(Virtual) P01 / Policy Measures and Institutional Arrangements to Govern Data-Driven Innovation for Sustainability

Topic : SCIENCE, INTERNET AND TECHNOLOGY POLICY

Chair : Masaru Yarime (The Hong Kong University of Science and Technology)

GENERAL OBJECTIVES, RESEARCH QUESTIONS AND SCIENTIFIC RELEVANCE

Data-driven innovation, including the Internet of Things (IoT), blockchain, and artificial intelligence (AI), has significant potential to address various issues concerning sustainability. These challenges range from reducing air pollution and increasing energy efficiency to maintaining resilience to natural disasters and providing accessible and inclusive health services to all. Vast amounts of various kinds of data are increasingly available from a variety of sources through sophisticated equipment and devices installed in buildings, automobiles, and infrastructure.

For facilitating data-driven innovation, effective collection, sharing, and use of data through cooperation and collaboration among stakeholders are critical. While open data access and management can contribute to creating innovation, there are many challenges that we need to address in promoting societal benefits. There are technical issues related to data, such as metadata tagging, quality control, cleaning and error elimination, and interoperability between various standards, which must be addressed to support data sharing. Stakeholders would have different interests and motivations and would not necessarily be willing to disclose or exchange data with each other . A balance needs to be considered between open and proprietary data.

Serious concerns are also raised about collecting, sharing, and using sensitive data, particularly personal data, in terms of security and privacy. A variety of ideas are proposed for institutional arrangements for data governance. The government would be in charge of governing public data, whereas platform enterprises in the private sector play a critical role in assembling and applying an increasing amount of data for various purposes. Alternatively, a data trust can be established as an independent institution to make decisions about who has access to data under what conditions, how that data is used and shared for what purposes, and who can benefit from it.

Data-driven innovation poses a particularly difficult challenge to policymaking. The speed of technological change is rapid, and the path of its evolution is not entirely predictable or explainable. That would produce a widening gap between technological change and institutional readiness. Also, various sectors, such as energy, housing, and transportation, which were not connected previously, are increasingly integrated through data in cyber-physical systems. Hence new policy approaches, such as regulatory sandboxes, would be required to incorporate the ability to learn from real-world use and experience and improve performance through adaptation.

In-depth research is required to investigate how policy measures and institutional arrangements influence the collection, management, and use of data and what impacts would be made on facilitating data-driven innovation while addressing societal concerns. The topics we discuss in this session concern the ownership of and accessibility to data, data management and governance systems, incentives to data collection, disclosure, and sharing, and the impacts of policy measures on creating data-driven innovation. Policy implications are explored for maximizing the potential of data-driven innovation while minimizing risks to individuals and communities.

CALL FOR PAPERS

This session aims to discuss theoretical as well as empirical research findings that examine the current situations concerning the collection, sharing, and use of data and the policy measures and approaches introduced to facilitate and govern data-driven innovation to address pressing challenges concerning sustainability.

Examples of data-driven innovation tackling sustainability issues can be found in various fields. In the energy sector, smart grid systems make it easier to integrate renewable energy sources and balance energy

supply and demand smoothly, improving energy efficiency and reducing CO_2 emissions. Dynamic charging systems adjust traffic flows depending upon road congestion and contribute to decreasing air pollution. For urban infrastructure, smart monitoring systems based on IoT enables us to measure winds and rainfalls precisely and strengthen urban resilience to natural disasters such as typhoons and hurricanes. In the medical sector, AI can help conduct diagnosis and treatment efficiently and accurately, providing better services for health and well-being.

Possible questions we would discuss in this session include, but not limited to, the following:

· How are various kinds of data collected, shared, and used for innovation among stakeholders?

· What incentives are provided to stakeholders with different interests and motivations to facilitate data sharing?

· What kinds of governance systems are established to manage data availability, accessibility, and ownership?

· What policy measures and institutional arrangements are introduced to deal with sensitive data, including personal data, in terms of security and privacy?

· What are the impacts and consequences of policy measures on facilitating innovation while addressing societal concerns?

Case studies in different countries and regions are particularly welcome to examine the mechanisms and processes concerning data collection, sharing, and use for innovation, which would reflect local specificities of the actors and institutions involved. Based on theoretical and empirical studies, implications and recommendations for public policy are explored to maximize the potential of data-driven innovation while minimizing risks to individuals and communities.

