of communication network management: A case study of the Overseas Technical Certification Process in the Korean Rail Industry" by **Choi, Jeeyeon**

July 08 (Friday)

Venue: Faraday Room B, Faraday Building, Swansea University, Wales, UK, 13:30~15:00

Climate Change in Digital Transformation Era & Digital Transformation and Smart Governance in the Context of Big Data (3)

Offline Chair: Sang-Don Lee(Ewha Womans University, Korea)

Online Chairs: HONG Ming Yong(GUIZHOU UINIVERSITY, CHINA), ZENG Fang Mei(Yuan Ze University)

- Paper 1: "Changes in Species Richness and Distribution of Birds in Winter in Korea" by **Minkyung Kim, Sang-im Lee, SangDon Lee, Piotr G. Jablonski***
- (Online)Paper 2: "Smog, firm evolution and macro-economic efficiency: evidence from 800-mm isoline in China" by **Wu Dewang, Liu Xin**
- (Online)Paper 3: "Do environmental subsidies efficient on air pollution: Games and empirical evidence" by **Liu Xin*, Xu Chunmei**
- (Online)Paper 4: "Analysis on the mechanism of population structure on carbon emission" by **Fu Haowen**
- (Online)Paper 5: "Ethical responsibility of a company in the context of digital transformation of work: conceptual model" by **ROSA Angelina, LOBANOVA Liudmila**

July 08 (Friday)

Venue: Faraday Room C, Faraday Building, Swansea University, Wales, UK, 13:30~15:00

Digital Transformation and Smart Governance in the Context of Big Data (4) & Knowledge service, open innovation and firm performance

Online Chairs: LI Ye(GUIZHOU UINIVERSITY, CHINA), WANG Ting(GUIZHOU UINIVERSITY, CHINA)

Offline Chairs: Hun Park(KISTI, Korea), Jinwoo Sim(KISTI, Korea) & Tae-Eung Sung(Yonsei University, Korea)

- Paper 1: "Effect of Knowledge Services on Organizational Performance based on the Concept of Balance Score Cards: Evidence from South Korea" by **Heon-Hwi Lee, Jae-Woong Jeong, Hun Park***

- Paper 2: Exploring firms' endeavours in adopting circular economy - a case study of a leading glass manufacturer in Taiwan" by **Sirirat Lim, Perpétue Cornet**
- (Online)Paper 3: "Construction of Research Model of Tourism Function System under the Background of Smart Tourism Development" by **Yu yi**
- Paper 4: "Finding out user characteristics by metaverse platforms" by **Jinwook Hong, Jungwan Han**
- Paper 5: "Positioning as a Catalyst Towards Innovations" by **STRAUSA Evita, ENCE Enno, GAILE-SARKANE Elina**

July 08 (Friday)

Venue: Faraday Room D, Faraday Building, Swansea University, Wales, UK, 13:30~15:00

Digital Transformation for new business innovation & Digital Transformation and Smart Governance in the Context of Big Data (5)

Offline Chair: Junic Kim(KonKuk University, Korea)

Online Chairs: RAN GuangGui (GUIZHOU UINIV., CHINA), LACE Natalja(RIGA TECHNICAL UNIVERSITY, LATVIA) and HONG Yun (GUIZHOU UINIV., CHINA)

- Paper 1: "Science, technology and innovation strategies for local government" by **Saimi Woo**
- Paper 2: "Digital Transformation and Continuous Improvement as a Catalyst for Sustainability and Open Innovation" by **ROBERTSONE Galina, LAPINA Inga**
- Paper 3: "6D Model to foster design creativity: Analysis of design creativity instructional model for higher education" by **Youbin Kim and Junic Kim***
- Paper 4: "Finding opportunities to improve the COVID 19 self quarantine policy of S.Korea based on inbound foreign students' experience" by **Ma Xinton, Kim Taesun**
- Paper 5: "New Possibilities of knowledge Innovation and human resource development Generated by Self-Reflection at COVID-19" by **Naomi Kinoshita, Yusuke Tanaka & Yuri Sadoi**

Knowledge flow mechanism for platform innovation ecosystem: Multiple case studies on intellectual property operation platform in China

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Abstract:

Platform theory is a research hotspot in the field of innovation management, especially in the platform innovation ecosystem, which has gradually attracted more and more scholars' attention (Huang et al., 2020). This is also known as digital innovation ecosystem type II (Zhang, et al., 2021). By reviewing the relevant literature, it is found that the current research mainly discusses the interactive relationship between platform strategy and platform innovation ecosystem from the perspective of platform core competence. There are a few empirical studies, but there is a lack of systematic analysis on the role and status of knowledge flow in platform innovation ecosystem at the micro level.

Based on the innovation ecosystem theory (Zhang and Huang, 2021; Baierle et al., 2021), this paper further analyzes the acquisition, processing and spillover of platform knowledge flow, and discusses how the knowledge flow path supports the development of intellectual property operation business model. Through multiple case comparative studies, embedded analysis is carried out on multiple digital innovation platforms such as China's National Public Intellectual Property Operation Platform, Sixlens, China University Intellectual Property Operation and Trading platform.

Factors affecting open innovation performance of venture firms: focusing on innovation mode with university and research institute

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Abstract

The extant studies on the innovation process described the process leading to technology development, and commercialization targeting technology innovation (Rogers, 1995; Roper et al., 2008). In this context, open innovation researches have also examined the relationship between innovation activities and performances with external actors, focusing on R&D and commercialization. Therefore, the extant open innovation research classified partner types according to roles (e.g. university as a role for R&D, supplier as a role for production) and explored the relationship between open innovation and innovation performance at the actor level. However, as the complexity of technology increases and the innovation process becomes more complex, actors are required to play various roles. For example, universities have traditionally played a role in R&D and education, but since the 2000s, as a corporate university, they have performed various roles such as business operation support, marketing support, and equipment support (e.g. Gassmann and Becker, 2006). In addition, research institutes are required not only to output through R&D but also to achieve outcomes through technology commercialization, and for this purpose, they carry out various innovative activities such as configuring industrial networks. This means that the university possesses not only scientific and technological knowledge, which is codified knowledge, but also the tacit knowledge based on experience required during the innovation process. Furthermore, in real world, firms do not use collaborative partners as fixed roles of partner types, but they perform various collaborative activities with partners according to their strategy. In other words, the roles of actors are diversified and firms are using them strategically, but previous research on open innovation is examining the relationship with innovation performance by limiting the characteristics and roles of partners at the actor level.

Barriers to establishing communities of practice around circular economy: Study of the Welsh Circular Economy Innovation Communities

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Zheng Liu (corr.)
Cardiff Metropolitan University, UK
Gary Walpole
Cardiff Metropolitan University & Swansea University, UK
Gareth RT White
Cranfield University, UK

Abstract

With sustainability orientation and opportunities provided to economic growth, the circular economy is much promoted by the Welsh government, which has planned to be world-leading in reducing, reusing, and repairing. There is evidence of efforts being made to change industry practice. Government policy plays a central role in planning, regulation, controlling and standardization of the circular economy, whilst enabling knowledge sharing, job creation, and reducing environmental impacts at a regional level. Innovation in terms of technology, product, and business model can be main drivers of the circular economy. Meanwhile, university based green innovation projects emerge along with an increasing awareness of ethical and sustainable consumption from society. These factors together promote a network-featured innovation ecosystem known as the Triple/Quadriple Helix. The transformation of circular economy also heavily reply on the communities of practice (CoP) which is deliberately created to link various industry sectors together, sharing best practice and generating network effect. The motivation of CoP is clear in the context of sustainability-oriented and Triple Helix innovation; however challenges remain. This paper aims to find out the challenges and barriers to creating CoP around the circular economy. It conducts an in-depth case study of the Welsh Circular Innovation Communities (CEIC) project to explore details.

Literature review cover sustainability-oriented innovation, Triple Helix and Quadruple Helix, CoP and Circular Economy. The Triple Helix model consists of an evolutionary process in which each helix of university, industry, and government keeps its distinctive characteristics while simultaneously assuming the role of the others in a non-static non-linear way (Etzkowitz, 2003).

Risk management and innovation : Analytical mapping using CiteSpace

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Abstract

The uncertainty carried by innovation makes innovation and risk management inseparable (da Silva Etges and Cortimiglia, 2019). However, too low-risk management may not affect innovation, and too high-risk management may stifle the core competitiveness of innovation (Bowers and Khorakian, 2014). Therefore, how to better apply risk management to innovation has always been a topic of concern in industry and academia. This study explores how risk management was involved in innovation between 1988 and 2021. First, this study analyzes the temporal distribution of publications. Second, this study Identified scientific collaboration networks and learned about productive authors, institutions, and countries in the field. Third, this study Unearthed key literature, topics, authors, and journals in the field. Finally, we suggested potential future development paths. This study aims to conduct a scientometric analysis of academic publications on the application of risk management in the field of innovation to systematically investigate the existing development patterns and potential research trends in the area. The main objectives of the research are as follows:

1. Analyzing the distribution of publications.
2. Identifying scientific collaboration networks and learning about productive authors, institutions, and countries in the field.
3. Unearthing key literature, topics, authors, and journals in the field.
4. Suggesting potential future development paths.

Risk management is conceptualized as operational activities that maximize the value of a company by reducing the costs related to cash flow volatility (Stulz, 1996, 2003). The major risk management activities are diversification and risk hedging employing diverse instruments, including derivatives and structured products, market insurance, self-insurance, and self-protection (Dionne, 2013).

Development and Future Trends of Media Economy Amid Technological Evolution: A China Perspective

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Wu Jinxi

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Abstract

The rapid evolution of technology is as much of an opportunity to media economy as it is a challenge. Specifically speaking, the prevailing technological environment featuring rapid changes and evolution of big data, AI, 5G and blockchain, among other technologies, has provided new opportunities and challenges alike for media economy, reshaping on a constant basis people's understanding and knowledge of the existing media forms, industrial structures, business models as well as their related research paradigms. Against the backdrop of an unstable international situation following the Sino-US trade conflict, coupled with a slowdown of China's domestic macroeconomic growth, the advances of science and technology are of vital importance to further energize the media market and accelerate the upgrading of industrial structures. In this light, this paper delves into the impacts and changes that the evolution of such technologies as big data, AI, 5G and blockchain exerts on the production, distribution and consumption of media economy, and thereby looks to forecast where the media economy is heading in the years to come.

This paper delves into the impacts and changes that the evolution of such technologies as big data, AI, 5G and blockchain exerts on the production, distribution and consumption of media economy, and thereby looks to forecast where the media economy is heading in the years to come.

The study of media economy has been going on for more than 40 years since its advent in 1978. Such studies are generally believed among the academia to have undergone four major stages: the embryonic stage (1978-1992), where the economic attributes of media industry became known and accepted; the burgeoning stage (1993-2002), where in-depth observations of media behaviors, marketization practice and management experiences were made from the perspective of market; the shaping stage (2003-2012), where a theoretical system was gradually established and developed; and the current stage (2013-present), where the scope of research subjects under technological innovation and advancement is running wider and the research system is taking ever deeper roots. The rapid evolution of technology is as much of an opportunity to media economy as it is a challenge.

Designing for Children - Strategies for the digital transformation of basic education for refugee children

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Abstract

Learning in primary education is one of the most crucial challenges facing refugee children in Europe today. It is a prerequisite for allowing communication and integration into local life. This study to address this fundamental issue, this study uses a combination of qualitative and quantitative research methods to explore and analyze the educational needs of these refugee children by collecting data and information through face-to-face interviews and relevant literature reports and proposes a 4C (Communication, Collaboration, A 4C (Communication, Collaboration, Creativity and Critical thinking) learning model was developed to assist refugee children in their essential learning. This learning model provides systematic functional and non-functional requirements, including integrating OER open educational resources different media types to develop an educational curriculum and delivery process framework that can be linked to cultural and social contexts. This study also illustrates the use of the proposed learning model by providing a working prototype of a digital learning system. In this, refugee children can learn through collaborative and free learning resources. In addition, this study discusses the proposed education system model with various socio-technical determinants of well-being to facilitate access to learning for refugee children in different cultural and environmental contexts.

The research in this paper focuses on the situation of refugee shelters in Greece, aiming to give every refugee child access to education. Helping them to acquire knowledge and learn work skills that guarantee a primary livelihood and safeguard their right to education, the value of this research lies first and foremost in its commitment to developing pedagogical strategies that provide equal opportunities for refugee children, who constitute a new generation of Europeans, to be successfully integrated into all regions of their new homeland. The digital 4C education model that has been devised will also serve as a model and direction for other European countries about the education of refugee children.

Keywords: Education Digital transformation, OER(Open Educational Resources) , refugee Children, Social Inclusion

Open Innovation and Cost Efficiency in an Emerging Economy

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Abstract

In an emerging economy like China characterized by weak protection of intellectual property rights, local firms typically do not have an advantage in the development of ground-breaking new products, but have an advantage in leveraging cost advantage in radically new ways to offer customers more for less. Therefore, openness for innovation is likely to have a positive relationship with cost efficiency in China. The study draws on the open innovation literature, the cost innovation literature, and contingency theory, and tests hypotheses against a sample of firms collected by the World Bank from China in 2012. We find that openness for innovation is positively related to cost efficiency gains. The positive relationship is not sensitive to firm size, but is driven mainly by manufacturing firms and private firms. Findings of the study have important implications for firms in China and, potentially, firms in other emerging economies.

if firms in an emerging economy like China do not benefit from openness for innovation in new product development, why do they engage in open innovation?

Zeng, M., & Williamson, P. 2007. Dragons at your door: How Chinese cost innovation is disrupting global competition. Boston: Harvard University Press.

Williamson, P. 2010. Cost innovation: Preparing for a 'value-for-money' revolution. Long Range Planning, 43: 343-353.

Luo, Y.D., Liu, Y., Yang, Q., Maksimov, V., & Hou, J. 2015. Improving performance and reducing cost in buyer–supplier relationships: The role of justice in curtailing opportunism. Journal of Business Research, 68(3): 607-615.

The study draws on the open innovation literature, the cost innovation literature, and contingency theory, and tests hypotheses against a sample of firms collected by the World Bank from China in 2012.

Exploring a way of sustainable development of intermediary organizations supporting the innovative SMEs in the region — A case study of TAMA (Technology Advanced Metropolitan Area) Association in Japan

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Abstract

Through the analysis of the patent application status, to identify the outcomes of R&D and collaboration formation of supported enterprises by the intermediary organizations.

Although business ecosystems are often discussed independently of regional concepts, Scaringella and Radziwon (2018), by a systematic review of ecosystem literature and reviewing established territorial approach theories, pointed out that there are similar ecosystem concepts to clusters and regional innovation systems. Radziwona and Bogers (2019) focused on SME open innovation and pointed out that clarifying relationships of SMEs with other organizations in their ecosystems contributes to both ecosystem and open innovation research and showed through case studies that there are many challenges in SME open innovation.

This paper focuses on the role of intermediary organizations as a solution to the problems of open innovation in SMEs. Studies that discuss the role of intermediaries in open innovation include Hernandez-Chea et al. (2021) and Lee et al. (2010), but not many.

In this context, Kodama (2008), based on an empirical study of the TAMA cluster project (in the western part of the Tokyo Metropolitan Area), which is a model project of the 'Industrial Cluster Plan' in Japan, examined the intermediation effect of the TAMA Association. In addition, Kodama (2017) (Japanese) introduced methods in which the TAMA Association acts as an intermediary organization between technologically advanced SMEs and large enterprises in a situation where many large enterprises do not disclose their needs information.

By quantitatively analyzing the patent application status of TAMA Association member companies, this paper aims to develop Kodama (2008) and Kodama (2017) and vexamine the effects of the activities of the TAMA Association on the autonomous R&D and collaboration formation activities of the member companies, and thereby to contribute to clarify the significance of intermediary organizations for the development of industrial clusters or regional ecosystems.

To compare the number of patent applications and the number of joint applications by member companies before and after joining the TAMA Association etc., using the TAMA Association which is an intermediary organization in a typical industrial cluster project in Japan as a case.

Success Factors for Innovation: A Bayesian Network Approach

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Abstract

Until now, many researchers have made great efforts to investigate the causal relationship with performance by focusing on detailed and specific activities through empirical research on innovation. However, there were rare that researches on how changes in variables about innovation change other variables and how much changes. Through this study, we intend to derive mechanisms between innovation capabilities, innovation activities, and knowledge flows for each type of innovation and verify this theoretical relationship structure through Bayesian Network Analysis.

Early theories mainly described innovation as a linear process of technology push or market pull (Von Hippel, 1976; Rosenberg, 1976). But recently, as many scholars have identified the complex causal relationship of innovation, we have become able to recognize that innovation occurs through various processes.

In the fields of innovation and science and technology, 'Logic model' is widely used for program evaluation and policy evaluation. In the literature related to innovation, researchers generally divide several stages of the innovation process into Resources/Inputs(input resources into one activity)stages, Activities stages, Output(results derived from activities) stages, and Outcome(effects from results) stages (McLaughlin & Jordan, 1999; Jordan, 2010; Park, 2015). These previous studies show a general 'Logic Model' for innovation process. Noh(2015) argues that a more complex logic model contains several causal paths, feedback loops, the effects of other factors and situations, and unintended output. We think that the innovation logic model can be modified and supplemented through interdependence between variables and multiple feedback loops. In other words, we would like to test the existing innovation logic model and find the answer to the question, "Which variable is the most successful factor leading to innovation and how did it contribute through which mechanism?" However, there is a limit to the development and verification of logical models(Knowlton & Phillips, 2013). Because the described logical model may not be accurate, verification is always necessary, but verification may not be easy.

Digitalizing the Pillars of Hybrid Civic Universities

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University of Beira Interior, Portugal

Abstract

Revisiting the traditional tripartite mission of Higher Education Institutions, and based on a systematic literature review, this study contributes, in an innovative way, for identifying the pillars of Hybrid Civic Universities. The systematic approach to the literature rendered for timeframe 1 (1980-2008), a sample of 8,702 articles, and for timeframe 2 (2009-2021), a sample of 8,359 articles, collected from the Web of Science (WoS) database, and the Scopus database. Cluster analysis allowed the identification of 5 significant clusters, for timeframe 1, and 4 significant clusters, for timeframe 2, which make it possible to contrast and analyze both samples, in terms of the evolution of the most prominent components of Civic Universities. The main empirical findings provide a new taxonomy for Hybrid Civic Universities, based on three main pillars: (I) Open Innovation; (II) Governance; and (III) Sustainability. Several implications are also provided, positioning Hybrid Civic Universities, as open and hybrid hubs without walls, with a transnational orientation targeting open innovation, digital governance, and sustainable development, respecting the values of diversity and multiculturalism.

Keywords: Digital Transformation; Higher Education Institutions; Open Innovation; Governance; Sustainable Development Goals.

The Effect of Organizational Performance on Recruiting Female Workers in State-Owned Corporations

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Kwangho Jung
(Seoul National University)

Abstract

Gender quota law requires a number or percentage of women (in some areas, men) to make up a minimum group share. The "Public Corporations Operation Act" amendment states to increase the proportion of female executives in public corporations to 15% by 2015 and 30% by 2017. However, despite the efforts, the proportion of newly recruited female workers in market-type state-owned corporations with higher salaries was only 22.2% in 2020. Therefore, the need to analyze the contributing factors that increase the female employment rate seems significant. This paper analyses the effect of organizational performance on recruiting female workers in state-owned corporations in South Korea based on the "Amenity Theory," "Negative Shock Theory," "Social Responsibility Theory," and "Corporate-Distinct Factory Theory." Organizational performance is measured through labor productivity and the ratio of net income to net sales, and the female employment ratio is calculated through the proportion of female workers. In addition, this study collects data from market and quasi-market type state-owned corporations, which have more apparent organizational outcomes. The correlation between the dependent and independent variables is analyzed through multiple regression analysis. Based on the theories, it is anticipated that there will be correlations between the female employment ratio and organizational performance in state-owned corporations.

Keywords: Recruiting Female Workers, Organizational Performance, State-Owned, Corporations, Gender Quota Law

Human Capital-Driven Organizational Innovation Ecosystem

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Abstract

In the era of Knowledge-based economy, the key for enterprises to create value lies in how to use the Human Capital within the organization to enhance the external customer relationship capital, thereby enhancing the organization's competitive advantage. When the human capital in the organization is higher, the business performance of the enterprise is higher, so through human capital, the level of the organization's business performance can be measured. Therefore, the cultivation, promotion and transformation of human capital has gradually become an important task in the overall planning of the organization today, and it also lays the foundation for sustainable development in the future. Therefore, with the ever-changing knowledge, how to improve human capital has become a common issue faced by today's enterprises. Past studies have also pointed out that only through continuous learning can help organizations adapt to the fierce external market competition.