(Virtual) P01 / Policy Measures and Institutional Arrangements to Govern Data-Driven Innovation for Sustainability

Chair : Masaru Yarime (The Hong Kong University of Science and Technology)

Session 1Morning Session, Virtual, Policy Measures and Institutional Arrangements to Govern Data-Driven Innovation for Sustainability

Wednesday, July 7th 10:00 to 12:00 (Virtual 01)

(Virtual) The Effects of Smart-city Related Public-Private Partnership Contracts on Innovation and the Performance of Smart Cities in China

Xiaohui Jiang (The Hong Kong University of Science and Technology)

Masaru Yarime (The Hong Kong University of Science and Technology)

In the era of big data, there has been a growing trend for the government to collect and utilize various data for the purpose of the public. In particular, the data generated by the government may be used to improve multiple industries that are closely related to people's daily life such as the health industry, environmental industry, and so on. To achieve this, the government often turns to high-tech companies for help by purchasing products and services from them. As big data has just reached its tipping point in terms of smart city applications, the relevant study has not caught up with the speed of the development, especially in the influences of the smart cities. By gaining access to the public data from the government, the high-tech enterprises benefited especially from the data-abundant contracts and their innovative ability was enhanced significantly after that (Beraja, Yang, & Yuehtman, 2020). However, the cooperation between the enterprises and the government not only improves the firm's innovative technology but also provides a more convenient life for the citizens as a whole. Despite that the cooperation between the firms and government has played an increasingly important role in Chinese smart cities, there remains a paucity of literature on the relationship between the smart-city related Public-private projects (PPP) contracts and the corresponding smart city development. In this study, we want to shed light on the overall trend of the ongoing smart-city-related PPP contracts in China and to analyze their effects on the performance of Chinese smart cities. The general research questions are as follows:

(1) How does the Chinese government collaborate with the firms to collect, process, and utilize the data?

(2) What are the impacts of different smart-city related PPP contracts on the performance of Chinese smart cities?

In particular, as for the source of the data, we have extracted the time-series data about contracts from the Chinese government procurement official website from 2013 to 2020. There has been an explosive growth of relevant contracts especially after the year 2016. Our research design focuses on data-related contracts to examine their impacts on different industries including travel-industry, environmental-related industry, monitoring system, education industry, traffic management, health industry, manufacturing industries, and agriculture. We will identify the different channels of collecting data, different industries that the data belong to as well as the different levels of the government that is involved in the contracts. The main goal of our study is to figure out the impact of contracts on the performance of smart cities. In other words, what kind of contracts in which industries can improve the smart city performance such as the reduction in pollution, the ease in the traffic pressure and so on. The result is expected to find positive links between certain types of contracts and the better performance of smart cities in China.

(Virtual) Trust-Enabled Data Technology in Sustainable Smart City: The Case of COVID-19 Contact Tracing App in Hong Kong

Wilson Wai Ho Wong (The Chinese University of Hong Kong)

This paper would examine the importance of data governance in terms of policy measures and institutional arrangements to data-driven technology and innovation in sustainable smart city by using the COVID-19

contact tracing app in Hong Kong as a case study. It integrates the two sets of theories – adoption-diffusion theory (Rogers, 1995) and modalities of publicness (Cowley et. al., 2018) in its analytical framework. Smart city technologies is seldom adopted in a contextless vacuum. It is a social process that a technology must be socially accepted and adopted, especially through the fostering of trust under a well-designed system of data governance.

Through the development of an integrated theoretical framework and the case analysis of the COVID-19 contact tracing app “LeaveHomeSafe” in Hong Kong, this paper would identify the data governance framework, including its policy measures and institutional arrangements, in sustainable smart city development. Trust, in both the technology and government, is a core element of citizen acceptability of data-driven technology. Despite being a digitally advanced city, with strong distrust of government formed from a strong social movement in 2019, Hong Kong’s COVID-19 contact tracing app is introduced under the shadow of state surveillance. As a data-driven innovation, it is a controversial project in nature because citizens are quite worried that any data collected would be used for monitoring them and restricting their freedoms. This project represents a classic example of how technology is socially rejected and a good case for analysis and learning in benchmarking the best practice of data governance.

In developing its theoretical framework, this paper juxtaposes but also assimilates two interrelated theories about technology and society. Adoption-diffusion theory explains what makes the difference between rejecting and accepting a technology in society. On the other hand, one of the contributions of this paper is the inclusion and integration of the four modalities of publicness in the associated forms of assemblage in the studies of smart cities (Cowley, 2018). This new perspective of “publics” emphasizes, instead of facing and satisfying one single “public”, the concerns and perspectives of different “publics” should be addressed in sustainable and exemplary smart city development. In their study, Cowley and his colleagues specified a total of four types of “publics” or “publicness”: service-user publicness, entrepreneurial publicness, political publicness, and civic publicness.

Combining these two sets of theories or models would provide us a list of factors or principles under each publicness for evaluating the social acceptance of smart city data-driven innovation. The paper consists of the following major parts. It would conduct a critical literature review and then develop the theoretical framework as described. In applying the framework for the analysis of the COVID-19 contact tracing case, it would generate lessons and insights on what we should do and should not do about social acceptance of data-driven technology and making smart city sustainable. The paper should make a contribution to both theory and practice by bridging the gap between technological change and institutional readiness from a broader and interdisciplinary perspective for smart city development.

(Virtual) WORK AND WELL-BEING IN THE SHARING ECONOMY: EVIDENCE FROM INDIA

Akash Krishnan (Masters' Union)

Subhasis Mishra (Indian Institute of Management Calcutta)

Components of subjective well-being, viz., life satisfaction, worthwhileness, happiness, and anxiety, are intricately intertwined with individuals' income, employment, and work patterns. Despite this fact, there is a considerable dearth in understanding workers' subjective well-being in the emerging forms of engagement of Industry 4.0. As the world keeps pace and adapts to newer business models, the notion of “work” and “labour” as we know it is undergoing a dynamic transformation. This study attempts to understand the determinants of subjective well-being of workers in the sharing economy in India. While there is scanty literature about understanding the underpinnings of subjective well-being in developed countries, such work is non-existent in developing countries like India. We obtain data from a primary field survey carried out in Kolkata, an Indian city, between September 2019 to February 2020. The survey was administered on 251 radio-taxi (Uber and Ola) drivers. This study is the first of its kind in providing evidence for “sharing economy specific factors” like car segment, nature of the contractual arrangement, and multihoming. We have three key findings from our study; firstly, a higher car segment enhances life satisfaction and aggravates anxiety, the latter could potentially be connected with loss-aversion. Secondly, renters report lesser levels of Worthwhileness than their driver counterparts, potentially owing to the opportunity cost of losing out on investing in their asset. Thirdly, multihomers report higher levels of anxiety attributable to higher search and information costs.

(Virtual) Understanding Greenfield Smart Cities: Data Governance for Sustainability in Kashiwa-no-ha, Japan

Kevin Florentin (The University of Tokyo (Japan))

Masaru Yarime (The Hong Kong University of Science and Technology)

Smart cities and sustainable development has certainly trended in the past decade, and pressure is mounting in the attempt to reconcile efforts of the international community to direct our urban areas to more social and environmental conscious trajectories. The Japanese government has proven its commitment to sustainability by furthering it with their own agenda of Society 5.0, which strengthens the importance of creativity in managing and building communities of the future; furthermore, alongside this initiative is the ratification of smart city policies by the Congress of Japan. With the introduction of state of the art technology that measures almost everything about the city in unprecedented levels, there are several implications for privacy and security, and efficiency and effectiveness in understanding how data is utilized to hopefully improve the wellbeing of residents in our cities. Some smart cities are embedded into already existing communities, while some are built entirely from scratch –otherwise known as the greenfield smart city. While academic literature is abundant in the former, there is less academic literature available on the latter version of the smart city; moreover, these types of cities are criticized for data privacy issues. Because these built from scratch smart cities are initiated by the private sector, greenfield smart cities are often dismissed as marketing strategies to sell new products that have not been proven in real world settings. How is data collected in these new communities, Who uses these data? How are these used to frame problems and implement solutions for the city? This paper aims to clarify data governance in the context of smart cities built from scratch; specifically, how data is collected, managed, and utilized in Kashiwanoha, a greenfield smart city located in the periphery of Tokyo, Japan. A case study approach was used to investigate the query. First, a stakeholder analysis was conducted to outline key informants and decision makers in Kashiwanoha. Next, these key informants were interviewed to investigate how data is collected, used, and managed in the different components of the smart city initiative of Kashiwanoha. Residents of the smart city were also interviewed to provide perspectives from its users. Document analyses were conducted to understand policy implications of the smart city initiative. The paper presents a flowchart of information in the smart city and how these are treated to manage the smart city area. The paper also juxtaposes this flow of data to the policy guidelines of Kashiwanoha’s smart city initiative. Finally, some recommendations for future research will be provided on the basis of the strengths, weaknesses, opportunities and threats of data management in Kashiwanoha smart city. The outcome of this study may optimize strategic policies for smart city data management to fit the demands of real world situations. The research might consequently aid in successful implementation of smart city policies related to stakeholder participation, data sharing, and privacy protection, among others, for the rest of the smart city initiatives of Japan and beyond.