However, there is still a lack of systematic research and explanation on how to drive organizational performance through human capital investment in practice. This is because the organization itself is an ecosystem. With the evolution of time, it will lead to the Co-Evolution process of competition, collaboration, and interaction among members. Therefore it is not easy to see the relationship between human capital and organizational performance from a single point.

Most scholars in the past have only studied the development of human capital or the operation of organizational innovation ecosystems. There is less comprehensive and systematic thinking about the interaction between the two. At the same time, although past studies have laid a solid theoretical foundation for the innovation ecosystem, most of them tend to explore the impact on the ecosystem from the industry level, and there is a lack of research on the impact on the innovation ecosystem from the company level.

Therefore, through systems thinking, this study adopts a multi-case method to analyze the three companies which representing different industries.

Keywords: Human Capital, Innovation Ecosystems, Systems Thinking, Balanced Scorecard

Can Stability of Board Contribute to fulfill Corporate Social Responsibility? ——Based on Evidence of A-share Listed Companies

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Abstract

This paper uses the data of A-share listed companies from 2012 to 2018 as a sample to empirically test the influence mechanism of the stability of board members on corporate social responsibility. There is an obvious inverted U-shaped relationship between the stability of board members and corporate social responsibility. Corporate governance and director remuneration both enhance the inverted U-shaped relationship between the stability of board members and corporate social responsibility, which not only enhances the positive relationship between moderate board stability and social responsibility, but also strengthens the negative impact of excessive stability of board membership on corporate social responsibility. The moderating effect of marketization on the inverted U-shaped relationship between the stability of board members and corporate social responsibility is not significant. This article enriches the research in the field of board governance and corporate social responsibility, and has reference value for promoting corporate social responsibility.

Key words: Board Stability; Corporate Social Responsibility; Corporate Governance; Marketization; Director Compensation

Digital transformation of higher education fundraising campaigns: importance of donors' segmentation

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Anita Straujuma

Ph.D., Institute for Quality Engineering, Faculty of Engineering Economics and Management, Riga Technical University

Abstract

Donating to higher education institutions is an old and important tradition around the world. As technology develops, donation opportunities are becoming more extensive, and universities should use the available solutions to reach a larger donor audience. To find a donor who is willing to donate, universities or non-profit organizations need to choose the right donor segmentation to achieve the objectives of the donation campaign more effectively. The use of digital devices can help to improve the results of fundraising campaigns because devices provide opportunities to get donations from all over the world [1]. Also, digital solutions help to make decisions that are data-based, help to target the necessary audience or a specific segment, use artificial intelligence for decision-making, and ensure transparency and accountability of financial flows. Donor segmentation is the most effective way how to attract donors in fundraising campaigns. Especially when we talk about fundraising for non-profit organizations and educational institutions, private donations rarely happen [2]. Donor segmentation can help a university or non-profit organization to understand donor type, their hierarchy and how to make relationships with them [3]. The reason organizations do not keep a database of donors with introduced variables that could segment them is the lack of information and quality of data of donors. And even if the data is kept in a very developed system, the database will have limited resources to make deep segmentation because organizations cannot keep and know very personal details of donors [4]. The digital fundraising campaigns should be divided into smaller campaigns, so donors can see the specific goal and find one that meets their personal values [5]. Results of donors' segmentation have a beneficial impact on fundraising campaigns. [6]. Usually, researchers rely on a priori segmentation techniques and use demography as a variable [7] . Only a few models of segmentation use posthoc segmentation [8]. They use the classification and regression tree (CART) methodology to separate variables and then predict similar characteristics to why alumni are donating [7]. It is important to remember that many models are based on assumption that potential and existing donors who have similar traits or have been assigned with the same variables will behave similarly to donation [7].

Empirical study on the process of servitization in the Product Service System with the digitization; Focused on Manufacturing firm

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Abstract

Few paper dealt with the uptake of servitization for manufacturing firms although the PSS has been utilized as means of innovation ways, especially in the era of 4th industrial revolution. Pursuing the business model innovation has become the subject of firm survive. More recently business model evolution in manufacturing firm has caught a lot attentions of business owners. Extending product value or servitization is also archetype of business model innovation. This paper fulfills and analyses the process of product-service system (PSS) using a single case study methodology. The product-service offering is referred to as a value proposition representing the benefit for which customer is willing to pay. This paper explores that product service system process can be classified into three steps based on findings; (1) manufacturing support phase, (2) derivative of value at manufacturing phase and (3) convergence of manufacturing and service.

Keywords: business model, system innovation. business model innovation. Product Service System.

Organization culture and Open Innovation: A Case of Daikin

Mari Iizuka, Yuko Shiotani

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Abstract

Introduction of Daikin: Since its founding in Osaka in 1924, Daikin has expanded business focused primarily on air conditioning to over 160 countries. Aiming to help solve social and community problems and grow business, Daikin strives to meet expectations and maintain trust worldwide as a global company that supports human health and comfort while creating new value for air and the environment.

Under the strategic management plan Fusion 25, we are also challenging new fields for sustainable development in a global society.

Keywords: Organization culture, Open Innovation, Daikin

A study on the effect of digital transformation of start-up companies on knowledge management performance

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Abstract

The purpose of this study is to empirically investigate the success factors, detailed mechanisms, and effects of digital transformation on knowledge management performance of start-up companies' digital transformation, the driving force of economic growth. In the era of the 4th industrial revolution, advances in digital technology and improved data availability have changed consumer behaviors and expectations, triggering disruptive innovations that destroy the laws of competition. Recently, digital transformation has emerged as an important phenomenon in the research field of strategic information systems (Bharadwaj et al., 2013; Piccinini et al., 2015), and its importance is being emphasized in the practical field as well. (Fitzgerald et al., 2014;). Today, digital transformation has become a leadership agenda and an essential strategic task (Fitzgerald et al., 2014; Singh & Hess, 2017; Hess et al, 2020; Schiuma et al., 2021), but how organizations are transitioning toward digital. Our understanding of this is still lacking (Warner & Wäger, 2019). Considering the disruptive nature of the digital world, in order to survive, start-ups must build a competitive advantage through active acceptance. However, there are very few studies that have verified a comprehensive understanding of the digital transformation phenomenon and the relationship between knowledge management performance and performance, and it is even more difficult to find empirical studies for start-up companies. This study will examine the causal relationship between financial performance and non-financial performance, which are the sub-factors of digital transformation, digital competency, digital leadership competency, and knowledge management performance, targeting start-up companies.

Schiuma et al. (2021) provided valuable insight and theoretical evidence on leadership practices in the digital age as a digital transformation leadership framework that evaluates the characteristics of smart leaders driving organizational digital transformation in today's complex business environment. Priyono et al. (2020) analyzed how SMEs cope with environmental changes caused by the COVID-19 epidemic by pursuing business model innovation with the support of digital technology as a qualitative case study method for 7 manufacturing SMEs in Indonesia.

A study on optimal distinctiveness of strategic CSR to maximize the impact of technological innovation on firms' value

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JaeWook Yoo (Corr.)

Prof., Konkuk University, South Korea

Abstract

This study is to examine the optimal level of strategic CSR to maximize the performance of technological innovation activities. The first research question is whether technological innovation and CSR conformity have a positive direct-effect respectively on firms' value. The second research question is whether technological innovation and CSR conformity have a positive interactive effect on firms' value. Based on resource-based theory, stakeholder theory, and optimal distinctiveness theory, we suggested a research model to examine the main effect of technological innovation and CSR conformity, and also the interaction effect of them on the performance of Korean manufacturing firms.

Technological innovation that is considered an investment for future revenue generation have positive effect on firm value [3]. Firms that engage in strategic CSR are able to get good image and reputation from stakeholders [1]. They can increase the level of performance by making cooperative relationships with internal and external stakeholders. It makes firms easier to obtain legitimacy to access necessary resources. Firms are able to maximize their profits through optimal distinctiveness, a strategy that includes legitimacy and differentiation in balance [5]. Lim, Kim and Yoo [2] found that Korean firms tend to regard high strategic conformity as a successful global strategy due to the historical characteristics of government-led growth and the characteristics of export-oriented industries. Porter and Karmer [4] presented some practical examples of strategic CSR that increases the impact of technological innovation on performance. As an example, Toyota, an automobile manufacturing company, effectively reduced air pollution through the development of eco-friendly hybrid vehicles and positioned itself as a leader in hybrid technology ahead of its competitors in the market by quickly responding to the demand for social responsibility.

To answer research questions, we analyzed the KEJI index, which is widely used as a CSR index in Korea. In particular, we used the 2018 index to analyze the most recent data that could well reflect the impact of recent environmental changes. As a research sample, 128 listed companies in the Korean manufacturing industry were selected.

The customer's emotional experience along the Artificial Intelligence journey: the case of Mrs. Connie and Mr. Pepper.

Valentina Della Corte*

Full Professor, University of Naples Federico II, Italy

Giovanna Del Gaudio

Researcher, University of Naples Federico II, Italy

Fabiana Sepe

Ph.D., University of Naples Federico II, Italy

Simone Luongo

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Abstract

A growing number of researchers have devoted their efforts towards examining the concept of customer's emotional experience (CEE) in the service industry in general and specifically in the hospitality and tourism industry (Tuerlan et al., 2021). This topic has increasingly appeared as a focal point in conjecture with other research topics in the academic literature, such as innovation (Kokins et al., 2021). Previous studies focus on different aspects of CEE and have not resulted in developing a comprehensive and integrated framework to highlight the main traits of CEE associated to the Artificial intelligence (AI), a powerful technology that fosters open innovations such as intelligent automation and digitization (Shinde et al., 2021). To fill this gap, this paper proposes a conceptual model of CEE toward the use of Artificial Intelligence and validate it through research carried out in the hospitality industry. Accordingly, particular attention is paid to the definitions and the measurements of experiences common to the literature review on CEE and the adoption of AI in the hospitality industry in order to identify different and unique experiences' attributes. Based on the aim this study tries to achieve, the research questions are:

1. What are the key dimensions of CEE toward the use of AI in the hospitality industry?
2. How does the use of robot concierge influence CEE?

In latest years, the focus of marketing practices has shifted from producing and selling consumer goods to develop customer relationships through service marketing and nowadays to craft holistic customer experiences. In the service sector, customers are an external part of the business relationship and their insights provide valuable information about the hotel service (Diaz and Duque, 2021). In this regard, the attention has been put on the concept of CEE.

Keywords: artificial intelligence, experience, emotion, robot concierge, hospitality industry.

Impact of the use of emerging technologies on organizational knowledge creation capability by task complexity

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Abstract

In a knowledge-based economy, an organization's ability to create knowledge is the most important factor in maintaining its competitiveness. Collective intelligence is considered as one of the effective ways to not only create knowledge about complex problems, but also become a core competency in organizational knowledge management. The use of emerging technologies is an important strategy in improving the organization's ability to create knowledge through collective intelligence by adding depth and breadth of knowledge. However, excessive use of technology often has a negative impact on organizational knowledge management. Therefore, this study aims to identifying two-sided effect of using emerging technologies (bigdata analytics and online platform) on organizational knowledge creation according to the complexity of the task. The study results suggest that the use of bigdata analytics technology for organizational knowledge creation should be maintained at an appropriate level in general, but it is recommended to increase the use of bigdata analytics technology for low-complexity tasks. In addition, using an online platform technology is difficult to consider as a strategic way to solve high-complexity tasks, but increasing the use of bigdata analytics technology can contribute to improving the organization's ability to create knowledge.

Keywords: Organizational knowledge creation, Bigdata analytics, Online platform, Task complexity

Industrial Symbiosis and Open Innovation

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Abstract

Industrial Symbiosis can have an extremely large impact to the entire community as it brings economic, environmental, and social benefits. There is, however, still knowledge and relationships between the various cogs and gears in Industrial Symbiosis that have been overlooked; once such mechanism is open innovation which are extremely key parts that support the foundations of an Industrial Symbiosis system. This research thus aims to review the impact that open innovation has had on existing Industrial Symbiosis systems and look into expanding and further explaining the relationship between Industrial Symbiosis and open innovation via case studies and interviews.

Purpose

The world is currently facing many sustainability challenges such as climate change and resource scarcity due to the growing population and resource consumption (The World Bank, 2018). One method of tackling these sustainability challenges is through the use of symbiosis systems such as Industrial Symbiosis systems (Ness & Xing, 2017). Industrial Symbiosis systems will ultimately reuse as many resources as possible while also bringing many economic, environmental, and social benefits to the organisations that participate in this system. This is why the development and adoption of the symbiosis systems have flourished.

Due to its expanding popularity, there is now a large body of literature that is still rapidly growing on symbiosis systems. However, it mostly focuses on material symbiosis and lacks information on the impact that innovation has on Industrial Symbiosis systems (Albino, et al., 2015). This research thus aims to further explore the relationship between industrial symbiosis and open innovation as well as its importance in the overall system.

Keywords: Industrial Symbiosis, Urban Symbiosis, Innovation, Open Innovation

Analysis of patent activity trends by IPC in the IT-related field using Korean registered patents

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Abstract

Trends of patent activity by technology fields were analyzed using 1.8 million patents registered in Korea over the past 20 years. The technical fields used here were based on IPC-Technology concordance data provided by WIPO. As a result of analyzing the trends of activities in 35 technical fields, IT-related fields existed in the top ranks with increased activity and at the same time in the top ranks with decreased patent activity. The technology fields that are on the rise in activity were 'Digital communication' and 'IT methods for management', while the declining fields were 'Telecommunications' and 'Basic communication processes'. Next, the trends of patent activity were examined for each IPC that constitutes these fields. Among the four IPCs that make up the upward trend fields, only "Transmission of Digital Information (H04L) IPC showed a slight decline, while the rest of the IPCs were included in the upward trend top 3. The top IPCs in the downward trend included four IPCs in the 'Basic communication process' field and 'Selecting' (H04Q) in the 'Telecommunications' field. As a result of the rapid development of the industry of the IT-related fields, patent activities of general communication technologies have declined. However, patent activities related to distribution of digital content, such as broadcasting or processing of digital information, have increased.

Keywords: Registered Patents, Activity Index, Technology Fields, Linear Regression Analysis, IT-related fields

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Innovation in Crisis: an examination of the interoperation of Triple Helix actors in response to Covid-19 pandemic

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Abstract

The Covid-19 pandemic has resulted in huge disruption to the healthcare sector. In response to this crisis, there have been collaborative effort among universities and industry for production and service innovation. On a regional level, Triple helix, referred as the interaction among university, industry, and government demonstrate a non-linear way of innovation (Etzkowitz, 2003) through dynamic interaction. Practically it has used as a model for economic development in the South Wales. The need for cooperation between the three actors within the triple helix models has been understood in the region for the best part of a century, at least. The relationship between each actor is diffuse. Indeed, the categorising of entities and individuals themselves can be challenging, with many belonging to academia, government and industry simultaneously. Government healthcare is provided through university health boards with close ties to academia and teaching hospitals in which employees may be defined as either of these actors. The nature of relationships can change depending on context. Whilst an individual would naturally take a different role when undertaking their different responsibilities, they remain the same person and their personality and social relationships remain the same.

This paper reports upon a study of the innovation activities that arose in response to the Covid-19 pandemic in 2020. Adopting a Triple Helix perspective, it aims to understand the primogenitors of three medical innovations.

Our review of the Covid-19 literature in the field of business and management identified only four empirical studies. Two of these were made upon the previous SARS-CoV-2 type coronavirus and are therefore of limited value to the current situation (Petcu and David-Sobolevschi, 2020; Raghav and Dhavachelvan, 2020. The other studies examined the stock price of companies in response to Covid-19 (Ding et al., 2020) finding those with stronger balance sheets fared best, and an examination of social media feeds of companies (Sharma et al., 2020) to reveal that supply chain issues were organizations' main concerns.

Keywords: Triple Helix, Innovation, Covid-19

A study of communication network management: A case study of the Overseas Technical Certification Process in the Korean Rail Industry

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Abstract

The project of supporting standard certification acquisition is part of the activities for sustainable growth. In many countries, the market for technology certificate tests is gradually expanding in its role and size. Therefore, many countries have been working on policies and activities to support their testing and certification institutions. This study explores ways to effectively support technology certification tests by developing and applying efficient networks and communication systems and management of technical tests of SMEs in Korea. Additionally, this study also seeks ways of strengthening the competitiveness of the international certification markets by establishing and developing a system for capacity building the Korean certification industry. For this purpose, the network between the related organisations is analysed based on the Multi-Level Perspective Framework. Overall, the study finds that, in a technical certification test, a collaborative network of various participants act at the regime-level across almost all areas, such as science, technology, culture, politics, society and economic markets; this is novel and is very important in practice. Furthermore, it can be confirmed that communication and knowledge exchange activities, organisational culture and capability of the organisation play a more significant role than external environmental factors. By confirming this, the study aims to shed light on the Korean Testing Laboratory's role and importance as the leading participant in the technology certification industry, both domestically and internationally.

Keywords: Communication systems, Innovation, Multi-Level Perspective, Railway Industry

Changes in Species Richness and Distribution of Birds in Winter in Korea

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Abstract

Changes in the geographical distribution of species are not only caused by anthropogenic migration of animals, but also through climate change (Aldrich and Weske 1978). Changing the distribution of many species and individuals without human intervention is caused by climate. It can be predicted that climate will certainly change the distribution of species and strategies of migration in the future. The Korean Peninsula is located on the East Asian–Australian Flyway (EAAF), one of the world's nine major migratory birds migration routes EAAF not only has more migratory waterbird species than any other migratory bird migration route, but also has a high migration rate of endangered species in the world. For the conservation of migratory birds using the Korean Peninsula, this study examines changes in the habitat distribution of migratory birds that winter in the Korean Peninsula, and conducts a study of changes in response to climate change.

The distribution pattern of migratory birds interacts with migration strategies and is a major factor in explaining changes in birds due to climate change(Walther et al. 2002). In 1880-2012, the global average surface temperature rose by 0.85℃, while in Korea during the same period (1912-2017), about 1.8℃ (KMA and Minstry of Environment 2020). In general, warming trends are expected to extend the range of many southern species to the north, increasing species abundance in the north(Virkkala and Lehikoinen 2017).

Large-scale data on wintering birds that are simultaneously surveyed during the winter season for a total of 22 years from 1999 to 2020 by ministry of Environment are used. Grid-type data were constructed to compare the long-term yearly distribution and regional distribution changes, and point-type data were converted to raster data. Therefore, the point was converted to a cell size of 0.25 and analyzed as an average value.

Keywords: climate change, spatiotemporal, waterfowl, distribution, winter bird

Smog, firm evolution and macro-economic efficiency : evidence from 800-mm isoline in China

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Abstract

We constructed a quasi-natural experiment based on the differences in the severity of smog on the two sides of the 800-mm annual precipitation isoline according to the actual distribution of precipitation gradients in China to examine the effects of smog on economic growth and explore the effect of governance on smog reduction and economic growth.

While earlier studies established a relationship between pollution and productivity from the perspectives of human capital (Bell & Davis, 2001; Pope Iii et al., 2002) and labor prices(Hanna & Oliva, 2015; Hausman et al., 1984), it is only in recent years that for the first time, Graff Zivin and Neidell (2012)empirically assessed the impact of ozone pollution on productivity using electronic payroll data collected from large farms in the Central Valley of California as a proxy for productivity. The results showed that every unit increase in ozone concentration significantly reduced the labor productivity of U.S. farmers by 0.5 percentage points. This finding reveals the evidence for the effects of air pollution on microeconomic performance, and since then, researchers began to empirically examine the impact of air pollution on the productivity of economic units. For example, Adhvaryu et al. (2019) analyzed the data of garment factories in Bangalore India and found that each 10μg/m 3 increase in PM2.5 concentration led to a 3-percentage-point drop in workers' hourly productivity. Similarly, T. Chang et al. (2016) analyzed employee data from a pear factory in northern California and found that smog significantly reduced employees' productivity. A relevant phenomenon was also found in the nuclear energy sector(Barros & Managi, 2016). Archsmith et al. (2018) found that PM2.5 significantly affected the error rate of softball umpires in the USA, which was consistent with the conclusion that PM2.5 affected labor productivity. China is one of the major countries affected by smog, and Chinese researchers have also conducted studies on smog-related air issues. For example, T. Y. Chang et al. (2019) analyzed the data on Shanghai-based call center operators and found that air pollution reduced the operators' productivity.