(Virtual) P01 / Policy Measures and Institutional Arrangements to Govern Data-Driven Innovation for Sustainability

Chair : Masaru Yarime (The Hong Kong University of Science and Technology)

Session 2Morning Session, Virtual, Policy Measures and Institutional Arrangements to Govern Data-Driven Innovation for Sustainability

Thursday, July 8th 10:00 to 12:00 (Virtual 01)

(Virtual) Towards an integrative framework governing the data-driven innovation in sustainability agenda – a discourse network analysis of the Chinese policy discourse

Mushan Jin (City University of Hong Kong)

Data-driven approaches are increasingly pervading the urban sustainability agenda to address the emerging challenges, including the increased energy consumption, resource depletion, air pollution, and social inequality. Embedded in the preexisting socio-economic and political context, various claims and preferences occur concerning what and how institutional arrangements are localized and shaped within the sustainability discourse by incorporating the potential of technological advances. In alignment with this cross-sectoral interconnectedness, collaborative and network governance are usually advocated in the urban data practices to achieve specific sustainability outcomes, involving a broad and heterogeneous mix of actors and the associated inter-organizational ties.

In China, the idea of data-driven innovation is widespread in sustainability-oriented initiatives and centered mainly around the advances in information technologies. Measures such as improving the openness and exchange of the ecological data are stressed in the policy discourse and often supported by a range of agencies and standardization offices. Given the interdependencies among the dynamic and complex issues, however, the scope and structure of the institutional set-up for managing sustainable development still largely remain unclear and ambiguous with continuously growing discursive struggles over concerns not only arising from the ownership and accessibility of data but also the inherent cross-boundary nature of the sustainability issues. A systematic perspective is thus needed to investigate the interplay of the values, concerned government agencies, standards, and regulations to facilitate the data-driven innovation while addressing sustainable concerns.

Discourse network analysis has been considered as a useful tool to understand the content and actors of the policies. By focusing on the discourse networks across the policy domains, source documents, and government actors, this study critically examines the existing political discourse related to data-driven initiatives and sustainability-oriented interventions, trying to recognize how these concepts are framed by the authoritative institutions interconnected in contemporary urbanism. Moreover, we identify the positions of the actively engaged actors and themes for discrete-time periods to reflect the changes in the institutional arrangements and the data-driven measures articulated in the sustainability agenda. The results indicate a growing concern in translating the potentials of data-driven approaches in sustainable transition within a broader policy context. Besides, the data-related measures in the sustainability schemes seem strongly tied to innovation and technology concerns. In general, our study advances the understanding of the potential bases for an integrative and multi-layer governance system, thereby contributing to the practical reasoning for further data-driven decision-making and actions.

(Virtual) Interoperability and recursivity of information: governability through open data in Uruguay

Kirill Neverov (Saint Petersburg State University, Russia)

Interoperability is one of the essential qualities of digital government. The movement of information lies in the essence of interoperability. It is assumed that the movement of information is a recursive process, so interoperability can also have the property of recursivity (understood as it was in Yuk Hui's "Recursivity and

Contingency"). Recursivity manifests itself in the reproduction of information from itself as we move along the links of the management network. Open data can act as a governing influence, and it does not matter who is the provider of the data: it can equally be both the state and individual citizens. In our research, we rely on the concept of governance, supplemented by socio-cybernetic and network theories. The research question is that open data in some digital government models can provide interoperability and governability. It fits with the panel's research question pretty well: open data as an institutional arrangement acts as a source of governability, raising awareness among citizens and businesses, and enabling citizens to influence government and society by participating in the creation of open data banks. The case here is Uruguayan digital platform.