Do environmental subsidies efficient on air pollution: Games and empirical evidence

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Abstract

This paper aims to explore the relationship between government's environmental subsidies and pollution control, and analyze whether environmental subsidies can effectively promote pollution control and curb emissions.

Researchers have mainly examined the following aspects of environmental pollution control.

Based on Kuznets inverted U-curve hypothesis proposed by Kuznets (1955), Crossman & Krueger (1995) proposed the Environmental Kuznets Curve, arguing that in the long run, the level of environmental pollution and economic growth would show an inverted "U" relationship, and environmental quality would deteriorate and then improve with the increase of GDP per capita in the process of industrialization. Inspired by that, governments in many countries have actively increased investment in environmental protection and relevant technological innovations, and adopted policies for environmental regulation and pollution control. Environmental subsidy and pollution charge are two common environmental regulation tools, which provide different incentives for firms. This paper aims to examine the incentive effects of environmental subsidies on environmental pollution control, as environmental subsidies would have effects on firms' environmental protection investment as well as their cost structure, which would in turn have effects on production activities and thereby on economic performance.

On the relationship between environment and firms' economic performance, Wally and Whitehead (1994) argued that environmental performance pursued by firms would compromise their competitiveness, and in a specific industry, if a firm's environmental cost far exceeded its peers, its marginal profits would decline by a big margin, thus with its competitiveness compromised. Simpson and Bradford (1996) also argued that strict environmental regulations could induce firms to make innovations only under very special circumstances and would therefore lead to competitive advantages. However, some scholars held that improved environmental performance was a potential competitive advantage for firms, because it could lead to better corporate image, increased sales and market share, faster environmental permit-granting for new products, and earlier access to new markets.

Keywords: environmental subsidy; emission reduction efficiency; net PM2.5 emissions; R&D

Analysis on the mechanism of population structure on carbon emission

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Abstract

Industrial activities are an important source of carbon emissions. Population aging indirectly affects human production and life by changing population structure. The change of dependency ratio means demographic transition, which has different impacts on industrial production activities, so it has different impact on carbon emissions. Based on China's national conditions, it is more urgent to study the impact of aging on carbon emissions by influencing industrial production activities, compared with the impact of gradual aging process on carbon emissions. Therefore, it is necessary to analyze the internal path of the impact of aging on carbon emissions. Based on the analysis, this paper makes hypotheses :(1) the change of population dependency ratio can effectively affect the total amount of carbon emissions; (2) Dependency ratio also considers the relationship between birth rate and death rate, so the impact of dependency ratio on total carbon emissions is periodical, and there is an inverted u-shaped relationship between dependency ratio and carbon emissions. (3) According to the analysis of the formation path of demographic dividend and human capital dividend, the dependency ratio of population will reduce the labor participation rate in industrial production by reducing the number of labor population and increasing the burden of old-age support, which will impact the effective labor input of production input factors; At the same time, the reduction of children's dependency ratio and intergenerational raising culture of China may improve the children's education of man-powered and capital investment, and increase human capital accumulation to influence the industry structure and innovation ability of industrial production. In a conclusion, The relationship between dependency ratio and carbon emissions shows inverted "U" type of relationship.

At present, domestic and foreign scholars focus on the specific relationship between population aging and carbon emissions. Among them, York and Shi found a positive correlation between the proportion of working-age population and carbon emissions, which means that the increase of the proportion of elderly population will promote the reduction of carbon emissions. Michael (2008) used the general equilibrium method to analyze and also concluded that population aging has a restraining effect on long-term carbon emissions. By transforming KAYA identity, Cole and Neumayer (2004) using IPAT model as theoretical basis, and Li Feiyue (2015) respectively found a significant inverted u-shaped curve relationship between population size and carbon emissions.

Ethical responsibility of a company in the context of digital transformation of work: conceptual model

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Abstract

The purpose of the research is to investigate the interrelationship and interdependence between company's ethical responsibility and digital transformation of work, with account of the dynamic processes of open innovation, and based on the findings, propose a conceptual model to address the following research questions. How does digitalization of work impact ethical responsibility of a company? How does ethical responsibility of a company impact digital transformation of work? How are the two phenomena related to open innovation?

Companies' responsibilities are not only limited to responsibilities for their economic performance and sustainable development in compliance with the law and regulations, but companies are also expected to conduct their business in an ethical manner. Ethical responsibilities refer to the performance of a company which is expected by society. In other words, it implies that a company operates their business fairly and duly, notably in the cases where practices, policies and standards are not codified into law [1}. Furthermore, Carroll [1] emphasizes that incorporating the ethical values into the economic, legal, ethical and philanthropic categories of a company's responsibility significantly enhances the role of ethics and makes it vital. Ethics embraces issues which are above legal considerations, and, in this regard, ethical conduct is guided by the principles of morality and integrity.

Nowadays, the concept of ethical responsibility acquires special significance with regard to new processes taking place in the field of open innovation and digitalization. In line with contemporary scientific knowledge, a group of scholars put forward the view regarding the need to revise theories and conduct new empirical research relating to digital and open innovation environments [2].

The emergence of new markets, the development and improvement of business models, the growing importance of innovation - these and other changes are largely due to the digital evolution changes. The phenomenon of Digital Transformation (DT) is analyzed conceptually by Vial [3]. When analyzing 23 unique definitions of digital transformation, Vial [3] concluded that the concept of DT is primarily concerned with organizations.

Effect of Knowledge Services on Organizational Performances based on the Concept of Balanced Score Cards: Evidence from South Korea

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Abstract

Since the 2000s, the global economy has shifted to a knowledge-based economy where knowledge and ideas play an important role in economic activities. The OECD defines a knowledge-based economy as "an economy based directly on the production, distribution and use of knowledge and information."[1] In a knowledge-based economy, knowledge and technology are emphasized and knowledge is utilized at every stage of value creation, such as input, process, and output of a product or service. The recent emergence of a knowledge-based economy has drawn great attention to knowledge services from researchers in innovation research. The research objective of our study is to elucidate the effect of knowledge services on organizational performances based on the BSC(Balanced Score Cards) concept.

Our previous studies[2-4] addressed the direct and indirect effects of KSs on the business performance of firms. A mediation variable of decision making was introduced to analyze indirect effects from KSs to business performances. The indirect effect of KSs on business performances by decision making was stronger than the direct effect of them. This study added BSCs concept to the previous reports. The concept of BSCs was first introduced in 1992 by David Norton and Robert Kaplan, who took previous metric performance measures and adapted them to include nonfinancial information.[5] BSCs were originally developed for for-profit companies but were later adapted for use by nonprofits and government agencies. The balanced scorecard involves measuring four main aspects of a business: Learning and growth, business processes, customers, and finance.

A survey was conducted to collect data that are related to independent, dependent and mediating variables. 1,306 SMEs which received and utilized KISTI knowledge services more than once was invited to the survey. An online questionnaire was implemented and the questionnaire was sent to the target users(1,306 SMEs) by e-mail. The online survey had been carried out for two months and 262 firms responded to the survey with response rate of 20.1%.

Exploring Firms' Endeavors in Adopting Circular Economy - a Case Study of a Leading Glass Manufacturer in Taiwan

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Abstract

Taiwan has been renowned for its recycling efforts and actions towards sustainability and has lately adopted the circular economy notion. However, considering the prolific approaches behind this notion, exploring its practicability through its implementation in firms at different levels is essential. This study, therefore, aims to explore a firm's innovative initiatives in implementing the circular economy concept for its sustainable production and development. To achieve this objective, we ask the following questions:

1- What are the driving forces leading to the integration of the circular economy concept in a traditional Taiwanese corporation? 2- How does the circular economy's implementation at the micro-, meso-, and macro-levels impact the corporations' business ecosystem?

The growing disparity between the demand and supply of natural resources in overall human activities is detrimental to our planet, and the take-make-dispose system of the linear economy exacerbates the already tense challenges. Considering the scarcity of raw materials, more and more efforts are being made today to shift towards a new economic model encapsulated in the notion of the circular economy that would induce sustainable production and consumption. To date, several theories have been developed around the concept of CE, yet little research embodies the highly contextual aspect of these theories. The concept of CE is argued to be the one with the most traction these days (Ellen MacArthur Foundation, 2013, Kirchherr et al., 2017). Stahel (2013) argued that the circular economy should be understood as a framework, while Gregson et al. (2015) believed that CE could be seen as an idea and ideal to face the growing restrictions of natural resources on planet earth (Homrich et al., 2018). Few studies have explained the mechanism behind the three levels of Circular Economy implementation (i.e., Micro, Meso, and Macro), vertical or horizontal. However, a clear gap between the theories and applying the circular economy concept at a firm-level needs to be investigated to build consistency.

Construction of Research Model of Tourism Function System under the Background of Smart Tourism Development

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Abstract

Smart tourism is an important trend in the development of tourism industry in the world today. However, under the background of contemporary smart tourism development, the progress of information technology and the development of the Internet have reshaped the tourism operation mode, thus decomposing and reconstructing the construction mode and analysis method of the tourism system model. This paper attempts to analyze the limitations of the traditional tourism system model by positivism, and takes the smart tourism practice of a world heritage site as a case study to establish a new tourism system research model.

The concept of tourism system was first put forward by Gunn in 1972, and the tourism functional system model was put forward according to the experience and demonstration of social tourism industry development at that time. (Gunn, 1972) That is to say, the tourism functional system model is based on a destination, and it is considered that it consists of supply and demand respectively, while tourists, transportation, attractions, services and information promotion are the basic elements in tourism planning, and these five elements interact to form an organism-tourism functional system. The significance of Gunn's tourism function model is a basic analysis of the tourism system. Gunn's tourism function model makes us realize that the relationship between supply and demand is the most basic structure of the tourism system, and the tourism industry system is composed of attractions, services, transportation and other basic elements. In the same period, Leiper put forward the tourism geographic system model in 1972 and finally revised it in 1990, which has great influence on the research of tourism system. The "Leiper" model is based on geographical space, and the tourism system is mainly described as the combination of tourist sources and tourist destinations connected by tourism channels. (Leiper, 1972) In 1998, Cooper supplemented the "Leiper" model, holding that the tourism channel is also an information channel: market information flows from the source of tourists to the destination; Information with marketing function flows from tourist destination to tourist source. Bao Jigang, a Chinese scholar, continued to improve the description of tourist channels in the "Leiper" model, holding that the characteristics and efficiency of tourist channels will influence and change the scale and direction of tourist flows.

A Study on Platforms by Age Group for Metaverse Users

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Abstract

As physical exchanges became difficult due to the era of the 4th Industrial Revolution and the COVID-19 pandemic, non-face-to-face services that can exchange similar to reality began to draw attention again. Since the 2020 COVID-19 Pandemic, the number of searches for Metaverse has increased rapidly around the world, including South Korea. They started using the Metaverse platform to act in offices, schools, or events they went to every day using the platform. Users who use the platform use a platform and conduct in-depth interviews on the platform to analyze it. In this study, platform developers need to provide customized data to users.

1. Which platform do you use by age group?
2. For what reason do they use the platform?
3. Chapter on the platform. What are the disadvantages?

The paper says that it is necessary to match the necessary services by providing Metaverse -oriented cultural contents that users want, including hands-on cultural contents such as K-pop and K-beauty, away from cultural contents. Kim, Jeong-Gwon. (2021)

The Metaverse world has the potential to improve knowledge sharing, education, and enjoyment. Changsoo, K., Sang-Gun, L., & Mincheol, K. (2010).

Designers still often create a specific user interface for every target platform they wish to support, which is time-consuming and error-prone.

Meskens, J., Vermeulen, J., Luyten, K., & Coninx, K. (2008, May).

Therefore, it is important to create an interface for a clear target.

To reach the research purpose, this study adopted interviews with users using Metaverse. First, in-depth interviews are conducted around teenagers, 20s, 30s, 40s, and 50s to list the platforms for use. Second, the representative and disadvantages of FGI are extracted through a group of design experts. As an element, the use of design in Metaverse can be presented. Users can express more freely on Metaverse platform. There are various types of platforms such as platforms for friendship, work, and using content, and they live through this platform. By grasping the scope of platforms used by age group, manufacturers can suggest customized design data to users.

Keywords: Metaverse, Platform, blockchain, Metaverse design

Positioning as a Catalyst Towards Innovations

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Abstract

Where the science meets entrepreneurship, knowledge transfer occurs. The interaction between science and business and its significance is often seen in the context of innovation [1].

Positioning can be directed towards knowledge transfer to create innovation, and thus positioning plays an important role in business development. One of the most important questions in marketing strategy is the company's positioning in market for differentiation purposes [2-6]. Creation of innovation differentiates a brand in the market. Various authors identify innovation as essential for a company and product competitiveness [7-9]. This means that ultimately innovation have positive effects not only on competitiveness [10], but on financial performance as well [11].

Within this research knowledge transfer in innovation implementation in the market is analysed with an aim to explain positioning as a catalyst towards innovation.

In order to achieve the aim of the research, literature study and systematic literature analysis were applied, in-depth expert interviews were conducted to verify the results, and to identify whether positioning as a part of knowledge transfer can be applied towards interaction between science and business for creation of innovation.

The identified business approach to use positioning as a catalyst towards innovation will be conformed within the research.

Based on the literature overview and interviews, the authors have grounded the impact of positioning on innovation implementation.

The authors have developed a model of positioning for boosting innovation in a company. The model reflects and explains the comprehensive role of positioning in the development of innovation and the interaction of the elements of creation of innovation with innovation.

Keywords: Positioning, Innovation, Knowledge transfer Product development, Commercialization.

Science, technology and innovation strategies for local government

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Abstract

This study aimed to find out what local governments should consider to establish science and technology innovation policies. Jin(2019) found that the local government's science and technology policy is regarded as a means of regional innovation in the economic and industrial field, and that information on the status of local government's patent rights has not been investigated. Šipikal, Pisár, Uramová (2019) found that the problems of local government's innovation activities include lack of financial resources and cooperation between policies, hence they recommended some innovation supports for local governments; better specialization of the regions, relatively low level of the third generation innovation policy, effectiveness of using the structural funds, a clear system of regional and national innovation support to avoid duplicity and to set up clear competences together, process and evaluation system, etc. Chen, Han, and Qu(2020) claimed that citizen innovation would be a new integrated innovation paradigm and emphasize citizens' engagement in innovation. We analyzed the performances of the 1st Busan science and technology master plan. We found that the local government is limited in terms of budge use and available resources to drive regional innovation system. Therefore, the local government need to find special sector of the region, to expand the budget for STI, and to make local platforms of open innovation. The national government needs to amend the Local Autonomy Act so that local governments can actively engage in science and technology-related affairs. The innovative actors need to participate actively in open innovation. This study has limitations in that it only analyzed the Busan case. But it is significant that this study analyzed the Busan case in that Busan established and implemented the Busan science and technology master plan before other local governments.

Keywords: Innovation policy for local government, Science and technology policy for local government, Differences between national and local government in STI policy, Decentralization STI policy

Digital Transformation and Continuous Improvement as a Catalyst for Sustainability and Open Innovation

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Abstract

Open innovation, sustainability, digitalization and digital transformation become buzzwords nowadays. The core of the idea of sustainability lays within the sustainable development framework – a development and growth to satisfy current needs without putting the lives and prosperity of future generations at risk [3]. To survive and ensure the sustainable development companies and organizations need to continuously improve their products, processes, organizations and innovate, remaining yet at the same time efficient and effective, where digitalization and digital transformation plays a crucial role. Organizational focus on continuous improvement is directly related to its openness to innovation and the ability to develop sustainably [1]. There are very few studies on the role of digital transformation and continuous improvement in fostering open innovation and sustainability and these issues remain unexplored to the great extent. The purpose of this research is to study the conceptual frameworks for digital transformation, continuous improvement, open innovation and sustainability, and investigate whether and how digital transformation and continuous improvement catalyze sustainability and open innovation. The main research question of the study is

RQ: "What is the role of digital transformation and continuous improvement in fostering open innovation and sustainability?".

To conduct the research in a structured way the authors defined two research sub-questions:

RSQ 1: What are the improvements and benefits of digital transformation for organizations?

RSQ 2: What are the driving forces for open innovation and sustainability?

Digital transformation can be defined as a disruptive process where the organizations change value creating processes by adopting digital technologies in the respond to changes in the business environment [5].

6D Model to foster design creativity for higher education

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Junic Kim

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The importance of creativity in education began in 1951 with Guilford's keynote address of the American Psychological Association, recognizing its importance not only in psychology but also in the arts, humanities, and sciences. Since then there have been many definitions of creativity, and this quality has been permeated each field. In the realm of design, there has been a great deal of research on the effects of creativity, but until now the scope of its benefits has had no clear or detailed form. In general, the perception of creative activity in design is often regarded as enhancing maturity in relation to the aesthetics of the result in the second half of the design.

However, real design activity is to break down the boundaries between various fields in order to solve problems and implement innovative ideas based on the creative spirit so as to improve life. David Cackle, founder of IDAHO, said, "Design is...the process of solving problems rather than making shapes beautiful when they are finished." Especially, the role of creativity in the design process has emphasized that creativity is divided into deciding what to create and the steps of divergent thinking about the ideas necessary to make choices, as well as convergent thinking, is the stage of decision making that comes from ideas (Brown, 2009).

These thinking systems are always generated together with continuity and are present in the process as repetitive occurrences. In this process, ideas spread through activities that utilize various inspirations through universal experience and intelligence. When it comes to design as an ability, certain factors develop various skills within design activities. In this sense, design is a trained to sensitively perceive needs that consumers do not notice, and to make them into concrete products, services, and behavioral systems within the context of new technologies and specific cultures. Therefore, design is not just simply creative, but also a crucial progression toward understanding the specific factors of the various developmental points that appear in the process in regards to a new type of creativity.

Finding opportunities to improve the COVID 19 self quarantine policy of S.Korea based on inbound foreign students' experience

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Taesun Kim

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Abstract

In the era of the (COVID-19) epidemic, self-isolation is one of the most common and effective means to control the epidemic. The specific implementation of the plan will have an impact on the development of the epidemic, and the self-isolation policy is getting more and more attention. This study uses a qualitative method based on design thinking to analyze the experience of international students in self-isolation in South Korea during the epidemic, and to improve the isolation policy in the era of the epidemic. And to deal with the possible recurrence of the epidemic in the future, find ways to optimize the rules.

1. What is the precise process and sequence of self-isolation after entry at this stage?
2. What are the loopholes in the self-isolation policy?
3. What are the possible directions for improving the self-isolation policy?

The South Korean government has implemented special entry procedures for passengers from all over the world. All incoming passengers (South Korean and foreign citizens) must follow the special entry procedures to undergo temperature checks and fill out health questionnaires and special quarantine declarations. After verifying your contact information and residential address in South Korea, you also need to install the "Self-Isolation Security App" or "Self-Diagnosis App" on your mobile phone to monitor whether there are symptoms of COVID-19 during your stay in Korea. All those who enter Korea Passengers (including Koreans and foreigners) must be tested for fever or respiratory symptoms during entry screening. There are corresponding measures according to different test results. (Korea Centers for Disease Control and Prevention) According to international students' views and experiences on asymptomatic testing and self-isolation during the COVID-19 epidemic. Conduct purposeful sampling interviews, with experience representing different genders, ages, living environment (in/out of school) and nucleic acid testing/self-isolation. (Holly blake, 2021) And according to the latest quarantine policy issued by the South Korean government, the quarantine policy after entry will be changed after receiving vaccination before entering the country. (Korea Centers for Disease Control and Prevention).

New Possibilities of knowledge Innovation and human resource development Generated by Self-Reflection at COVID-19

Naomi Kinoshita
Recruit Co., Ltd. Japan
Yusuke Tanaka
JTEKT CORPORATION, Japan
Yuri Sadoi
Meijo university, Japan

Abstract

In the current international environment of economic globalization and intensifying competition, human resource development and innovation have become key factors in promoting the advancement of industry and technology. Due to decades of economic stagnation, Japan has lagged behind in terms of both economic strength and innovation capability. Under these circumstances, there is a need to accelerate the creation of innovative human resources and the creation of an innovative society. To this end, we are focusing on the effects of human resource development through intrinsic and extrinsic strategies based on self-determination theory.