The Uruguayan digital strategy is citizen-centered and offers a conceptual model called “data-driven digital transformation” that recognizes data as a key resource for public structures, accessible through digital government. Uruguay's Open Data Platform “National Directory of Open Data” (El Catálogo Nacional de Datos Abiertos) is developed on the basis of CKAN as the basic catalog platform and integrates a set of additional functions aimed at improving the user experience and the quality of published data.

Open data is at the heart of Uruguay's digital transformation, defining the architecture of the gub.uy platform. Thus, the format of digitalization of public administration in Uruguay is formed, on the one hand, through the analysis of big data and the openness of data, on the other hand, it is expressed in the form of a digital platform of the country's government.

In Uruguay, interoperability is provided by the Platform for Integration (Plataforma de Integración, PDI), which is part of the digital government platform. Its main purpose is to facilitate and promote the adoption of digital government services in Uruguay. The algorithms are based on the principle of openness and focus on the needs of both government agencies and citizens as end users, which is reflected in the service-oriented architecture of these platforms.

(Virtual) Why people are reluctant to share data, while like to benefit from data: Case study to analysis the difficulty of involving citizen as major stakeholder in public policy

Hiroko Kudo (Chuo University)

This paper investigates the question of how data would be collected from and shared among stakeholders, then utilised for policy making as well as implementation, through a failure case and a case with a certain success. The research questions are; 1) why it is not easy to collect expected data from the stakeholders as has been designed; 2) why it is not easy to share collected data among major stakeholders, often related ministries, departments, agencies, and civil society; and, 3) why we often fail to use the existing information, including data to design and/or implement public policies?

The paper first employs literature review on the related fields of researches, including psychological issues of stakeholders involved in the process as well as trust issues toward various actors and institutions, which strongly impact the willingness of stakeholders. It also takes into account of literatures exploring cognitive limitation on understanding of stakeholders in dealing with data and information (Simon, 1982; Eppler and Mengis, 2004; Etzioni, 2010; Porumbescu, 2015)., because of complexity (Sweller, 2010) and structure (Reber et al., 1998; Winkielman et al., 2003).

The research, then, explores two case studies, both related to sport and well-being policy area in UK. The first, the ticketing data, which was collected during the London Olympic Games in 2012, with an innovative goal to use it to link with data on physical activities and health conditions, aiming to improve the well-being of the citizens. However, in reality, the data has been not utilised fully to design public policy related to health, well-being, and physical activities of the citizens. The second case, which is a kind of spin-off project from the first, is “Open Active”, which uses data to get people active. Funded by Sport England and Open Data Institute, the project has been implemented by Department for Digital, Culture, Media and Sport of UK government and has been widely recognised as a success. The second, very limited in its objective compared to the first, has been successfully implemented and has registered certain results.

This research adopts qualitative analysis, including analysis of primary documents, mostly policy documents of government agencies, and semi-directive interviews to key stakeholders of the two cases. There is a limitation of single case study: however, these cases well represent the research questions to provide preliminary investigation and to generate hypotheses for further studies. Thus, the paper concludes with findings from two case studies, discussion on these findings in relation to the research questions, and finally pointing out remaining issues for possible future researches.