The research question of this paper is if intrinsic motivation will create positive results to innovative individuals and organization. What is the possibility of open innovation based on self-reflection as a part of idea generation?

By studying literature of previous studies and using the case of university students in Japan, this paper try to create a model of the intrinsic motivation and open innovation among individuals and groups.

Self-determination theory (SDT) is a broad framework for understanding factors that facilitate or undermine intrinsic motivation, autonomous extrinsic motivation, and psychological wellness, all issues of direct relevance to educational settings. (Deci & Rian 1985)

Open innovation by Chesbrough (2003) is defined as "the organic combination of ideas from inside and outside a company to create value" and "the use of knowledge inflows and outflows to accelerate internal innovation and expand the external use of innovation for one's own purposes. It is defined as "the use of knowledge inflows and outflows to accelerate innovation internally and to expand the use of innovation externally for one's own purposes.

SOI & Swansea University 2022 Conference

July 6(Wed.) ~ 9(Sat.), Conference Days, 2022
Swansea University
(Faraday Building, Singleton Park Campus), Wales, UK
& Online(Zoom)

July 09 (Saturday)

July 09 (Saturday)

Venue: Faraday Lecture Theatre, Faraday Building, Swansea University, Wales, UK, 09:00~10:30

Poster Session

Chairs: DaeCheol Kim(Hanyang University, Korea), Youeil KIM (KISTI, Korea) & Sangwoo KIM(KISTI, Korea)

- Paper 1: "Protected nature, participation, and open innovation with tacit knowledge: The way to comedy of commons of new business model" by **JinHyo Joseph Yun*, Xiaofei Zhao, KyungBae Park, Valentina Della Corte, Giovanna Del Gaudio**
- Paper 2: "Mapping the evolution of digital transformation: A bibliometric review" by **Qingwei Zhang, Maoxi Yang, Xiangmeng Zhang, Guangqi Gao*, Zhongwei Hou**
- Paper 3: "Modeling and Simulation of Open Innovation Micro Dynamics in Cost, Benefit, and Time-Lag" by **JinHyo Joseph Yun, Zhao, Xiaofei, Jeong, Eui Seob, Ahn, HeungJu, Park, KyungBae**
- Paper 4: "Research on industrial enterprise digitization evaluation system based on systems Engineering" by **Yue Chang, Jun Zhang**
- Paper 5: "The Evolutionary Trend and Network Characteristics of Global Hubs of STI-- Based on Big Data Analysis and Mining Technology" by **Xu Bai, Peng He, Di Cao, Jinxi Wu***
- Paper 6: "Open Standards Processes and Agile Governance in Evolution of OSS Platforms: An Empirical Study on Python Community" by **Tao LI & Ma Lei**
- Paper 7: "Digital empowerment in rural revitalisation" by **Yun Zhao, Huijie Yuan & Ting Yang**
- Paper 8: "Which Factor Is More Important For M&A Performance of Biopharmaceutical Firms?: Capability and Relationship-Related Factors" by **Eundgo Kim, Jimin Choi, Namjun Cha*, Kwangsoo Shin**
- Paper 9: "The Optimal R&D configuration strategy under uncertainty: Comparison between innovative and non-innovative firms" by **Eungdo Kim***
- Paper 10: "Digital transformation in the R&D planning and innovation policy: Comparison between China and European Union" by **Ben Zhang**
- Paper 11: "Impacts of COVID-19 on WVC incidents in the Expressways of South Korea" by **Hyomin Park, SangDon Lee**
- Paper 12: "The Finance Public Service System with Digital Transformation for International Education in the Post-COVID-19 Era" by **HONG Yun, Yu Zhou***
- Paper 13: "Closing the Global Opportunity Gap in Open Innovation based STEM Education for Displaced Youth: A Curriculum for Ugandan Children" by **Minseo Jung & Steve Goldblatt**

- Paper 14: "Analysis of Financial Value of Public Company with e-Commerce Platforms: The case of Affirm Holdings" by **Minseo Jung, Omri Even-Tov**
- Paper 15: "Determining the Priorities of Potential Markets fro Brain Imaging Technigues: In Cognitive Neurscience" by **Yuhua Huang & Jonathan C. Ho**
- Paper 16: "The relationship and knowledge sharing and technology readiness in regional innovation system" by **Junghee Han**

July 09 (Saturday)

Venue: Faraday Room B, Faraday Building, Swansea University, Wales, UK, 09:00~10:30

Poster Session

Chairs: Dilshad Jahan (Swansea University, UK) & Choong-Sik Chung (KyungSung University, Korea)

- Paper 1: "How can medical device companies catach-up by open innovation strategy? Evidence frim Korea" by **Dongwoo Kim, Kwangsoo Shin**
- Paper 2: "Study on the open innovation signal in financial statement of firms" by **JinHyo Joseph Yun*, BongHwan Kim*, Xiaofei Zhao, EuiSeob Jeong, Joonggi Ahn**
- Paper 3: "Configuration path of industrial digital transformation from the perspective of regional innovation ecosystem" by **Xinwei Ye, Lei Ma & Kaitong Liang**
- Paper 4: "Innovation of International Cooperation Mechanism and Governance System for High-Quality Development of the Belt and Road Initiative" by **Si QI, Li Fen REN**
- Paper 5: "Study on the Renovation of Smart Community Service Facilities for the Aged in Mountainous City" by **Honggang TANG, Shuwen XIANG, Wenyao XIAO**
- Paper 6: "How does Adolescents' Usage of Social Media Affect Their Dietary Satisfaction?" by **Harry Jeong; Kwangsoo Shin***
- Paper 7: "Exploring Diverse Types of Residential Treatment Centers for COVDI-19 in South Korea" by **Jaeyong Lee & Kwangho Jung**
- Paper 8: "Could Riga Become a Smart Tourism Destination without Being Sustainable in the Era of Digital Transformation?" by **LIU Yuan Yuan , LACE Natalja, Ling WU*, CHEN Lu Lu**
- Paper 9: "Research on Builder difference and Development Strategy of Industrial Parks from the Perspective of Innovation Ecosystem" by **Chaonan Yi, Lei Ma***
- Paper 10: "Improving an online shopping platform design based on the user experience of the elderly" by **Zhou Chao, Kim Taesun**
- Paper 11: "Two-pronged Approach: Research on the Influence of the Interaction between Green

Contracting and CSR Management Committee on Green Innovation" by **Li Weian, Zhou Ning**

- Paper 12: "A Study on the Role of Female Workforce in Korea's ICT Industry" by **Dae Soo, Choi**
- Paper 13: "Asymmetries and Macroeconomic Impact of Oil Price Transmission in Oil-Exporting Emerging Economies" by **Emmanuel Agboola, Rosen Chowdhury, Bo Yang**
- Paper 14: "Does Energy Poverty Hinder Reduction of Carbon Emissions? The Case of China" by **Jian Yang, Xin Liu***
- Paper 15: "Relational view and open innovation: implications for theory and practice" by **Valentina Della Corte, Giovanna Del Gaudio, Fabiana Sepe, Enrico Di Taranto**

July 09 (Saturday)

Venue: Faraday Room C, Faraday Building, Swansea University, Wales, UK, 09:00~10:30

Poster Session

Chairs: Bo Yang(Swansea University, UK) & Euiseob Jeong(KISTI, Korea)

- Paper 1: "A Case Study on the Effect of Knowledge Services on Business Performance according to the Firm Technology Level: Evidence from South Korea" by **Minji Kim, Jinwoo Sim, Hun Park***
- Paper 2: "An Introduction to R&D Project Valuation Model and System" by **Hun Park, Hyunwoo Park, Jongtaik Lee**
- Paper 3: "Digital innovation path of traditional manufacturing industry—A case study from ANSTEEL" by **Zihao Che**
- Paper 4: "An evolutionary game research on value co-creation behaviour of digital patent platform" by **Xiaojing Huang, Lei Ma, Rao Li & Zheng Liu**
- Paper 5: "The Perspective of Smart Education for Foreign Language Teaching and Management in Tertiary Education" by **SHEN Lin, Jing HUANG, Yuan HUANG, ZHOU Jie***
- Paper 6: "Digital transformation of science and technology development: A systematic literature review and future research agenda" by **Ben Zhang**
- Paper 7: "Patent lawsuit risk early-warning system based on patent mining: A case of Artificial Intelligence" by **Chenxu Ming, Ben Zhang***
- Paper 8: "Predicting insolvent companies and analyzing factors influencing insolvency using auto-encoder" by **Chan-Ho Lee, Ji-Hye Choi, Min-Seung Kim, Yong-Ju Jang, Sun-Hong Lee, Jeong-Hee Lee, Tae-Eung Sung***
- Paper 9: "Job Satisfaction and Job Autonomy in Korean Science and Technology Research Institutions" by **Jineui Hahm, Kwangho Jung**

- Paper 10: "Business Model Innovation for Riga as a Sustainable Smart Tourism Destination after the COVID-19 Pandemic" by **LIU Yuan Yuan, LACE Natalja, Ling WU*, CHEN Lu Lu**
- Paper 11: "Regional Pollution and Environmental Investment of SOEs in China: Political rent-seeking or Stakeholder Maintenance?" by **Weian Li, Wendi Hou**
- Paper 12: "Prediction of S hotel Occupancy based on Web search Data" by **MENG Yun, LIU Yuan Yuan**
- Paper 13: "Open Innovation Dynamics and Evolution in the Smart Payment Industry - comparative analysis among Daegu, Cardiff, and Nanjing" by **JinHyo Joseph Yun(Corr.), Xiaofei Zhao, Lei Ma, Zheng Liu, Bo Yang**
- Paper 14: "Prediction of community-level seasonal changes based on detailed climate change scenarios in Korea" by **Sang-Don Lee**
- Paper 15: "Rediscovering patriarchal leadership: Focusing on Chinese IT companies" by **Kexiang Zhao and Junic Kim***

July 09 (Saturday)

Venue: Faraday Room D, Faraday Building, Swansea University, Wales, UK, 09:00~10:30

Poster Session

Chairs: Staffen James(Southwales University, UK) & KwangHo Jung(Seoul National University, Korea)

- Paper 1: "Does digital finance empower carbon emission reduction? Evidence from Chinese cities" by **Hui Xu, Xin Liu***
- Paper 2: "Effects of Chinese carbon reduction policies on carbon emission-Based on text mining" by **YANG Da, DING Chuan***
- Paper 3: "Analysis of regional innovation practices in Japan: the role of foreign engineers" by **Yuri Sadoi**
- Paper 4: "Geo-economic factors of regional innovation: the case of Taiwan and Japan" **by Yuri Sadoi, Lih Ren Li, Kuanju Lin & Cheng Wu**
- Paper 5: "Servitization of Service providers with Open Innovation Consideration" by **Chulok Ahn, ByungYun Bae, Sungyong Choi***
- Paper 6: "The Effect of R&D Management Competency on Researchers' Satisfaction: Based on the Characteristics of Institutes" by **Byung Yong Hwang*, Narae Lee, Sung Hun Park, Mee Hyang Chang**

- Paper 7: "An empirical study on Z-generation's consuming motives and attitude towards electric vehicles in China" by **ZHOU Tao, CHENG Rui, BAI Yu, ZHONG Yuan, CHEN Ya Mei, YUAN Zhong Yi, DENG Ying Xue, YUAN Mao Xiang, LIU Yuan Yuan***
- Paper 8: "Predicting Tourist Numbers by Applying Big Data? An Empirical Research based on 2SLS" by **LIU Yuan Yuan, Fang-Mei Tseng*, Yi-Heng Tseng**
- Paper 9: "The effect of green innovation on financial performance through double-mediation of innovation and non-financial performance" by **Yuhan Liu, Choo Yeon Kim, Jae Wook Yoo***
- Paper 10: "Rediscovering patriarchal leadership: Focusing on Chinese IT companies" by **Kexiang Zhao and Junic Kim***
- Paper 11: "Influence of board power of non-actual controller on green governance of state-owned listed companies" by **Weian Li, Minghui Yi**
- Paper 12: "Factors affecting successful clinical trial" by **Eungdo Kim, Sungjin Park, Jaehoon Yang*, Kwangsoo Shin**
- Paper 13: "Quadruple Compass of Business Model Design, and Innovation: Design Thinking for Creative Open Innovation, and Open Business Model" by **Jinhyo Joseph Yun*, Juhyun Eune*, Xiaofei Zhao**
- Paper 14: "Open innovation and artificial intelligence for senior citizens" by **Valentina Della Corte, Giovanna Del Gaudio, Enrico Di Taranto**
- Paper 15: "Smartness in tourism destinations. A literature review" by **Valentina Della Corte, Giovanna Del Gaudio, Fabiana Sepe, Enrico Di Taranto**

Protected nature, participation, and open innovation with tacit knowledge
The way to comedy of commons of new business model

JinHyo Joseph Yun
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Xiaofei Zhao
(DGIST and Open Innovation Academy)
KyungBae Park
(Sangji University.)
Valentina Della Corte & Giovanna Del Gaudio
(Naples Federico 2 university)

Abstract

We want to know the success conditions and factors of the classical common good from different capitalist economy and we wish to apply these to diverse platforms which are appearing as new common goods. Our research question is as follows; Are there any common success factors which can be applied to produce and use common goods in different economy conditions? With the goal of finding out the grounded theory of the common good, the study used basically interview method with semi-structured questionnaire, and participatory observation, and additionally literature review, which were from case studies, and comparative study of 20 Korean commons, and 20 Italy commons. According to this study, first, according to common good cases at Jeju in south Korea, coupling effects of several public policies could motivate common good privatization. Second, there are common good empty area which is consist of high participation with democratization and low common condition. High participation with democratization can escape the privatization, and increase of new open business model of common goods. Third, active open innovation with high participation of democratization, and expanding new business model from tacit knowledge on the common good could be the activating engine of regional innovation system.

Keywords: common good, open innovation, business model, tacit knowledge, regional innovation system, grounded theory

Mapping the evolution of digital transformation: A bibliometric review

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Acknowledgments: The declarations of all the authors' interests are none. The corresponding author should be Guangqi Gao. This research is funded by the Projects of Social Science Foundation of Hebei Province (number: HB21TY015).

Modeling and Simulation of Open Innovation Micro Dynamics in Cost, Benefit, and Time-Lag

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Abstract

This study do modeling and simulation the difference in the growing patterns of a firm according to open innovation micro dynamics. First, this study built 8 conceptual models of micro open innovation dynamics under inter-rationality which is the bounded rationality in open innovation dynamics, and found sectors or business model orientations that meet 8 types from diverse case studies on open innovation dynamics. Second, this study fasciated the 8 types through mathematical modeling in 3 dimensions such as cost, benefit, and time lag, and showed the diversties of open innovation dynamics fullly in a period conceptally which can be usefully used as a manual. Third, this study simulates the conceptual and mathematical models to find out long-term effects of them, and the rational location of policy leverages. Finally, eight model categories of micro open innovation dynamics were validated from the analysis of Korea and US patents of 9 industries.

Keywords: Micro open innovation dynamics; Inter-Rationality, Cost; Benefit; Time-lag

Research on industrial enterprise digitization evaluation system based on systems Engineering

YueChang

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JunZhang

(Prof. of Nanjing University of Science and Technology in China)

Abstract

Due to the rapid development of science and technology, the physical world and the digital world are gradually merged to form an all-inclusive Internet of things. This means that the way industry is produced in the future will become highly flexible and the ability to customize products and services will increase. From mass production to mass customization production, from centralized production to network collaborative production. But how to realize the digital transformation of industrial enterprises, has always been about 4.0 system of industry report or related research, most of them tend to qualitative analysis and discussion, but for the real enterprise in a market, how to realize the digitization, only see the relevant qualitative analysis is sometimes difficult to laid hands on him. For each industrial production-oriented enterprises, the problems in the digital transformation is different, so to the actual situation of the complex, this paper tries to construct an evaluation system based on system dynamics, to help enterprise management and industrial production-oriented enterprise stakeholders to clarify the specific location in the digital transformation, It also provides a framework to describe the digitization process of industrial production enterprises.

4.0 research association, said the German industry under the existing policy framework, delimit rules of factors of production, technology, and even industrial integration connected, in the end, is inseparable from the parties to the industrial process of 4.0 set by technical standards and comply with the planning framework, all parties must maintain a consistent pace for industrial digital process adjustment. "The world's first standardized industry 4.0 planning route is an important step in the industry 4.0 process," the association said. "It is the relevant standards and uniform specifications that all parties involved in the construction of Industry 4.0 must abide by." The German Standardization Institute calculates that standards have accounted for 0.9% of Germany's 3.3% annual GDP growth over the past few years, second only to capital input.

The Evolutionary Trend and Network Characteristics of Global Hubs of STI-- Based on Big Data Analysis and Mining Technology

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Abstract

To quantitatively measure the influence and status of global hubs of STI, this paper analyzed evolutionary trend and network characteristics of global hubs of STI.

Cities are important spatial carriers of regional economic and social activities. According to the history of regional development, Porter (1990) of Harvard University divided regional economic development into four stages: factor promotion, investment promotion, innovation promotion and wealth promotion. The development of cities also follows these stages: the development of early cities mainly relies on natural resource endowment and original capital accumulation. With the continuous progress of human society and the acceleration of urbanization, the marginal benefit of traditional natural resources and capital and other factors for urban development becomes lower and lower. The urban development mode gradually changes from increasing factor input to improving total factor productivity, followed by the increasing contribution of innovation to urban economic development. Current global cities are in the process of transforming from investment-driven cities to innovation-driven cities, therefore, many countries are exploring the construction of innovative cities with global influence.

Du (2016) firstly explained the connotation of "global hubs of STI" in Chinese. It is believed that the essence of global hubs of STI refer to the intensive global STI resources, the concentration of STI activities, the strength of science and technology innovation, and the wide range of scientific and technological achievements. A city or region that plays a significant value-added function in the global value network and occupies a leading and dominant position. Ma et al. (2019) believes that the global hubs of STI are one of the few high-level science and technology innovation cities in the world and a pivotal node of the global science network.

Keywords: global hubs of STI; social network analysis; science network characteristics; influence

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Open Standards Processes and Agile Governance in Evolution of OSS Platforms: An Empirical Study on Python Community

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Nanjing University of Science and Technology
Lei MA
Nanjing University of Science and Technology

Abstract

Open-Source community is a platform-based organization for knowledge innovation and collaboration, and the Open-Source Software (OSS) project is the center of the internal activities of the platform. In the post-COVID-19 era, open-source business models are constantly emerging. Implementing standard processes in OSS can improve the efficiency of OSS innovation collaboration. Recent studies found open-source contributors invest much more time and labor in open-source productivity tool (OSPT) projects, such as open-source programming languages, than in open-source application softwares (OSAPPS). In addition to asserting OSPT is upstream of OSAPPS, or OSAPPS' OSS license leads to selection bias of open-source contributors, the governance mechanism for community transactions that OSPT attracts and motivates developers to contribute and the evolution of Open-Source platform remain unclear.

The primary goal is to construct the mechanism for minimal agile governance (MAG) in OSS community and to explain its role. Further, it is accomplished with observing routine transactions and open standard procedure of OSS community.

The study selects Python community as the field research object, firstly investigates the milestone PEPs(Python Enhancement Proposals), abstracts its embedded governance rules into a model, and secondly performs data mining on the Python community mailing list and issue tracker, extracts feature values and performs quantitative analysis.

We portray the mechanisms of MAG in Python community with characterizing of open standardized process for OSS.

The study found while the mailing lists serve as tone at the top of OSS platform, issue tracker list is more effective for OSS collaboration and MAG implementation. MAG is enforced at an atomic level on the issue tracker, and Python community and its contributors benefit from the open standards process.

Digital empowerment in rural revitalization

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Abstract

There is a huge digital enabling space in the development of agricultural rural modernization in China, and digital technology will become an effective engine and sustainable power to realize rural revitalization. Digital empowerment promotes rural revitalization, which is based on the hardware of a new generation of digital infrastructure such as the Internet of things, big data, artificial intelligence, blockchain and so on, with digitized knowledge and information as key factors of production, with digital technology innovation as the core driving force and modern Internet information platform as the important carrier, through the deep integration of digital technology and agricultural and rural development, we will promote the digital transformation of rural industries, ecology, culture, governance and services, and promote the prosperity of rural industries, ecological livability, rural civilization, effective governance and well-off life. However, at present, China is faced with such problems as weak infrastructure, low application level, lack of professional talents and insufficient policy supply, etc. , in the future, it is necessary to further strengthen the construction of rural informatization facilities, improve farmers' information literacy and skills, promote digital professionals to go to the countryside, and strengthen the formulation and supporting of policies, thus more fully releases the digital technology the enablement function.

Keywords : Digital technology; digital empowerment; rural revitalization; digital village

Swansea University Prifysgol Abertawe
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Which Factor Is More Important For M&A Performance of Biopharmaceutical Firms?: Capability and Relationship-Related Factors

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Abstract

These days, mergers and acquisitions between biopharma firms have become one of pivotal strategic tools that enables the enterprises to survive in the competitive market. In this study, we figure out the source of the innovation performance of M&A from the resource-based perspective and dyadic perspective. This study compares the impact of two kinds of factors which are capability-related factors and relationship-related factors. In this study, a negative binomial regression was conducted using patent data to measure the outcome of a merger transaction of a biotech drug company.

Biopharmaceutical industry is one of the leading industries where scientific R&Ds directly affect to the final product. Moreover, the industry can be deemed as a sum of individual sciences because all the phases of a pharmaceutical product development – from the exploration and discovery of candidate substances, research and development of products, and manufacturing stages – require various expertise such as life science, chemistry, pharmacy, medicine, physiology and microbiology. New knowledge must be introduced and is a pre-requisite to make a progress for the next step (Arora, A.; Gambardella 1994). At the same time, the pharmaceutical industry is strongly regulated by government agencies. This is because the uncovered risks and uncertainties, and the safety and efficacy of the new drug are directly related to the patient's life. To address these risks and uncertainties, and to demonstrate safety and efficacy, firms are forced to invest more money.

Due to difficulties and low success rates, thanks to the astronomical benefits promised by successful commercialization through this processes, large pharmaceutical companies are interested in finding new drug candidates with high potential for success.

The Optimal R&D configuration strategy under uncertainty: Comparison between innovative and non-innovative firms

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Abstract

Over the years, special attention has been devoted to the study of uncertainty and its effects on the strategic decisions, entrepreneurial actions, and performance of organizations (Teece et al., 2016; Vasconcelos Gomes et al., 2018). To confront unpredictable changes, organizations engage in diverse strategies to secure market positions or competitiveness by seeking innovation (Verdu et al., 2012). Recent studies have focused on R&D investment under uncertainty, and this stream of research has focused on the quantitative change in investment based on real options or strategic real options theory (Dixit et al., 1994; Malik, 2011; Noe & Parker, 2005). However, not only the quantitative aspect of investment, but also the way of investment is crucial in responding to uncertainty.

The R&D configuration indicates how firms open their R&D borders to tap into external knowledge or rely on internal R&D from diverse partners. Although leveraging external knowledge or resources is a critical factor for achieving the capability to confront uncertainty, few studies have examined this. In addition, it is crucial to find a balance between internal and external R&D during the innovation process (Berchicci, 2013). Thus, this study bridges this gap and empirically analyzes the effect of uncertainties on the configuration of R&D investment.

Uncertainties stem from various sources, and their effects differ according to their type (Beckman et al., 2004). Prior literature provides diverse and multidimensional proxies for empirical studies (Vecchiato, 2012; Wang et al., 2018). These various measurement methods can largely be divided into two categories: perceived environmental uncertainty (PEU), which is a subjective measure, and the indicators reflecting objective evaluation of uncertainty using industry, market, or firm-specific data. Previous studies emphasizing perception have suggested that subjective perceptions of uncertainty are more critical than objective situations in shaping decisions by organizations when they create and evaluate opportunities (Freel, 2005; Galtung, 1984; Miller, 1988). Although these studies clarified the effects of diverse types of uncertainties, their effects on R&D activity decisions and innovation performance have not been sufficiently investigated. In this context, this study measures PEUs in three categories (PEU-policy, PEU-market, PEU-internal) and then investigates their effects on a firm's investment decisions and innovation performance.

Digital transformation in the R&D planning and innovation policy: Comparison between China and European Union

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Abstract

At present, digital transformation is a hot topic in all fields of society, which is of great significance to industrial organization upgrading and regional economic development. However, the primary problem at present is how to formulate effective innovation plans and policies to implement the process of digital transformation. Therefore, in order to put forward a policy roadmap framework for digital transformation, this paper compares China and the EU, and summarizes the key points of digital transformation through case analysis.

Many studies (Inkinen et al., 2019; Kim et al., 2019; Mubarak et al., 2020) analyzed digital transformation from different perspectives or based on different theoretical frameworks, especially the innovation process around platform, a new type of organization (Yun et al., 2017; Omar et al., 2017). Studies related to open innovation theory provide some theoretical reference for innovation policy making (Choi et al., 2018). Unfortunately, due to the rapid development of digital technology, the relevance of existing research to the latest trends in digital transformation needs to be re-evaluated. In addition, few studies have been able to explain the basic elements of digital transformation in a comprehensive way.

Design/ Methodology/ Approach: The method adopted in this study is case comparative study based on grounded theory. Case analysis units are set up based on existing theories such as open innovation, digital economy, platform organization, etc., to encode digital economy-related policies of China and EU respectively, and carry out qualitative analysis on policy contents.

(Expected) Findings/Results: The expected conclusions of this paper are mainly reflected in the following aspects: first, regional differences in digital transformation policies are found; The second is to discover the connectivity between regional digitization processes; The third is to find the complementarity between regional digital systems; The fourth is to discover the competitiveness of the regional digital transformation market.

First, limited by the length of the study, this study mainly conducted a comparative study between China and the EU, but failed to analyze other international economies.

Keywords: Digitalization policy; Digital technology; Platform organization; Emerging transformation; Open innovation framework

Impacts of COVID-19 on WVC incidents in the Expressways of South Korea

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Abstract

In Korea, the first COVID-19 case was confirmed in January 2020, a large-scale cluster infection occurred in February, and quarantine was implemented nationwide from March. The COVID-19 has created a social phenomenon in which many company employees work from home and refrain from group events or gatherings, which has led to a sharp drop in demand for public transportation and reduced passenger traffic. As COVID-19 decreases human activity, changes have occurred in ecosystems directly affected by human activity, such as the atmosphere, soil, streams, and wildlife (Lian et al., 2020; Cheval et al., 2020; Bates et al., 2020; Corlett et al., 2020; Rutz et al., 2020). In particular, expressways have a significant impact on the ecosystems around them, and traffic volume has decreased due to a decrease in the floating population. Construction of roads disrupts ecosystems due to habitat destruction, fragmentation of wildlife habitat by road development is a major threat to biodiversity. Habitat destruction, traffic accidents are the principal threats to be addressed for their conservation (Izawa et al., 2009). Therefore, this study aims to analyze the effects of COVID-19 on expressway traffic and WVC(wildlife-vehicle collisions) in Korea to establish the relationship between human activity and WVC.

Using WVC data generated on expressway in Korea, expressways with high WVC occurrence per 1km per year were selected. And the WVC hotspot section of the expressway was derived using the WVC data of the selected expressway. And the R program was used to forecast the traffic volume and WVC during the social quarantine period of COVID-19 in the WVC hotspot section.

It is expected to evaluate the predictive ability of the model and quantitatively evaluate the impact of traffic volume on the occurrence of WVC by comparing and analyzing the predicted results and measured data for traffic volume and WVC during the COVID-19 social quarantine period.

Keywords: waterdeer; Traffic volume; WVC forecast; hotspot; fragmentation

The Finance Public Service System with Digital Transformation for International Education in the Post-COVID-19 Era

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Abstract

Based on the case analysis of China Construction Bank's service principle and the effects of measures taken to serve overseas students and international students studying in China during the outbreak of the pandemic, the paper is aimed to explore how to develop a finance public service system for international education in post-pandemic era.

Based on the data collected during the pandemic in 2020 and 2021, the study used SWOT Model to make the analysis of Strengths, Weakness, opportunities and threats faced by Financial Institutions after the outbreak of Covid-19 in the field of international education.

Although the pandemic brings challenges, it has not stopped the progress of education and economy. In the post-pandemic era, international education and commercial banks are expected to make adaptive transformation to achieve deeper inclusiveness and digitalization.

During the COVID-19, relying on its business ecosystem, Guizhou branch of China Construction Bank (CCB) designed and launched a platform named "Smart Overseas Study" to provide comprehensive services for relevant consumers, giving full play to the advantages of its industry guidelines and the financial technology. There should be a further comparison between CCB and other Financial Institutions.

Due to the global outbreak of the Covid-19 epidemic, the existing orders of the world's economy, politics, education and service industry have been impacted and influenced severely, and most traditional industries have been forced to turn to online marketing. With technological advances, the economic and social form and operation mode have undergone revolutionary changes. In the post-pandemic era, international education and commercial banks are expected to make adaptive transformation to achieve deeper inclusiveness and digitalization. In the era of digital economy characterized by "intelligent interconnection for everything", the digital transformation of the world economy is bound to be an irresistible trend.

Keywords: post-pandemic era, inclusiveness, digitalization, public service system, international education

Closing the Global Opportunity Gap in Open Innovation based STEM Education for Displaced Youth: A Curriculum for Ugandan Children*

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(The University of Chicago)
Steve Goldblatt**
(Illinois Math and Science Academy)

Abstract

Both Education for All (EFA) and Millennium Development Goals (MDG) agendas emphasize increasing equality of global educational opportunities and bridging the accessibility gap. Approximately 25% of refugees are deprived of elementary school educational opportunities, and about 65% do not have access to secondary school (Dryden-Peterson, 2010). Studies of Syrian refugees show that the lack of partnership and digital technology in higher education restricts their educational opportunities (Pherali and Abu Mohli, 2021). The recent STEM education reform for IMSA proposes a community-oriented open innovation STEM model that combines community and open innovation (Lee and Jung, 2021). The gap of global educational opportunities can be primarily solved through partnership formation, community-oriented model introduction, and an online education curriculum. This paper explains how IMSA's online education of Ugandan children can provide a curriculum that combines open innovation and STEM to displaced youth worldwide. This paper aims to analyze the field experience of how IMSA's long-standing STEM education experience helps develop this curriculum. It also explores how the IMSA Youth Open Innovation Club created networks with ASA Social Fund and UBpay to raise the necessary resources for Ugandan children. This research case demonstrates that IMSA's Uganda Online Global Education Case is an open innovation that combines STEM knowledge resources inside IMSA and cooperation and support from for-profit and non-profit organizations outside IMSA. Furthermore, this research provides in-depth stories about the obstacles in delivering open innovation STEM education for globally displaced youth.

Keywords: Global education inequality, equity of educational opportunity, displaced youth, STEM, open innovation

Swansea University Prifysgol Abertawe
Society of Open Innovation Technology, Market & Complexity
DGIST

Analysis of Financial Value of Public Company with e-Commerce Platforms: The case of Affirm Holdings*

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The University of Chicago
Omri Even-Tov
University of California at Berkeley, Haas Business School

Abstract

This case study conducts the financial valuation of Affirm Holdings, a publicly-traded financial technology company founded in 2012 through estimating its target price. Specifically, this case study attempted to perform the financial analysis of the Affirm company in the following three aspects. First, discounted cash flow approximates its expected future cash flows. Second, the implied price is calculated with the discounted cash flow. Third, the target price is compared with the company's current stock price to determine whether the company is overvalued or undervalued. Headquartered in San Francisco, Affirm has a unique business model, "Buy Now Pay Later," targeting the millennials and Generation Z for market strategies. Aiming to compete against the credit card industries, the company promotes transparency, trust, and flexibility to attract its customers. The company generated more revenues than expected with growing online customers, given the initial public offering value at 98%. Yet, its stock price has been declining since it has first publicly traded its shares. This study investigates Affirm's financial status with the discounted cash flow methods. With the discounted cash flow analysis, the current company's target price is higher than its current stock price; Affirm is undervalued, and investors should buy its stock. The large and growing active customer, consisting of the millennials and Generation Z, base the Affirm with great potential. The market opportunities for Affirm's BNPL platform are already tremendous and will continue to grow. As the next generation consumers increasingly shift to online markets, Affirm can show remarkable growth. This paper provides a case study of how relevant financial value analysis links to an open innovation strategy for startups. Scientific analysis of companies' financial values contributes to identifying risks inherent in open innovation strategies such as mergers and acquisitions among emerging startups. Specifically, the uncertain future value of startups is a real obstacle to open innovation that accurate analysis of financial value can essentially remove. The financial analysis of this paper reveals the hidden underlying mechanism between such open innovation and corporate financial value.

Keywords: Affirm, fintech company, financial valuation, discounted cash flow, open innovation

Determining the Priorities of Potential Markets for Brain Imaging Technigues In Cognitive Neuroscience

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ABSTRACT

Technological startups develops an innovative core technology that is applicable to several products for markets of dissimilar characteristics. It is very important identification of the market with most possibility to succeed in the fuzzy front-end concept stage of the new product development process. This research develops a decision model that facilitates technological startups to determine the most feasible market under the uncertainties of product and market. An analytic hierarchy process, AHP is applied to develop the decision model. Based on existing literature, the market and technology evaluation criteria are extracted and incorporated in the model. Both industrial external environment and corporate internal endowment are the major areas that influence the successfulness of a technological startup. Under industry external environment area, three factors, namely market condition, industry condition, and government policy condition are identified as influential to entrepreneurial success. Under corporate internal condition area, management resource, technology resource, and financial resource are recognized as the evaluation criteria.

Using experts from the field, multiple potential markets are identified as alternatives to be selected. Three markets, medical, educational, and entertainment are identified as the alternatives. The AHP model is then applied to an Electroencephalography Company which owns core technologies but the product and its associated market yet to be determined.

Keywords: Technological Startups; Fuzzy Front End; Priorities of Potential Markets; Brain Imaging Technigues; Cognitive Neuroscience ; AHP

The relationship and knowledge sharing and technology readiness in regional innovation system

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Abstract

In regional innovation system, technology transfer and commercialization by using the research outputs of universities and public research institute with government-funded R&D on the project-level has been paid attention. In particular, we examine the characteristics of technology transfer of universities and public research organizations by technological field. In order for that, we utilize knowledge production function regression model. The big data set collected by National Science and Technology Information Service is used and we conduct four hypotheses. Based on findings, applied types of R&D is positively relevant to technology transfer and commercialization (TTC). Interestingly, with respect to technology life cycle, early stages of technology life cycle are more effective TTC than mature stage. In case of R&D collaboration research types, foreign partnership has a positive impact on TTC. Findings highlight practical policy regarding TTC that when choosing the research projects supported by government, the possibility of knowledge sharing in terms of open innovation should be considered at first.

Keywords: regional innovation systems; government-funded R&D; technology transfer and commercialization; commercialization of knowledge; characteristics of technology transfer by technological field

How can medical device companies catach-up by open innovation strategy? Evidence frim Korea

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The Catholic University of Korea, Korea)

Abstract

Korean firms have achieved their exceptional growth in the industries such as semiconductor, steel, and mobile phone. Samsung Electronics boasts off its preeminent status as the world's largest semiconductor manufacturer, and Hyundai Heavy Industries maintains its dominant position as the largest shipbuilder in the world. When it is very rare to witness this type of the rise of late-industrializing economies, Korea certainly has proved the successful transition from a late-comer country to an advanced economy [1]. In other words, Korea's Information Technology (hereafter, IT) industry has gone through shifts in leadership from advanced countries to late-comer countries, and Korea could emerge as the country of novel technology in the industry [1]. While this exceptional growth trajectory by leading firms in Korea is impressive, it is apparent that the Korean medical device industry is not positioned as a leader in the global market. Though the medical device market in Korea has grown to the ninth largest market in the world in 2019, it still takes up only 1.6% share of the global market [2, 3]. The Korean medical device industry is generally characterized by thousands of Small- and Medium-sized Enterprises (hereafter, SMEs) and does not have many firms with sizable global operation.

The objective of this paper is to analyze the case of catch-up by late-comer medical device companies in Korea with the use of regression analysis of key financial indices from the stock market in Korea. Based on this aim of the study, the paper proposes the following research questions: (1) Which financial indices are appropriate to confirm whether a medical device company has achieved a meaningful catch-up? (2) What are the major strategic decisions which have significantly contributed to the catch-up in terms of financial indices? On top of the questions, the authors could propose one more question: what is a right business model for the successful catch-up of medical device companies? Multiple studies have emphasized the role and importance of a business model for the success and growth of business [4].

Open innovation signals in financial statement of firms

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Abstract

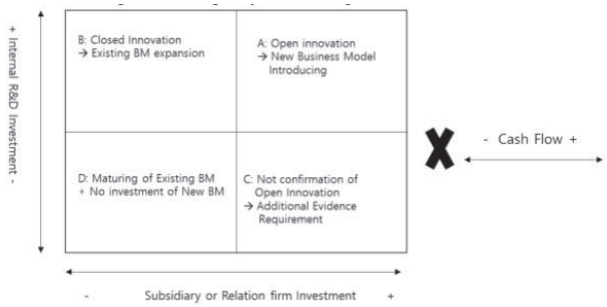
There were a lot of studies to measure open innovation of firms objectively after open innovation depth and breadth being calculated through survey results which were done based on Frascati manual(Laursen & Salter, 2006). Until now, hot issues in open innovation include not only making open innovation work, but also measure open innovation objectively including catching up of profit from it (Davila, Epstein, & Shelton, 2012). After survey based measure, another representative method to measure open innovation was to calculate open innovation from the perspective of inter-organizational knowledge flows (Chiang & Hung, 2010). Representative example of this is to measure the open innovation of any firm by multiplying open innovation breadth, and depth which were measured from collaboration patent ratio, and average co-applicant number of the firm (Yun, Avvari, Jeong, & Lim, 2014). Measuring of open innovation through intellectual capital flow from the exogenous in-flows, and exogenous out-flows is another way to measure open innovation from patent(Michelino, Cammarano, Lamberti, & Caputo, 2014).

Even though patent-based measuring of open innovation is more objective than survey-based method, more market-oriented measuring of open innovation is being required because 1) patent based open innovation measure cannot be applied to a lot of firms which do not apply so much patents; 2) patent is sometimes not close to market in firms.

Our research questions are as follows.

How can we find out open innovation signal of firm directly or indirectly at financial statements? This research question has focal point to find out clues to evaluate of open innovation of the firm at the financial statement.

Building model to finding out open innovation signal from financial statements



Configuration path of industrial digital transformation from the perspective of regional innovation ecosystem

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Abstract

Digital transformation is the main engine of the development of digital economy, which contains huge economic and social value. In the era of digital economy, industrial digital transformation has become the main driving force for high-quality economic development and sustainable growth. Traditional industrial enterprises urgently need to integrate into or even build an innovation ecosystem to successfully achieve digital transformation. How to break the traditional technological innovation ideas, and rely on the innovation ecosystem to speed up the formation of new technologies, new markets and new systems , is a problem that needs to be considered in the exploration of industrial digital transformation. At present, China is in the stage of transforming to an industrial power, and its industrial digital transformation is still in its infancy. In addition, China's inter-regional industrial digitalization development is unbalanced, and the phenomenon of "digital divide" is more prominent, so it is necessary to explore the linkage and matching mechanism of regional innovation ecosystem driving industrial digitalization transformation. Research question is to explore the configuration path of regional innovation ecosystem driving industrial digitalization transformation.

The concept of innovation ecosystem originated from the study of business ecosystem. A business ecosystem is an economic association composed of interacting organizations and individuals. It describes how an economic community operates by emphasizing the interaction between organizations and their business environment (Moore, 1993). In the business ecosystem, with the passage of time, enterprises, as members of the system, through mutual cooperation, improve their ability and effect of co-evolution and promote the co-evolution of the whole business system.

Keywords: industrial digital transformation, digitalization, regional innovation ecosystem, open innovation

Innovation of International Cooperation Mechanisms and Governance System for High-Quality Development of the Belt and Road Initiative

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Abstract

China's Belt and Road Initiative (BRI) is a vision to facilitate international economic, political and cultural cooperation in the new era. Despite the emerging literature on BRI's role in the transition of global governance, a comprehensive and systematic analysis of the initiative from the perspective of governance system is still lacking. To address the research gap, this paper explores the innovation of international cooperation mechanisms and governance system by optimizing the existing institutional organizations, legal systems, cooperation mechanisms and cooperative culture. The aim is to promote a smooth shift of BRI's construction from policy planning to meticulous implementation. We propose a framework with a three-step approach, synthetically analyzing China's official narratives on BRI and its practical implementation. We find that BRI's advancing construction needs dynamic coordination of all propelling mechanisms, which are yet to be innovated based on the concept of a community of common destiny for mankind. The study concludes that a communal, multilateral and consultative development mode that encourages multi-level governance arrangement might be formed in pursuit of high-quality development of BRI.