(Virtual) THE IMPACT OF INTELLIGENT MANUFACTURING PILOT POLICY ON ENTERPRISES' INNOVATION PERFORMANCE: EMPIRICAL EVIDENCE FROM INTELLIGENT MANUFACTURING ENTERPRISES IN GUANGDONG PROVINCE

Siqi XIE (The Hong Kong University of Science and Technology)

Masaru Yarime (The Hong Kong University of Science and Technology)

Background

In 2015, China's State Council proposed the Made in China 2025 plan, which aims to promote China as a manufacturing powerhouse and improve the overall level of scientific and technological innovation in the manufacturing industry. This policy provides top-level guidance for China's manufacturing industry. At the same time, in response to the Made in China 2025 plan, China has been implementing Intelligent Manufacturing Pilot Demonstration Special Actions since 2015. This pilot program provides policy support for the intelligent transformation of selected manufacturing enterprise. And with the policy guidance, it aims to optimize the whole value chain from design, R&D, production, management to service, significantly improve production efficiency and energy utilization, as well as reduce the operating cost, product development cycle and product defect rate of enterprises. Among all provinces in China, Guangdong is one of the best performers, ranking first in 2019 China's Intelligent Manufacturing Index.

Some previous studies have focused on the implications of factors on transformation and upgrade of enterprises. Other studies have focused on the impact of Industry 4.0 on enterprises' performance. Based on the previous studies, this paper attempts to evaluate whether the implementation of the Intelligent Manufacturing Pilot Demonstration Policy launched by the Guangdong government has led to an increase in the innovation performance of enterprises in the province, focusing on the theoretical framework of the impact of intelligent manufacturing on enterprise performance.

Research Significance

This research is significant for the following levels.

1) From the international level, China's moving to high-value production chain process has a linkage impact on other "catch-up" economic entities. China offers a new pattern for newly emerging countries in Asia to catch up with the incumbents and even become the front-runner in the specific industry.

2) From the national level, Therefore, it is critical to implement intelligent manufacturing program to enhance innovation competitiveness and to change the position of Chinese manufacturing enterprises in the global value chain within the windows of opportunity.

3) From the industrial level, this research provides a guideline for the non-intelligent manufacturing industries to follow particular upgrade pathways. Intelligent manufacturing can help enterprises to allocate various resources continuously, quickly and flexibly, so that they can quickly respond to changes in the market environment and gain competitive advantages.

4) From the policy-making level, this study will examine whether the implementation of smart manufacturing pilot demonstration policies in Guangdong Province since 2015 has positive effects on enterprise innovation and also test and heterogeneity effects. This will help us to propose specific policy recommendations to further improve the policy design by addressing the main problems of the current policy.

Research Question

My specific research question is "Whether the policy of Intelligent Manufacturing Pilot Demonstration Project help to improve the innovation performance of enterprises?"

Methods

This study will take Guangdong Provincial Intelligent Manufacturing Pilot Demonstration Program as research subject. Based on the firm-level panel data of 2010-2020 Guangdong listed manufacturing enterprises, this study will adopt Difference-in-Difference estimation to evaluate the policy effectiveness and major problems in the design and implementation of Intelligent Manufacturing Pilot Demonstration program.

(Virtual) P01 / Policy Measures and Institutional Arrangements to Govern Data-Driven Innovation for Sustainability

Chair : Masaru Yarime (The Hong Kong University of Science and Technology)

Session 3Afternoon Session, Virtual, Policy Measures and Institutional Arrangements to Govern Data-Driven Innovation for Sustainability

Thursday, July 8th 14:00 to 16:00 (Virtual 01)

(Virtual) Personalised nutrition technologies: a new paradigm for European public policy in a digital transformation era.

Rachel Elands (Maastricht University)

Personalised nutrition technologies: a new paradigm for European public policy in a digital transformation era.

Juliane Scholtyssek, Rachel J.J. Elands.

Department of International Health and Care and Public Health Research Institute (CAPHRI), Maastricht University, the Netherlands

Paper Project: Patient?centred care is the foundation for current dietetics practice. Direct-to-consumer genetic tests have emerged as a trend in the consumer nutrition area resulting from the individualisation of dietetic guidance. Digital platforms are already delivering personalised experience for the user based on profiling of an individual’s demographics, genotype, nutritional intake and lifestyle behaviours. Therefore, there is an urgency with which cross-national policy convergence is needed to regulate upcoming personalised ‘algorithm?based’ patient-centred care platforms, apps and other technologies.

Research question: How should European public policies anticipate to the regulation of emerging direct-to-consumer genetic tests?

Design: A discourse analysis is presented to identify the state of the evidence for regulations of personalised ‘algorithm?based’ approaches at the European public policy level. Policy documents were located via EUR-Lex, the European Commission and the European Parliament Public Register of Documents. Additionally, Web of Science and PubMed were search up to 1 June 2020.