This study mainly based on "the changes unseen in a century", interprets Chinese official discourse on the Belt and Road Initiative and analyzes four basic cooperation mechanisms in its practical implementation. In this process, we find a gap between top-down policy planning and bottom-up implementation, which calls for the improvement of all propelling mechanisms. On this basis, the paper proposes a possible way of innovation in institutional organizations, legal systems, cooperation mechanisms and cooperative culture. The purpose is to clarify the coordination between BRI and international cooperation mechanisms. We also try to find a path to promote the high-quality construction of BRI. Besides, we attempt to explore a communal, multilateral and consultative development mode that encourages multi-level bodies to participate in the governance of global issues.

Study on the Renovation of Smart Community Service Facilities for the Aged in Mountainous City

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Abstract

Smart pension is one of the important modules of smart community. Combined with the urgent demand for high-quality pension system construction in China, this paper discusses the design methods of smart community pension service facilities in the renovation of older communities in mountainous city.

From the existing research results, there are a large number of research results about smart community, smart pension and pension service facilities, but the findings are isolated. Most of the researches on smart community pension are on the construction of service platform and the "Internet + community pension" model from the perspective of management and sociology. This paper aims at the needs of smart communities in the transformation of old communities in mountainous cities, builds a smart community pension platform based on modern management and intelligent technology, and improves comprehensive service facilities such as daily life care, disease medical services, health status management and inner spiritual comfort for old communities in mountainous cities.

(1) Literature research and case analysis.

Collecting and reading a great number of recent literature and cases, this paper sorts out the theoretical research and design methods of smart community elderly care service facilities

(2) Questionnaire and interview survey.

This paper gets data and information through filling in the questionnaire by combining online and offline and conducting field interviews with community service subjects and objects.

(3) Qualitative and quantitative evaluation.

The analytic hierarchy process and fuzzy evaluation method are used to analyze the elderly service facilities in smart community, and summarize the design methods and strategies.

How does Adolescents' Usage of Social Media Affect Their Dietary Satisfaction?

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Abstract

Hypertension, obesity, and diabetes are representative chronic diseases of modern people. This study analyzes the relation between an individual's nutritional intake and the prevalence of chronic diseases using personal health data surveyed by Korea Disease Control and Prevention Agency (KDCPA). And then we explore the possibility of developing into a healthcare business model by case study. Our ultimate research question is: what is the role of open innovation in commercializing personal health data? This study tries to approach it with various possibilities in mind, such as employment of care dietetics, development of medical device, personal training in gym. We pay attention to the possibility that they could be combined with each other in the form of digital therapeutics in the development of business model. Figure 1 shows the frame of this study.

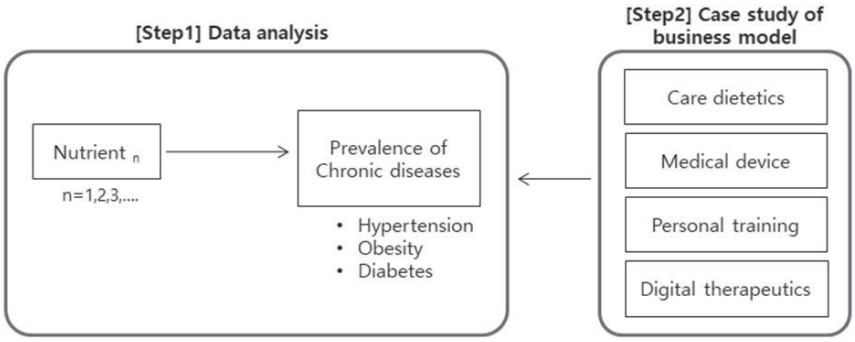

Figure 1. Research frame

Inkinen et al.(2019) studied port digitalization with open data. The open data is publicly available and non-chargeable data that is machine readable. Open data enables software and application development for external partners and users. It also supports data-based decision-making and management. This information is valuable particularly in the decisions concerning unconventional and sudden events.

Exploring Diverse Types of Residential Treatment Centers for COVDI-19 in South Korea

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(Seoul National University)
Kwangho Jung
(Seoul National University)

Abstract

This study investigates the public's perception of the role and function of Residential Treatment Centers (RTCs) in South Korea to respond to the spread of COVID-19. This study examines the diverse patterns inherent in the in-depth perceptions of COVID-19-infected patients isolated in RTCs. Specifically, this paper intends to investigate how non-medical factors affect the effectiveness of RTCs beyond the medical treatment dimension of RTCs. Using Q-methodology, this paper explores citizens' perceptions of the functions of RTC as quarantine facilities in terms of Wildavski's cultural typology. The empirical findings in this paper illustrate that RTC's publicness, functionality, psychological satisfaction, and professional competency of caregivers significantly impact RTC's performance.

Keywords: COVID-19, Residential Treatment Center, Emergency Management, Q-methodology

Could Riga Become a Smart Tourism Destination Without Being Sustainable in the Era of Digital Transformation?

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Lu Lu CHEN

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Abstract

Riga city: Locating near the Baltic Sea, Lativa is a magnetic country. While most of the cities have one or two postcard-perfect streets, Riga, the capital city of Latvia, has a whole area lined with perfectly preserved architecture, ranging from Romanticism to Gothic and Baroque. The meandering streets of the Old Town is a beguiling setting for wandering. As a UNESCO World Heritage Site, Riga is teeming with tranquil green pockets that offer respite, fresh air, romantic backdrop for ambling, convenient paths for jogging and last but not least – free wifi. Whether covered in white blankets of snow or brimming in vivid autumn foliage, the city's parks are stunning in every season. The SDGs of the UN2030 agenda proposes a way towards sustainability in all-round, which challenges Riga city's positioning as a sustainable UNESCO World Heritage Site in the Era of smart city. Therefore, being sustainable first or being smart first becomes a question for some researchers.

Key Words: Smart tourism destination, sustainable tourism, digital transformation

Being smart without being sustainable? Sustianable tourism destination (Lee, 2001) would stimulate the implementation of sustainable development through an interdisciplinary, holistic and integrative approach combining different aspects of existing tools. It promotes sustainable development at the destinations. Three main components are sustainable development, tourism and destination.

Smart city (Ozkaya et al., 2020) is presented as smart living, smart governance, smart economy, smart mobility, smart environment, and smart people, including essences such as, transportation, information and communication technology, economy, natural resources, human and social capital, quality of life and participation of citizens in the management of cities.

Smart sustainable city (Bibri & Krogstie, 2017) is a new techno-urban phenomenon as a result social, urban, and technological shifts. Cites should be sustainable before becoming smart (Yigitcanlar et al., 2019). Riga city as a smart sustainable tourism destination.

Research on Builder difference and Development Strategy of Industrial Parks from the Perspective of Innovation Ecosystem

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Abstract

Industrial parks have effectively promoted the development of Chinese open economy, promoted the process of industrialization and urbanization, and played an important supporting role in regional economic development. Entering the new era of high-quality development, the park is also faced with problems and challenges such as poor quality, homogeneity, transformation and upgrading, and independent innovation. In the context of high-quality development in the new era, strategic transformation needs to be realized through building a soft environment. By reconstructing the operating mode and the profit mode, to achieve a fine, intense and characteristic development. Open cooperation will increase the efficiency of resource allocation and open up a new path of upgrading and development. By studying the industrial parks led by government, universities or business owners, this paper constructs the strategic framework of industrial park development, analyzes the similarities and differences of industrial park development strategies of different subjects, and provides reference for the development of industrial parks of different subjects.

With the development of the region, modern industrial parks tend to take shape, and new association theories have emerged in the world, which are representative of innovation cluster theory, sustainable development theory and innovation ecosystem theory.

1.Innovation Cluster.

The theoretical basis of the science park is an innovation cluster theory. Scholars M. Castells and P. Hall, who have examined plans for a science park, a science city, and a high-tech city, believe that the most difficult part of the whole business of building a high-tech center is to connect university researchers with industry. Some of Chinese successful science and technology parks are playing the role of cooperative organizations through institutional innovation.

Improving an online shopping platform design based on the user experience of the elderly

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Taesun Kim

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Abstract

Due to the improvement of the Internet usage environment in recent years and the development of the new crown epidemic, more and more older adults are using shopping platforms more actively to meet their consumption needs. The Chinese government has put forward policy guidance recommendations to promote online platforms to improve the user experience of the elderly more actively. The document "Implementation Plan on Effectively Solving the Difficulties of Using Smart Technologies for the Elderly" (China State Council, 2020) proposes policy recommendations to improve the user experience of the elderly by optimizing the usage process and interface interaction, which indicates that the use of online platforms by the elderly The difficulties that exist are getting the attention of the society, and with the influence of the policy, the environment for the elderly to use the Internet will be further improved. According to the 2021 Online Consumption Report for Seniors (Jingdong Institute of Consumer and Industrial Development, 2021), seniors' number of goods purchased through online shopping increased 4.8 times from January to September 2021 compared to the same period last year. During the New Crown epidemic, social isolation policies have led to difficulties in travel, and seniors are trying to use new shopping methods to meet their daily consumption needs. As the convenience of online shopping is recognized by seniors and their experience in using it continues to accumulate, there is a trend of continued development in the frequency of seniors using shopping platforms. Therefore, both from the policy and social background, there is an actual demand to improve the user experience of older adults using shopping platforms. The purpose of this study is to investigate and analyze the user experience problems in use based on the theoretical perspective of user experience, take the Chinese shopping platform Jingdong as an example, find opportunities to improve the design optimization of the shopping platform and provide valuable design suggestions for the improvement of the user experience of other shopping platforms.

1. What are the experience problems encountered by seniors in using the shopping platform?
2. Can seniors complete the whole shopping process happily?

Two-pronged Approach: Research on the Influence of the Interaction between Green Contracting and CSR Management Committee on Green Innovation

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Abstract

In recent years, companies have faced increasing pressure on environmental responsibility. In order to resolve the potential conflict between environmental performance and executive performance, some companies have adopted the two practices of including indicators based on environmental performance in executive incentive contracts (referred to as "green contracts" in this article) and setting up a social responsibility management committee under the board of directors. method. Studies have shown that because of the ambiguity of environmental performance indicators, some companies only regard "green contracts" as a symbolic sign that companies attach importance to environmental responsibility, and they have not played a substantive role. This article selects the data of Chinese listed companies from 2017 to 2021 to try to examine the impact of the relationship between green contracts and the establishment of a social responsibility management committee on green innovation. The results of the study found that the two have strong complementarity when they play a role in green innovation. Further research found that this complementarity changes with changes in the external environment. When companies face high credibility concerns, they are more likely to adopt a combination of green contracts and the establishment of a social responsibility management committee.

Under the "dual carbon" goal, breaking the "one or the other" situation of economic development and environmental protection, and moving towards green development has become an inevitable choice for building a community with a shared future for mankind. Enterprises are the boosters of economic development, but at the same time they are also the destroyers of the natural environment, and are the important subjects and key actors of green governance.

Executive compensation is an important part of the modern corporate governance system, and effective compensation contract arrangements are directly related to key issues such as the company's green governance level and the interests of stakeholders. In recent years, a "green contracting" phenomenon has emerged in the practice of corporate governance.

A Study on the Role of Female Workforce in Korea's ICT Industry

Daesoo Choi

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Abstract

This study was conducted to check the role of Woman in the ICT field and to seek ways to maximize it. First, through prior research, it was confirmed why the role of women is not receiving attention in Korea, which is called an ad-vanced country in the ICT field. In addition, various policies to overcome this phenomenon were reviewed. Based on this review, this study analyzed the per-formance of woman workers in the ICT industry through quantitative data. First, the case where the representative of the company is man and the case where the representative is woman were compared and analyzed, and additionally, perfor-mance was analyzed based on the gender ratio of workers.

As a result, it was confirmed that companies with a higher woman ratio than the average recorded high financial performance. Based on these results, it can be seen that the validity of the policy direction to expand the role and weight of woman workforce in the ICT field is secured, and a detailed study on a plan for this is needed.

Keywords: 4th Industrial Revolution, ICT manpower, female workforce

Asymmetries and Macroeconomic Impact of Oil Price Transmission in Oil-Exporting Emerging Economies

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Swansea University
Bo Yang
Swansea University

Abstract

Is the relationship between economic activity and oil prices asymmetric in oil-exporting emerging economies? How does fiscal policy in these economies react to oil price changes? In this paper, we tackle these questions by testing and evaluating the premise on which the responses from oil price shocks to GDP growth and adjustments of public expenditure are asymmetric using techniques developed by Kilian and Vigfusson (2011a) building on censored-regressor nonlinear VARs. We find substantial empirical support for the presence of asymmetries for our sample containing a group of oil-exporting emerging markets. We explain how the output and fiscal responses to large shocks are significantly different depending on country-specific characteristics and stabilization incentives. Our applications are able to uncover and explain the distinct co-movements between oil prices and fiscal spending which enable us to evaluate how to address fiscal imbalances. The implications for theoretical models of the transmission of exogenous energy price fluctuations can motivate further investigation into the roles of energy prices, foreign exchange inflows and government expenditure cyclicality in understanding the growth process specific to resource-rich open economy emerging countries.

Keywords: Asymmetries; Oil price transmission; Censored oil price VARs; Emerging economies

Does Energy Poverty Hinder Reduction of Carbon Emissions? The Case of China.

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Abstract

In the past few years, China has basically eliminated the absolute poverty of its country. However, the acquisition and distribution of some resources is still the most concerned problem of economists. In particular, under the background of unbalanced distribution of China's energy consumption categories and large dependence on imports for some fuels, energy poverty is still a general problem. In 2020, China committed to peak carbon dioxide emissions before 2030 and achieve carbon neutrality before 2060. Therefore, it has become a very complex topic to solve energy poverty and carbon emission reduction at the same time. In this study, we define energy poverty as the situation that basic energy consumption cannot be achieved according to demand. The purpose of this study is to explore the nexus between energy poverty and carbon emission reduction, so as to provide a theoretical basis for China to complete the task of reducing carbon emissions while considering the alleviation of energy poverty.

The definition of fuel poverty is essential for a research or policy-making. Energy poverty refers to the lack of availability to adequate, affordable and high quality, environmentally friendly energy (fuels) for survival, development and safe use (Hao et al., 2014). According to some other research (e.g. Charlie et al., 2019), energy poverty also refers to a case that the effective energy consumption of a family is lower than a specific level required to ensure some basic needs. These different definitions make the research objects and characteristics of energy poverty dramatically different (Moore, 2012). In our research, we mainly focus on the case that households do not have access to energy on demand.

To address such an issue, the primary target is to assess the energy poverty. Generally, the measurement of energy poverty is divided into macro approaches and micro approaches. From the micro perspectives, studies are concerned about whether household energy consumption can meet their basic needs. These studies are based on a large number of surveys or interviewers (Zhang et al., 2019; Liu et al., 2020).

Relational view and open innovation: implications for theory and practice

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Abstract

The purpose of this paper is to examine the role of relational capabilities in the process of value creation and value capture within networks and in the light of open innovation.

Literature on value creation through "network resources" (Wassmer and Dussauge, 2011) has gained increasing attention, over years, in the strategic management community. The reason of this interest can be linked to the assumption that new sources of value are generated also through the exchange and combination of resources in new different ways (Goshal and Moran, 1996) and the activation of different relations outside firm's boundaries. Starting from this point of view, a network can be a new way of exchanging and combining resources in order to generate value (Dyer and Singh, 1998). In particular, in the light of the relational view, a network is a way to generate relational rents that are distributed amongst partners and whose benefits can occur both at a common and a single. This view recalls the issue of value creation and appropriation. In particular, network is considered the unit of analysis for the rent-seeking opportunities since some scholars conceive it as facilitator of knowledge transfer and exchange in the light of open innovation (Hwang et al, 2018). According to this view, network has to be able to deploy capabilities that allow the acquisition, generation and combination of knowledge (Bae et al., 2017), since knowledge is conceived as a core component in the creation and appropriation of value.

Value is, hence, created by the network where this network is the expression not only of the sum of the different resources brought by the single firms within the relational aggregate but also of the new resources and opportunities generated by the network itself. This reflection underpins the question of value capture since it is important to understand to what extent such created value is then spread between the firms and the network itself.

A case study on the effect of knowledge service on business performances according to the firm technology level : evidence from south korea

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Abstract

Today, Knowledge and Ideas have played a key role in the knowledge-based society for particularly technological innovation. It has been driving firm growth and national economic growth [1]. It took about 100-year period each era, from the 1st Industrial Revolution (Steam engines were used, Since 1784) and the 2nd Industrial Revolution (Electricity was activated, Since 1870) to the 3rd Industrial Revolution (Revolution of information technology, Since 1969). The cycle has been shortened enough to take about 40 years, from the 3rd Industrial Revolution to the 4th Industrial Revolution (Era of intelligence). In the midst of the whirlwind of the 4th Industrial Revolution, a new era is opening out as innovation in progress rapidly across all science technology, knowledge, and information of fields. Technological progress plays an important role in economic growth. Technological progress is viewed as an exogenous factor, and technology advances are driven by external influences. This can be seen as an 'external economic effect' [2]. Romer et al. argue that economies of scale are formed and profits increase as technology internalized, which is acting as a major driving force for economic growth [3]. KS (Knowledge Service), which provides knowledge-intensive information to improve process of the organization for firm growth and national-level growth, is increasingly utilized to enhance firm expertise [4].

This study clarified the effect of knowledge services on business performance of firms and discussed the moderating role of firms' technology level. Respondents were classified into high, medium and low technology level based on the expertise of the company.

Keywords: knowledge service; firm capabilities; business performance; decision making; company technology level; PLS-SEM; PLS-MGA

An Introduction to R&D Project Valuation Model and System

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Abstract

It is a very important task to estimate the value of R&D project in determining the direction of government's public investment. This study introduces a valuation model for R&D project and shows its prototype system. The valuation model proposed in this study has been developed by combining the traditional model of technology valuation and economic evaluation model for public sector. This model is highly expected to play a major role in making efficient decision-making for R&D policy establishment in government departments.

There are three basic approaches for the traditional technology valuation: cost approach, market approach, and income approach. The cost approach estimates the cost to directly develop or reproduce the technology to be evaluated. The market approach is a method estimating the technology value based on transaction cases of the technology in the market. The income approach measures the present value of the net economic benefit to be obtained over the economic life of technology. A DCF method, which belongs to the income approach, has been used for R&D project valuation in our study. Raikar and Adamson performed valuation of an existing renewable project. They used the standard DCF method to estimate the value of R&D project.[1] On the other hand, some researchers performed R&D project valuation by using the method of real options.[2-7]

Figure 1 shows a process of R&D project valuation. IPC and KSIC information related to the project is extracted to perform R&D project valuation. Economic life of technology related to the R&D project is estimated by referring to the TCT data corresponding to the IPC information. Based on KSIC information, revenue data, which can be achieved when the technology related to the R&D project is commercialized, are estimated.

Keywords: project valuation, DCF, project valuation model, project valuation system, photovoltaic

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Digital innovation path of traditional manufacturing industry—A case study from ANSTEEL

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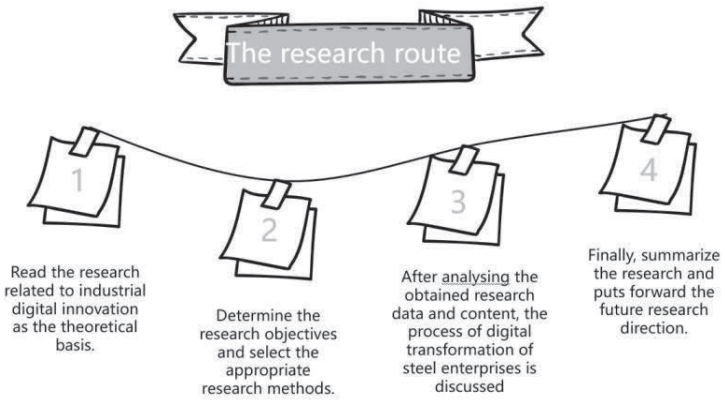
Abstract

Relying on the development of technology, especially the rapid development of Internet, big data, cloud computing and Artificial Intelligence, the society are indeed entering the industry 4.0 era. With opportunities and challenges, more and more traditional manufacturing industries pay attention to the digital innovation. Meanwhile, Northeast China is a heavy industrial base, which maintains the foundation of China's rapid development. In recent years, due to overcapacity and many restrictions of environmental protection, the development of heavy industry in Northeast China has been slow or even stagnant. Based on this, taking the steel industry as an example, I hope to explore the development mode of traditional manufacturing industry in the new era.