Results: This discourse analysis indicated that current European public policies pertain to the regulation of platforms for population-based nutritional advice. European public policies on regulating direct-to-consumer genetic tests have not been systematically implemented and evaluated. Whereas, current platforms that provide these services remain unregulated, ethical concerns have been raised pertaining to data privacy. Besides, scientific evidence supporting the effectiveness of individualised dietetic practices based on genetic data is lacking. Yet, more research investment in personalised ‘algorithm?based’ approaches are foreseen. Hence, public policy at the European level may be necessary to regulate direct-to-consumer genetic testing. Public policy at the European level could regulate direct-to-consumer genetic tests by existing European directives for in vitro medical devices.

Conclusion: European policies regulating direct-to-consumer genetic tests are recommended as this field is developing rapidly due to technological advancements. Policy at European level could regulate genetic testing for the use as direct-to-consumer genetic tests by employing the directive for in vitro medical devices. However, more research is needed to determine how European public policies could shape the regulation of direct-to-consumer genetic tests as well as future innovations within the field of personalised ‘algorithm?based’ patient-centred care for current dietetics practice.

The current paper suits the panel for 'Science, Internet and Technology Policy - Policy Measures and Institutional Arrangements to Govern Data-Driven Innovation for Sustainability' given the urgency with which cross-national policy convergence is needed to regulate upcoming personalised ‘algorithm?based’

patient-centred care platforms, apps and other technologies.

(Virtual) The Sustainability Action Platform: a knowledge management mechanism for advancing global sustainability transitions?

Amy Burnett (University of Surrey)

Co-authors:

Jenna A. Lamphere

Thomas Reuter

Oliver Bream Mclntosh

Ira Feldman

Emmanuelle Vital

Despite the importance of global accords such as the Paris Agreement and UN 2030 Agenda the most productive solutions to the climate crisis are often occurring at the local level. Meanwhile, the COVID-19 pandemic presents new opportunities to advance sustainability scholarship, innovation, collaboration and action to promote a green recovery. As a diverse group of scholars, practitioners and policymakers, we are developing a virtual platform to accelerate a green recovery and transition towards sustainability. In this session, we propose our ‘Sustainability Action Platform’ (SAP), an open-source and dynamic global online data management tool which allows local government, communities and businesses to exchange ideas and experience with innovative actions aimed at advancing sustainable actions (see: http://www.sustainabilityactionplatform.org).

The SAP provides a much-needed mechanism for the global exchange of local innovations. As an integrative system, the SAP aims to facilitate alignment between local strategies and the SDGs through a systemic change approach to promote a resilient local economy by integrating incentives to quantify and share sustainable actions. It also seeks to generate a wealth of data on sustainability actions around the world, which are valuable for scientific analyses and the generation of improved empirically-based system change models. The SAP’s integration of scholarship and praxis is innovative, advancing both scientific understanding and local decision-making in climate governance, notably in deepening insights into sustainability transition pathways.

Through the application of cutting-edge digital technology, such as blockchain and visual analytics, the SAP will collate and synthesize user-generated content by theme and region. Additionally, it will enable reporting and benchmarking of progress against existing SDG frameworks, while also enabling local-level customization of indicators, sustainability initiatives and cultural learning that promote reinforcing sustainability benefits. The SAP will also include measures to monitor and analyze areas that prevent the promotion of sustainable benefits or might contribute to negative outcomes that thwart sustainability benefits.

We will present our research outlying a comparison between SAP and other sustainability knowledge management solutions and the potential for wide-ranging indicator synthesis at different scales, drawing on insights from climate governance, sustainability transitions and knowledge management.

As a nascent initiative, the SAP team is seeking to outline the benefits of this model and, using extant research and crowdsourcing participant insights, will explore its opportunities and potential limitations as a mechanism for sustainable transformation at different scales and engage participants in reflections on its utility and potential for scaling-up. These include issues relating to data management, inclusive partnerships with the Global South, leveraging existing knowledge platforms, and its potential to be rolled out at the community level, e.g. via an app. In particular, we invite a critique on the SAP as to how data-driven innovation can become appropriately embedded in national and local knowledge management systems and what mechanisms would be required for a global platform to be effectively regulated while at the same time being a user-driven approach. We will also explore whether incentives in one context are appropriate for another context, and what a universal greening incentive might look like.