Generally, digital innovation emphasizes the integration of digital technology and products, including the emergence of new products, new processes or new business models. The definition of digital innovation was first put forward in 2010, which mainly focuses on the product innovation and organizational logic, as well as the digital transformation of non digital elements(Yoo et.al, 2010). They defined digital innovation as the new combinations of digital and physical components to generate new kinds of items. With the deepening of research, more and more scholars are no longer limited within the scope of product innovation, instead, they pay attention to the innovation of the whole process. Digital innovation can be broadly defined as a new product, process or business model, a view from Fichman et al. (2016).

An evolutionary game research on value co-creation behaviour of digital patent platform

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Abstract

The rapid innovation of digital technology represented by AI, Blockchain, Cloud Computing and Big Data has promoted the rapid development of China's digital economy. The deep integration of digital economy and real economy has spawned a number of new industries, new forms and new models. Digital patent operation platform is the representative of this new model and the fastest developing one in the field of intellectual property operation. It is no longer just a service platform that traditionally provides patent query and transaction. It is increasingly becoming a platform innovation ecosystem that gathers patent suppliers and demanders, capital, intermediaries, government and other subjects to realize patent creation, protection, management and application. Digital patent operation platform (DPOP) is a new business organization form that takes digital technology as the support, enterprises or governments or other organizations as the leading platform of focal actor, and uses the network effect to aggregate multiple subjects to carry out patent operation activities. Not only carry out patent creating,protecting, managing and exploiting intellectual property. but also increasingly become the platform innovation ecosystem, which gathers supply and demand sides of capital, intermediary, government and so on.The participants of the digital patent platform include the digital patent platform enterprises (platform owners), the government (platform regulators) and the traders (platform users).

In view of the influence of digital patent platform participants(owners,regulators and users)' decision-making on the stability of sharing economy system, based on the network externality of platform, the interactive influence of participants' behavior and the assumption of bounded rationality, an evolutionary game model composed of "owner regulator user" is constructed.

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The Perspective of Smart Education for Foreign Language Teaching and Management in Tertiary Education

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Abstract

Learning a foreign language is a process of practice making perfect. It is difficult to meet the goals of the course only in the classroom, so this also requires that we must rely on advanced science and technology to promote the completion of foreign language teaching tasks. The emergence of smart education has brought new experiences and methods for teachers and students to teach and learn. With its flexible time and convenient location, smart education has become the first choice for the reform of foreign language teaching in colleges and universities. Smart education is the use of information technology to complete the construction of learning scenes, realize the connection of space and the intersection of time, create conditions for learning anytime, anywhere, and help deepen between teachers and students, and among students. The aim of the study is to firstly investigate the influence of smart education on foreign language teaching in terms of the smart environment, the application of information technology, the smart pedagogy, and the smart assessment, and secondly find out how colleges and universities use the advantages of information technology and network platforms to empower language teaching and management in the Internet era.

The foundation of smart education lies in the abundance of resources. In terms of foreign language teaching in colleges and universities, teaching resources are open, updated, and shared (Shadiev & Yang, 2020). As Daniel (2012) mentioned that some well-known colleges and universities offer online courses, MOOCs, micro-classes, etc. of learning resources to allow students to choose more flexibly to meet diversified needs.

Keywords: Smart Education, Foreign Language Teaching and Management, Information Technology

Digital transformation of response to COVID-19 outbreak: A systematic literature review and future research agenda

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Abstract

As the COVID-19 response continues, in addition to the necessary offline prevention and control measures, it is also necessary to introduce online technology solutions, especially artificial intelligence, blockchain, Internet of Things and other technologies. However, the research question is how to quickly identify effective digital transformation measures to plan specific online epidemic prevention measures? The purpose of this study is to seek answers to digital transformation from COVID-19 related studies by bibliometrics.

A number of studies have conducted bibliometric studies on COVID-19 as a topic (Queiroz et al., 2020; Lou et al., 2020), but it is a pity that digital transformation is rarely involved. Bibliometric analysis based on either COVID-19 or digital technology is difficult to achieve. Therefore, the design idea of bibliometric analysis should fully combine the development characteristics of epidemic and the development status of digital technology, and consider the introduction of some innovation theories, such as open innovation and knowledge sharing (Alvarez-Meaza et al., 2020). Some studies (Aragones et al., 2020; Phillips, 2021) provides a preliminary rationale for digital transformation, but fails to explain how it relates closely to the COVID-19 pandemic.

This study intends to use the method of bibliometrics to carry out research. The main data comes from academic papers, conference papers, patents and other literature data, and the text content is deeply mined and analyzed on the basis of bibliometrics software such as CiteSpace, Pajek and VOSViewer.

The expected conclusion of this paper is to look for digital transformation strategies to deal with the epidemic from existing literature. There is a great deal of discussion and exploration in the existing literature on the topic of COVID-19, but it is scattered in the fragmented literature data. Bibliometrics research can explore and identify from massive data literature, so as to conclude diversified digital technology application schemes, and provide enlightenment for digital management of epidemic response for countries or regions under different conditions.

Due to the available literature, the analysis of this study is mainly based on the established epidemic response plan, so there is a lag time compared to the latest DEVELOPMENT trend of COVID-19.

Patent lawsuit risk early-warning system based on patent mining: A case of Artificial Intelligence

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Abstract

Various kinds of risks exist in the whole process of enterprise technology innovation, and the patent right that protects technology innovation has regional characteristic. Focus on the patent infringement risk in China in the commercialization stage of technology innovation process, this paper aims to construct an enterprise technology innovation risk early-warning system based on patent mining. This paper also makes an empirical study on the core patent infringement risk early-warning system of China's major high-speed railway enterprises, in order to provide reference for the risk management and investment decision-making of enterprises' patented technology in China. Intellectual property management capability affects technology innovation of enterprises [1], and a good patent infringement risk early-warning system is very important for enterprises to manage and control their technology innovation risks.

In the early research of risk early warning, expert evaluation method such as analytic hierarchy process (AHP) evaluation is often used. Later, econometric methods became more widely used, for example, econometric model and principal component analysis (PCA) are used to construct and apply anti-dumping early warning system [3]. Recently, the construction of risk early-warning system based on data mining has become a new research trend. However, the research objects are mainly enterprise financial risks, which do not match with the characteristics and requirements of technology innovation risk early warning.

Fuzzy set theory was first proposed in 1965, using membership degree and membership function to express uncertain information [8]. Based on the fuzzy set theory, intuitionistic fuzzy sets were proposed, which have better flexibility and more powerful functions in dealing with uncertain information because of the consideration of non-membership degree and hesitancy degree besides membership degree [9]. Based on the Hamming distance and the Euclidean distance, which are most widely used distances for fuzzy sets, distances for two intuitionistic fuzzy sets was proposed [10], and later widely used in Risk Assessment.

Predicting insolvent companies and analyzing factors influencing insolvency using auto-encoder

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Abstract

Q1. Previous studies related to predicting insolvent companies have been steadily progressing since the 1960s, and recently, modeling has been made based on improved computing performance and AI-based algorithms (DNN, SVM, Ensemble algorithms, etc.).

However, recently (since 2010), research using a new AI-based methodology has been insignificant, and there are difficulties in collecting data on insolvent companies.

Can't we approach it from a perspective other than the direction of upgrading the model's predictive performance?

Q2. A review of the main concepts and existing utilization methods of the auto-encoder algorithm.

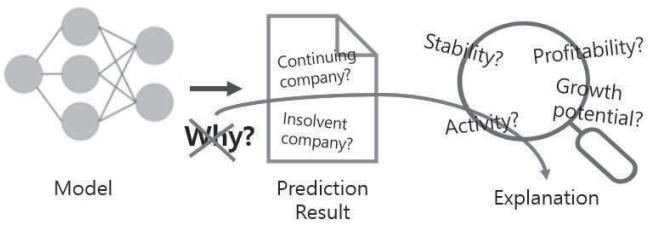
Autoencoder is known as unsupervised learning that can be learned even when there is no dependent variable for a given input value (or insufficient).

This is specialized in noise removal for raw data and is used in computer vision, manufacturing process failure diagnosis, and abnormality detection.

Q3. First, we apply the method of the auto encoder algorithm to derive the results of predicting insolvency for listed companies.

And if we can look at the main characteristics (stability, profitability, etc.) that influenced the derivation of the results, wouldn't it be possible to increase the persuasive power of interpreting the model results?

Using the autoencoder application methodology, we would like to analyze the differences between companies and insolvent companies and see if they can interpret factors that have affected insolvency as well as predictive performance for insolvency.



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Job Satisfaction and Job Autonomy in Korean Science and Technology Research Institutions

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Abstract

Job satisfaction and job autonomy usually have a very close relationship. Job autonomy has been regarded as a highly significant factor in job satisfaction. Job autonomy is a critical factor that impacts five separate domains of job satisfaction; payment, fringe benefits, promotion prospects, job security and importance, and work challenge. However, because these two factors are so closely related, it is difficult to measure the pure relations between these factors. Therefore, this paper aims to examine job satisfaction and job autonomy separately by observing a factor that only impacts job satisfaction; salary. Next, identify a factor that only affects job autonomy; creativity. This paper aims to see the relationship between job satisfaction and job autonomy among researchers in South Korea through a survey. This survey was conducted with approximately 200 researchers from private and public Korean science and engineering research institutions such as KRISS (Korea Research Institute of Standards and Science), KISTEP (Korea Institute of Science & Technology Evaluation and Planning), and KIST (Korea Institute of Science and Technology). The survey contains questions that measure job satisfaction, job autonomy, creativity, and overall characteristics of their organizations. This paper provides various implications of how job autonomy influences job satisfaction in science and technology research institutes.

Keywords: Job Satisfaction, Job Autonomy, Salary, Creativity, Research Institutions

Business Model Innovation for Riga as a Sustainable Smart Tourism Destination after the COVID-19 Pandemic

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Natalja LACE
Riga Technical University
***Ling WU**
Zhe Jiang University(Corr)
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Gui Zhou University

Abstract

The losses in tourism sector due to COVID-19

Almost US$4.5 trillion to reach US$4.7 trillion was lost in 2020, with the contribution to GDP dropping by a staggering 49.1% compared to 2019, relative to a 3.7% GDP decline of the global economy in 2020 (WTTC, 2020).

International arrivals were predicted a 4% increase in 2019, but the outbreak of COVID-19 changed its prediction to a 30% reduction in worldwide arrivals in 2020, which translate to a loss of US$ 300-450 billion in the worldwide tourism sector (UNWTO, 2020). 81% of worldwide tourism workforce was impacted (Williams, 2020).

Art, culture, and communication in Australia were mostly strongly affected by COVID-19 (Flew & Kirkwood, 2020).

Airports predicted losses of US$ 76.6 billion in 2020 (Garcia, 2020). Skyscanner data showed that 30% of travel was reduced in Europe while 50% in Asia (Gallego & Font, 2020).

Restaurant industry in the US saw about 7 million layoffs and the complete closure of 60% restaurants. The shutdown of nearly 16,000 of these business became permanent (Croft & Jay, 2020).

Key words: Business model innovation, destination marketing, sustainable tourism destination, smart tourism, covid-19 pandemic

Regional Pollution and Environmental Investment of SOEs in China: Political rent-seeking or Stakeholder Maintenance?

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Abstract

Unlike developed markets, the governance model of Chinese SOEs exhibits certain "dual" characteristics, with administrative and economic governance co-existing within SOEs, hence the term administrative-economic governance model. Similarly, in the environmental behavior of SOEs, the dual purpose of administrative and economic governance coexists.

According to institutional theory, the level of regional pollution changes the external institutional environment in which the firm operates, which in turn affects the firm's environmental behavior. In areas with higher pollution levels, environmental behavior brings higher legitimacy to firms, and firms have higher incentives to engage in environmental investments and achieve their goals. This legitimacy comes from two main sources: first, the local government. For SOEs, environmental investments come from administrative mandates given by the government. Higher environmental investments help the government achieve its environmental governance goals, which in turn creates an implicit link between the enterprise and the government and thus brings policy preferences to the enterprise, i.e., a political rent-seeking mechanism. Second, stakeholders. Environmental investments are also the demands and expectations that stakeholders put on enterprises. Higher environmental investment helps to establish a positive image for the company and maintain the relationship between the company and its stakeholders, which in turn generates higher economic performance and creates value for the company, i.e., a stakeholder maintenance mechanism. And by both mechanisms mentioned above, the regional pollution level will increase the environmental investment of SOEs.

We further choose political affiliation of executives and the level of regional marketization as moderating variables to examine the main purposes for which Chinese SOEs engage in environmental behavior. Political affiliation enhances the degree of administrative-type governance of SOEs, strengthens the link between firms and the government, and makes firms more focused on achieving political goals, which will strengthen the political rent-seeking goals and weaken the stakeholder preservation goals in SOEs' environmental behavior.

Prediction of Hotel Occupancy based on Web Search Data

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Abstract

The development of the Internet has led to the application of big data in various fields, which provides powerful data support for analysis and prediction in finance, tourism, and hospitality industries by analyzing and processing massive amounts of data. For the hotel industry, consumer information search based on the Internet reflects tourists' travel and accommodation needs. The application of big data could help the hotel industry make scientific occupancy demand forecasts, systematically explore the potential relationship between consumer information search and occupancy demand, and comprehensively analyze the role of web search data in hotel management. It aims to realize the data, intelligence better, and personalization in hotel management, promote the scale of hotel development, the standardization of hotel management, the diversification of marketing, and the upgrading of hotel management mode.

This paper takes Sofitel Guiyang Hunter as the research object. It builds a VAR model based on the six tourism factors using the destination temperature, public holidays, and destination web search data. It is verified that all variables are correlated with hotel occupancy, among which the correlation between web search data and occupancy is the most significant. The important value of web search data in hotel occupancy prediction was confirmed. The analysis findings are used to forecast hotel occupancy and provide corresponding suggestions for hotel management practices. Based on the perspective of data analysis, this study provides referenceable suggestions for hotel management in the era of big data.

Based on the background of big data, the feasibility of predicting occupancy in the hotel industry by studying the variables related to temperature, public holidays, and destination-related keyword web search data before and after being affected by the COVID-19. Based on many relevant literature studies of big data collection and analysis modeling. Using Sofitel Guiyang Hunter as the research object, we explore the influence of the above variables on hotel occupancy and the possibility of hotel occupancy forecasting. Furthermore, make reasonable suggestions for future hotel marketing formulation and revenue management to achieve the goal of maximizing hotel profitability.

Open Innovation Dynamics and Evolution in the Mobile Payment Industry
- Comparative analysis among Daegu, Cardiff, and Nanjing

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Zheng Liu

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Bo Yang

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Abstract

The understanding of smart payment industry in the financialization under digital transformation will be the clue to capture the future directions and dynamics of modern capitalism economy.

Is there any difference in paying patterns according to capitalist economy condition among Daegu, Cardiff, and Nanjing? How about the difference of smart payment industry in smart payment market share, competing with traditional payment systems, and open innovation of smart payment industry among these three regions?

By answering to these research questions through comparative analysis of 3 regions based on qualitative interview method, this study found out as follows. First, there are different payment industry context among 3 regions; Daegu, card payment majority; Cardiff, transition from card payment to smart payment; Nanjing, Smart payment majority. Second, Economic contexts of regions could give direct impacts of the development of mobile payment industry such as the lock in the card industry at Daegu in South Korea, or the well-developed smart delivery platform of E-commerce at Nanjing in China, or the long history of capitalist economy which had increased the labor condition of laborer at Cardiff in Wales. Third, from the qualitative interview researches on 3 regions, gave 2 additional grounded theories such as the future direction of smart payment industry, and the double locked-in the card industry at Daegu in South Korea.

Keywords: mobile or smart payment, open innovation, business model, financialization, Daegu, Cardiff, Nanjing

Prediction of community-level seasonal changes based on detailed climate change scenarios in Korea

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Abstract

Purpose/ Research Question: There is a need to study changes in biological seasons and interactions within communities due to climate change and Changes in seasonally repeated biological events (flowering of plants, first appearance of migratory birds, etc.) are a means to intuitively and quantitatively determine the impact of climate change (Manzel et al, 2006; Sparks et al, 2007).

Design/ Methodology/ Approach:

Establishment of seasonal research species by nutritional level and identification of changes by period.

Regression analysis was performed according to the year of observation of biological seasonal events for about 100 years from 1920 to 2019 to identify changes in each period of each species

case	Scientific name	phenology	(Julian Date)	Trophic level
(flora)	*Prunus mume*	FFD	81.44	Producer (n=6)
	Forsythia koreana	FFD	89.10	
	Rhododendron mucronulatum	FFD	91.41	
	P. serrulata	FFD	98.49	
	P. persica	FFD	99.72	
	Pyrus serotina	FFD	104.62	
(insect)	*Pieris rapae*	FAD	85.36	Primary (n=1)
(amphibian)	*Rana nigromaculata*	FAD	101.69	Secondary (n=3)
(avian)	*Alauda arvensis*	FSD	93.65	
	Cuculus canorus	FSD	130.07	

FFD : First Flowering Date, FAD : First Appearance Date, FSD : Fist Singing Date

Figure 1. List of species

Among consumers, the slope of the regression equation for secondary consumers, animals, was larger than for primary consumers, such as insects and amphibians.

Rediscovering patriarchal leadership : Focusing on Chinese IT companies

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Objectives and theoretical and practical relevance The IT industry, one of the fastest-growing industries over the past 20 years, is a great driver of growing each country's economic quantitative and qualitative performance (Wang, Wei, & Lin, 2021). In the case of China, the IT industry is estimated to reach $8.1 trillion in 2020 or about 55% of China's GDP (2021). Still, the IT market is entering a hypercompetitive era due to the participation of several competitors and is constantly competing with domestic and global competitors. In particular, unlike other knowledgeintensive industries , IT companies must constantl y strive in various ways to secure new competitive advantages due to the nature of industries that do not have a significant impact on borders. One of the various factors to secure the competitive advantage of these IT companies is the leadership of the CEO. Not only does the CEO's leadership have a decisive impact on a compan y'sma performance (Yoo & Kim, 2015; Braun et al., 2013), its importance is increasing further in today's complex decision-making environment. It is essential to reduce opportunistic behaviour and hieve organizational goals rather than personal interests through leaders who run companies in a rapidly changing market environment. In addition, based on the leader's influence, members develop their abilities and are motivated to complete the work at a higher level. Accordingly, various leadership-related studies are being conducted steadily to ensure that members take risks and perform challenges and innovations in an uncertain and competitive IT market environment. While many existing leadership-related research focuses on the western perspective, such as neo-charismatic theories, relational theories, and contextual theories, research on patriarchal leadership has been in the spotlight recently (Farh & Cheng, 2000). Asian companies are found to have general business relationships and have various relationships such as academic ties and delays between managers and members outside the company. Because of this complex role, the relationship between leaders and members is seen as an authoritative leader while taking the form of a family away from organization and trying to enact strict rules and take more responsibility (Dorfman et al., 1997).

Does digital finance empower carbon emission reduction? Evidence from Chinese cities

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Abstract

Firstly, this paper verifies the relationship between "digital finance -- urban carbon emissions" in the urban level, and discusses the spatio-temporal evolution characteristics and influence relationship of the two from a more nuanced scale. This paper uses "G20 Advanced Principles of Digital Financial Inclusion" launched by the central bank as a quasi-natural experiment for exogenous shock testing, which better improves the robustness of the article's results. Secondly, this paper explores the fundamental issue of what path digital finance mainly uses to empower urban carbon emissions, and verifies the mechanism of technological innovation, resource misallocation, and industrial structure on the role of digital finance in empowering urban carbon emission reduction. Thirdly, considering piling-on effect of the network effect and inclusive effect on digital finance, this paper explores the nonlinear relationship between digital finance and carbon emissions.