(Virtual) The Struggle between Digital Platforms and States within the Concept of "Net Neutrality."

Dilek Dede (Istanbul University)

The purpose of the study is to manifest and to understand the struggle between Digital Platforms and states

that appear as regulatory challenges conceptualized as "net neutrality." Regulatory challenges for the digital governments as the apparatus of the shifting dimension of public administration field in Turkey and globally. The study concentrates on the struggle between digital platforms and states within the concept of "net neutrality" frequently discussed in the global agendas.

The investigation begins with the scanning and brief review of digital governments' regulatory challenge in terms of net neutrality conceptualization in literature after the literature scanning has encountered the studies that have set on the conceptual aspects of net neutrality. (Cheng et al. 2011, Wu 2006, Hahn & Wallestein 2006, Kramer et al. 2012, Ehrlich 2014, Silverman 2017.)

The focal question is how can be explained the struggle between digital platforms and national states within the concept of "net neutrality that recently discussed in both entire Europe and specifically Turkey? In methodology, it is a descriptive case analysis. The selected cases are limited, single cases with Google, Whatsapp, and Facebook platforms. This study contributes to the literature in terms of evaluating and elaborating the "net neutrality" concept through the cases.

The study is constructed in two sections. In the first section, the studies scanned in literature and the conceptual framework of net neutrality briefly assessed. Instead of giving every detail of literature, some specific conceptual nuances coherent with selected cases are concerned.

In the second section, the selected cases on net neutrality have been evaluated and scrutinized. In the discussion and conclusion section, the selected cases are categorized into competition-oriented disputes and privacy-oriented disputes. Therefore, states' approaches have been remarked and assessed in terms of the net neutrality conceptualization.

The concept note of the session entitled "Policy Measures and Institutional Arrangements to Govern Data-driven Innovation for Sustainability" indicates the essential position of the governments and platform enterprises for operating, disseminating, and storing for various purposes. Furthermore, the session highlights the critical role of elaborated and well-structured investigations to manifest the implications of policy measurements and institutional arrangements of "collecting, managing, and using data" with consulting social concerns. In this sense, the submitted study offers to encompass the struggle between digital platforms as private enterprises and states within the concept of "Net Neutrality" with scrutinizing selected single studies that have fulfilled the global agenda in recent days.

(Virtual) Assessing Data Governance by Institutional Analysis Development Framework

Fernando Filgueiras (Federal University of Goiás)

Data governance is the construction of rules and responsibilities for the organization and implementation of data policies that strengthen decision-making and accountability concerning data understood as organizational resources. Governance of data in governments involves the constitution of data as essential "commons" for public governance consideration and involves collective action dilemmas. Data governance seeks to solve the collective action problems involved in collecting and exploiting data for the generation of business models and processes of the digital transformation of public governance. Data governance is the decision-making process and the construction of authority to specify decision rights and accountability that encourage the desired behavior concerning the use, security, integrity, and data availability. The authority constitutes policies, standards, and guidelines consistent with organizational and political objectives. Data governance involves collective action problems of the prisoner's dilemma type and should be based on institutional cooperation processes to maintain the sustainability and resilience of data understood as commons. In this sense, data governance frameworks must work with the perspective of reducing the dilemmas of collective action and fostering collaboration between the various actors so that the process of digital transformation can result in benefits for society.
Based on Brazilian municipalities' experience, the purpose of this paper is to analyze the data governance dilemmas that emerge from the process of collecting, storing, processing, and sharing data for the construction of smart city projects. This paper focuses on the data governance process, with the expectation of understanding the current policy framework for use, security, integrity, and municipal data availability that foster smart city projects. In addition to building a framework for analyzing municipal data governance, we will promote a set of interventions built on the design of data policies to collaboratively solidify the digital transformation projects of municipal governments and smart city projects. Brazilian municipalities' reality is diverse and varies widely in the available information technology infrastructure that supports smart city projects in Brazil. We will use the Institutional Analysis and Development Framework background by Elinor Ostrom to identify the dilemmas of data governance, the criteria for collective action, and institutional design initiatives of data governance.