Building a strong digital nation and improving the quality of the ecological environment are key aspects of China's drive for high-quality economic development in the new era. As the lifeblood of the national economy, finance is the core and cornerstone of a country's economic system. Digital finance has achieved leapfrog development from the background of long-standing inadequate supply of traditional finance in China, which greatly promotes the optimization of resource allocation efficiency (Cetorelli and Gambera, 2001). In nature, digital finance is a new form of economy that is endogenous to technological innovation, while using digital knowledge and information as key factors of production. In China, the logical link between digital finance and carbon emissions is yet to be explored, and systematically identifying and inferring the causal relationship and transmission pathways between the two has important policy implications for achieving the dual carbon goal and building a digital power (Xu et al., 2018; Yu et al., 2018; Shao et al., 2011).

Keywords: Digital finance; Carbon peak; Emission reduction effect

Effects of Chinese carbon reduction policies on carbon emission
-Based on text mining

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Abstract

Carbon emission reduction policies play a vital role in regional carbon emissions. By means of text mining, this paper makes a cluster analysis on the carbon emission policies since the 13th five year plan. By comparing the topic model labeled LDA and LDA model, this paper classifies the carbon emission reduction policy texts of China over the years. This paper studies the keywords of carbon emission reduction texts over the years and the impact of keywords on the policy release of the next year. After two dimensions of time and region, this paper analyzes the effect of carbon emission reduction policy. Finally, we put forward policy suggestions on reducing regional carbon emissions. Based on the method of Topic Model LDA, this paper studies the above problems.

In recent years, how to achieve low-carbon development has become a strategy concerning the long-term development of the country (Tu Zhengge, 2012), so carbon emission reduction policy has become a hot topic in China's energy policy. Since coal has regional attributes and policy release has time attributes, regional attributes and timeliness of policy should be taken into account when analyzing policy effects.The analysis of policy is rooted in the quantitative research of policy texts. LDA model is used to solve semantic mining in text clustering. It is a text research method matching with large-scale and unstructured public policies (Kar et al., 2015).

Keywords: Policy Text Mining; Carbon Emission; Policy Research; LDA Model; Labeled-LDA Model

Analysis of regional innovation practices in Japan: the role of foreign engineers

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Abstract

For Japan, where there are concerns about a long-term shortage of engineers, the utilization of foreign engineers in Japan is an extremely important issue in the future. The purpose of this research is to focus on foreign engineers from ASEAN countries who are working in Japanese manufacturing and IT companies, and to investigate and analyze the actual situation of human resource development in ASEAN countries and education and training in Japan, and to consider a mutually beneficial and sustainable human resource development method.

Research issues of the paper are

1. Foreign engineers are highly susceptible to economic and political trends, making it difficult to secure stable employment and technological development. How to grasp the fluctuating needs of foreign engineers in both ASEAN sending countries and Japan
2. From the perspective of technology formation and human resource development, it is expected that foreign engineers will be trained from a long-term perspective, which will lead to the development of local industrial human resources in their home countries. However, the content, level, and method of education in the sending country and the content, level, and method of human resource development after employment in Japan are unclear, and do not necessarily lead to long-term human resource development in both countries.
3. Foreign engineers are expected to transfer technology to their countries of origin over the long term and to have a technological ripple effect. Currently, there are very few research studies on the technological spillover effects of employing foreign engineers.

As the government is making adjustments in the direction of relaxing the status of residence for foreign workers, the number of engineers from ASEAN countries who wish to work in Japan and the number of Japanese companies that use them are expected to increase. There are still many unstable factors in securing and retaining foreign engineers.

Keywords: engineers, skilled workers, migration, technology transfer, human resource development

Geo-economic factors of regional innovation: the case of Taiwan and Japan

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Abstract

The purpose of this paper is to examines Taiwan's technological capabilities and industrial innovation from a geo-economic perspective through its development history. While Taiwan experiencing a difficult international political position in relation to mainland China, Taiwan has handled its geopolitical situation by geoeconomically with powerful advanced technology.

Geoeconomics is the study of the temporal, spatial, and political aspects of economies and resources. Kato (2017) describes geo-economics as "a political and diplomatic method of realizing geopolitical interests through economic means. Taiwan semiconductor industry has become the largest and highest technological level in the world. Subsequently, Taiwan has begun to exert a form of geo-economic influence that is changing the way to assure its international position technologically. Since 1970s Taiwan's policymakers put their efforts to shifting Taiwan from labor intensive industry to high technology and innovative globally competitive industries.

The research question is how Taiwan successfully upgrading semiconductor and manufacturing technologies continuously over several decades. What makes Taiwan innovative in technologies? This paper explores these core questions and Taiwan approach to foreign and strategic geo-economic policies through the center of a regional industrial network of production processes in relation with the US, EU, China and Japan. Not only is the nature of economic organization currently raising important theoretical and practical questions about the basis of international competition, but it is also becoming increasingly clear that the influence of Taiwan's geo-economical position is largely determined by relative shifts in the balance of economic power.

Keywords: Taiwan, Geo-economics, regional innovation, TSMC, Hon Hai, semiconductor, EMS

Servitization of Service providers with Open Innovation Consideration

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Abstract

Servitization of manufacturing firms have been studied by number of scholars and practitioners in decades. Research streams are vary such as servitization case studies of different companies and industries in many regions (Kozlowska 2020, Ryu et al. 2009), servitization methods (Ahn et al. 2018, Bertoni 2019), financial influences of servitization (Neely 2009), types of services servitizations (Ziaee Bigdeli et al. 2018), and other additional studies such as challenges for servitization (Brax 2005, Neely 2009). However, servitization of service providers have not been studied. Vandermerwe and Rada (1988) explained the servitization of business as packages of goods, services, support, self-service, and knowledge. Therefore, servitization study is not only looking for changes of manufacturing firms. Alteration of service firms should also be an important issue in the many different industries. Hence this paper explains the service providers' understanding of servitization and their endeavors. Research method is in depth interview of members such as CEO, managers and employees of service providers. Through this, it has showed that the integration of products and services or the convergence of manufacturing and service providing process are not only happening in manufacturing industries.

Services are obviously often mentioned in servitization studies. Neely (2009) explained 12 types of services that manufacturers can use such as design and development services, systems and solutions, retail and distribution services, maintenance and support services and etc. Traditional manufacturers can add these services to their core products or processes to create extra value. Visnjic et al. (2012) explained the relationship between service investment and its performance. Service investments refers that an organization invests in restructuring or hiring service related employees. Service performance can be measured by analyzing an organization's service completeness which shows the firm's service coverage from basic after sales service to full coverage services such as performance-based contracts or integrated solutions (e.g. financing or training). Dinges et al. (2015) identified 85 important technologies related to servitization and 22 motivating drivers to the adoption of the technologies.

The Effect of R&D Management Competency on Researchers' Satisfaction : Based on the Characteristics of Institutes

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Abstract

Today's managers and administrators need knowledge and experience of open science, equality and diversity, ethics and public engagement — as well as of more conventional areas such as accounting, project management and research policy.

In the case of Korea, R&D management competency evaluation has been conducted from 2020 to improve the R&D management competency and service level of the researchers' in non-profit institutions overall research activities.

The purpose of this study is to suggest various ways for improving the evaluation system based on the survey and analysis of the R&D management competency evaluation results in 2020.

This study focuses on three questions: First, is the non-profit institutions' R&D management competency efficient? Second, is R&D management competency evaluation contributing to the enhancement of the R&D management competency and service level of non-profit institutions? Third, how can the efficient operation of the R&D management competency evaluation system be improved?

This study aims to present policy implications for the improvement of the evaluation system through a survey of R&D management competency evaluation results and hypothesis verification through statistical analysis.

As for major literature reviews, first, from the perspective of Open Innovation (OI), domestic and foreign prior research related to 'creativity of scientists and engineers' and 'creation of autonomous research environment to promote creativity' was examined.

For example, Wang-dong Kim(2008) argued that research funding, research organization, research cooperation, and research culture are important factors that affect the creativity of scientists and engineers, and the designing of an administrative organization that maximizes their creativity.

In addition, various research results have recently been published that the management competencies of the university's industry-academic cooperation group affect the management performance of universities such as education, research, and technology transfer (Hye-jin Jeong (2019), Hyuk-jae Kwon (2015), Moon-soo Park, Ho-gyu Choi, etc..

An empirical study on Z-generation's consuming motives and attitude towards electric vehicles in China

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Abstract

The present study empirically investigates the motives behind users' attitude formation, behavioural intention, and word of mouth towards electric vehicles among Z-generation of China. A survey was conducted among Chinese youths who are currently using or potential users of electric vehicles. Data were collected by applying a multi-stage stratified sampling method. The structural equation modelling technique was applied to examine the hypothesized model and tested the proposed hypotheses. This study results will show connection between social motives and electric vehicle adoption. The moderating impact of buyer involvement (high vs low) between motives and attitude will also be tested. The study findings providing suggestions for marketing Z-generation on electric vehicles.

This research aims at studying Chinese Z-generation's consuming intention on electric vehicles. Therefore, their attitude formation, behavioural intention and word of mouth towards electric vehicles will be examined. The research questions are: 1) what is the relationship between social motives and electric vehicle adoption? And 2) what is the moderating effect of buyer involvement between motives and attitude.

Sahoo et al. (2022) studied consumer motives and attitude towards adoption of electric vehicles in India and analyzed the policy implications for stakeholders. It is suggested that that while positive and social motives influence positive attitudes, the negative motives discourage and negatively affect electric vehicle adoption.

Keywords: Buying involvement, Attitude, Motive, Electric vehicles

Predicting Tourist Numbers by Applying Big Data An Empirical Research based on 2SLS

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Abstract

Tourists in the new era of Big Data tend to use search engines to retrieve information for tourism destinations before visiting, while tourists' information retrieval behavior leaves a large amount of search queries data on the network. The search data and econometric prediction model could be used to predict the number of tourists in tourism destinations. This study uses the search data of Baidu and Google search engines to predict Chinese tourists visiting Taipei city and further visiting the Taipei Palace Museum. Different from almost all previous studies using Big Data analysis to predict the number of tourists, the results of this study show that Big Data analysis could not predict the number of Chinese tourists visiting Taipei city and tourists further visiting the Taipei Palace Museum.

This research aims at predicting Chinese tourist numbers visiting Taipei Palace Museum by applying Big Data analytics with 2SLS model. Moreover, this research implies an empirical case about Chinese tourists visiting a city and then further visiting attraction(s) of the city by searching information from the internet. Search queries are captured and included in the Big Data analytics, which is used for the 2SLS model in the predicting process.

The research questions are

(1) if the numbers of search queries could predict the tourist numbers visiting Taipei Palace Museum?

(2) if the the numbers of search queries from different search engines could predict the tourist numbers visiting Taipei Palace Museum?

Keywords: Big Data Analytics, tourist numbers, 2SLS, Taipei Palace Museum

The effect of green innovation on financial performance through double-mediation of innovation and non-financial performance

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Abstract

Green innovation has become more important than ever (Zhang, Rong, & Ji, 2019). However, we have little understanding of the mechanism that green innovation affects firm performance. This study is designed to address this gap in the literature. Based on resource-based view, legitimacy theory, and signaling theory, we propose double-mediation model of innovation and non-financial performance as the mechanisms that connect green innovation with firm financial performance. Furthermore, based on the findings of empirical analyses we answer the following research questions: (1) Does green innovation have a significant direct effect on financial performance? (2) Does innovation performance mediate the relationship between green innovation and financial performance? (3) Does non-financial performance mediate that relationship? (4) Does green innovation affects financial performance through double-mediation of innovation and non-financial performance?

1) Green Innovation

Green innovation refers to the generation of new ideas, goods, services, processes, or management systems that relates to technologies for energy saving, pollution prevention, waste recycling, green product design, and green logistics services (Zhang et al., 2019). Green innovation helps firms achieve the economic goals while preserving resources and environments (Song, 2019). Thus, it can be used to deal with environmental problems meanwhile gain competitive advantages (Li et al., 2017).

2) Innovation Performance

Innovation performance is conceptualized to the extent of new product and process development of firm (Song et al., 2006). It appears in the form of obtaining new market opportunities and gaining competitive advantage through the development of new products and process (Laursen & Salter, 2006). In this study, innovation performance is defined as the degree of success of new product and process development programs of firm.

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Rediscovering patriarchal leadership : Focusing on Chinese IT companies

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Abstract

Objectives and theoretical and practical relevance The IT industry, one of the fastest-growing industries over the past 20 years, is a great driver of growing each country's economic quantitative and qualitative performance (Wang, Wei, & Lin, 2021). In the case of China, the IT industry is estimated to reach $8.1 trillion in 2020 or about 55% of China's GDP (2021). Still, the IT market is entering a hypercompetitive era due to the participation of several competitors and is constantly competing with domestic and global competitors. In particular, unlike other knowledgeintensive industries, IT companies must constantly strive in various ways to secure new competitive advantages due to the nature of industries that do not have a significant impact on borders.

One of the various factors to secure the competitive advantage of these IT companies is the leadership of the CEO. Not only does the CEO's leadership have a decisive impact on a company's management performance (Yoo & Kim, 2015; Braun et al., 2013), its importance is increasing further in today's complex decision-making environment. It is essential to reduce opportunistic behaviour and achieve organizational goals rather than personal interests through leaders who run companies in a rapidly changing market environment. In addition, based on the leader's influence, members develop their abilities and are motivated to complete the work at a higher level. Accordingly, various leadership-related studies are being conducted steadily to ensure that members take risks and perform challenges and innovations in an uncertain and competitive IT market environment.

While many existing leadership-related research focuses on the western perspective, such as neo-charismatic theories, relational theories, and contextual theories, research on patriarchal leadership has been in the spotlight recently (Farh & Cheng, 2000). Asian companies are found to have general business relationships and have various relationships such as academic ties and delays between managers and members outside the company.

Influence of board power of non-actual controller on green governance of state-owned listed companies

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Abstract

Green development is an important concept of China's economic development in the new era. As the mainstay of China's economy, how to promote green development by improving their own green governance is a key issue of current research. Based on the data of China A-share state-owned listed companies from 2011 to 2018, this paper studies the influence of non-actual controllers who are given the "right to speak" in the board of directors on the participation of state-owned listed companies in green governance. The results show that the board power of non-actual controller will significantly improve the enthusiasm of green governance of state-owned listed companies, and the greater the board power of non-actual controller, the higher the enthusiasm of green governance of state-owned listed companies. Considering the nature of non-actual controllers can affect the behavior motive, distinguishing the nature of the non-actual controllers, we found that the power in the board of directors of the non-actual controllers who is the state-owned will positively influence the enthusiasm of state-owned listed companies' green governance, but when the non-actual controllers are the non-state-owned property, such as man-made private, foreign capital and natural persons, its board of directors power will reduce the enthusiasm of state-owned listed companies' green governance. Further research shows that the positive impact of board power of state-owned non-actual controllers on green governance is more for the purpose of social responsibility, but non-state-owned non-actual controllers are more concerned with economic interests. At the same time, Government subsidies and environmental regulations can positively moderate the influence of board power of non-actual controllers on green governance. However, the degree of market competition will negatively regulate the influence of non-actual controllers' board power on green governance. This study further enrichis the relevant research on the power of the board of directors of non-actual controllers and green governance , and has a certain enlightenment significance to further improve the reform of mixed ownership and promote green governance.

Key words: Non-actual controller; The power of the board of directors; Green governance

Factors Affecting Successful Clinical Trials

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Abstract

Clinical trials are an essential process in the development of new drugs, and have characteristics of time-consuming processes and high cost. In spite of the characteristics the overall success rate of clinical trial is only 7.9%, which is a high risk of biopharma companies. Considering these characteristics of the pharmaceutical industry environment, this study investigated the definition of success of clinical trials and the factors affecting the success of sponsor initiated clinical trials. Studies related to successful clinical trials were investigated for the analysis of success factors. The success factors investigated were categorized into four factors: Quality of clinical trials, Speed of clinical trials, Relation type, and Communication. Logistic regression was performed for the measurement method of each factor by analysing 24,295 cases of Phase 1 to 4 from clinicaltrials.gov. Because of the analysis, the factors affecting the success of the clinical trials were varied according to each clinical phase and drug types (NME / Biological), and the success ratio in Quality variable affected the overall clinical trial phases. Additionally, Experience, Speed, Relation type, and Communication variables were also investigated statistically significant for the success of each phase and drug types.

Keywords: diversification framework; market diversification; product diversification; technology diversification; pharmaceutical industry; panel regression

Quadruple Compass of Business Model Design, and Innovation: Design Thinking for Creative Open Innovation, and Open Business Model

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Abstract

There are 5 factors of business model design, which are deduced from five W's and one H, and induced from 9 factor Canvas such as who (customer segmentation), What (value proposition), How(creative technological system with key activities, key resources, and key partners), Why (revenue, and cost), When and Where (customer relationships and channels). How can the business model could be expanded from open innovation dynamics? We will answer to this question in this study. First, we will expand the business model quadruple by introducing 4 different business modeler such as customer, engineer, company, and social entrepreneur. Second, we will expand the business model additionally quadruple by introducing 4 different business model innovation directions such as overshooting, bottom expansion, forward expansion, and backward expansion. Third, we will expand the business model by multiplying two quadruples which will motivate sustainable and dynamic developing and Innovating of business model. All these will be based open innovation dynamics between technology, and market including now market, protentional market, and social market.

Keywords: Quadruple Compass, Open Innovation, Business Model, Design Thinking, Dynamics

Open innovation and artificial intelligence for senior citizens

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Abstract

The purpose of this paper is to examine the role of artificial intelligence for elderly in the light of open innovation.

Knowledge about elderly needs may help to find solutions satisfying the most disparate requests in healthcare. These solutions, of course, have to be affordable for everyone. Indeed, accessibility in terms of price, availability and easy-to-use are of fundamental importance to offer equal opportunity. However, due to the presence of some barriers, healthcare services and products have represented and, in some cases, still represents a mismatch between supply and demand. These barriers are basically due to labor issues such as labor shortages and increasing cost of labor in healthcare. Firstly, labor shortage of doctors and nurses in this field is labelled as universal, underlining the global geographical extension of this issue. High turnover level, constant retirement of medical staff and fewer entrance, lower availability of skilled workers in specialized fields of healthcare represents the main critical points of labor shortage both in short-run and in long-term (Lee et al, 2019). Secondly, the payroll growth, the high labor cost of human resources involved in the sector since their work is high knowledge and experience-based and the outcomes are measured through the performance of care as well as the satisfaction of the elderly patients and the members of the staff (Dudnik et al, 2021).

Thirdly, what appears to be common across countries are the strategies of restraint in the field of public healthcare. This has led to the establishment of alternative models that marked the transition from a more state-sponsored to a customer satisfaction–oriented model where orientation is towards market (Chae & Goh, 2020). These represent the real challenges in this sector but, at the same time, the impetuous for innovation.

Findings will contribute to shed more light on artificial intelligence for ederly's use in the light of open innovation.

Smartness in tourism destinations. A literature review

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Abstract

The aim of this paper is to provide a general overview of research focused on the smart destination. Specifically, it intends to show how the topic of smart destination is developing by using a bibliometric perspective that contributes to present the state of the art of this research field, to identify the most influential researches and concepts over the last years, to single out the main gaps in the literature and to suggest future research according to the information obtained by the analysis.

Literature on the topic of smart destination has gained increasing attention, over years, in different fields (strategic management, sociology, etc.). The reason can be linked to the interest that destination management organizations and policy makers are bringing smartness through the adoption of solutions mediated by advanced ICTs into tourism. This because it permits to improve the opportunities: a) to provide well-defined personalized information and services before travelling (i.e. definition of virtual tours, augmented reality, prices, gastronomy etc.); b) to offer different tools oriented to engage with local communities and operators in co-creating memorable tourism experiences, by enhancing the value of the involvement and the immersion in local culture and traditions embedded in the visited places; and c) to share the emotion of the customized tourism experiences by stimulating the contributions and feedback and facilitating the visit of other people within destinations. Therefore, the potentiality of smartness in the tourism are stimulating the definition and the implementation of strategies, policies, activities to facilitate useful connections in smart places that characterizing the ecosystem (Bae et. al.; 2017; Hwang et al., 2018, and also to create value for all stakeholders in the destination and also to increase the competitiveness.

Keywords: Smartness; Tourism Destination Management; Open Innovation; co-creation.