

Learning from Megadisasters: Lessons learnt from the Great East Japan earthquake and tsunami, by Federica Ranghieri

On March 11, 2011, an earthquake of magnitude 9.0 occurred in the Pacific Ocean off the coast of Japan's Tohoku region. The quake shook the ground as far away as western Japan and lasted for several minutes. A half hour later, a tsunami of unprecedented force broke over 650 kilometers of coastline, toppling sea walls and other defenses, flooding more than 500 km² of land, and washing away entire towns and villages. The devastation left around 20,000 people dead or missing, with most of the deaths caused by drowning. The tsunami leveled 130,000 houses and severely damaged 260,000 more. The areas worst hit were the Fukushima, Iwate, and Miyagi prefectures. This article investigates the ability of the Japan disaster risk management (DRM) system to cope with such megadisaster and to prevent even stronger impacts. Based on a project started in 2011 and ended in 2014, sponsored by the Government of Japan and the World Bank, which collected and analyzed information, data, and evaluations performed by academic institutions, nongovernmental organizations, government agencies, and the private sector, the article explains what worked and what worked less well on March 11, all with the objective of sharing Japan's knowledge on disaster risk management (DRM) and postdisaster reconstruction with countries vulnerable to disasters.

Keywords: disaster risk management, risk assessment, megadisasters

JEL classifications: Q54, Q58

Introduction, by Marja Toivonen

Sustainability has become increasingly important in research, policy and organizational strategies since the 1980s (Pope et al., 2004). Today, many activities in different sectors and in countries all over the world are striving for sustainability, and corresponding research programs have been launched. An important characteristic is the broad interpretation of the sustainability concept and the aim to integrate different domains: energy resources, water, economic development, health, lifestyle, etc. (Kajikawa, 2008). The emphasis is on the balance between the economy, society and the environment (Komiya and Takeuchi, 2006).

This special issue is composed to provide some additional insights into the frameworks and findings based on this broad view. It highlights need for new research approaches in terms of both methodology and conceptual clarifications, and it highlights need for practical activities among both businesses and public organizations. A core message is that the development of sustainability should not be considered one-sidedly from the technological perspective, but services and social issues are tightly linked to the whole.

Keywords: sustainability policy, innovation, environmental services

JEL classifications: O18, O33, Q56

Economics and policy of energy and the environment, n. 3/2014

A system dynamic and multi-criteria evaluation of innovations in environmental services, by Kirsi Hyytinen, Sampsa Ruutu, Mika Nieminen, Faïz Gallouj and Marja Toivonen

The purpose of this paper is to study the challenge of evaluation in the context of systemic innovations in which services are a core element. The paper argues that the traditional evaluation methods and measures are not able to capture neither the diversity of innovations in services and systems nor the multifaceted dimensions of performance resulting from these innovations. In order to contribute to a more purposeful evaluation practices and methods, a new combinatory approach is suggested based on multi-criteria and system dynamic perspectives. This approach is illustrated in the context of environmental services, using an environmental data platform as a case example.

Keywords: multi-criteria evaluation, system dynamic, service innovation, systemic innovation, environmental services, environmental data platform

JEL classifications: O33, O44, Q56

The environmental impact of economic activity on the planet: The role of service activities, by José Aureliano Martín Segura and José Luis Navarro Espigares

In these times when The United Nations organization is discussing the post-2015 agenda, this paper provides an updated quantification of the environmental impact index and its evolution during the last fifty years. Based on the theoretical model of consumption equations initiated by Paul Ehrlich and John Holdren in the seventies, an updated and global environmental impact index estimate was carried out. The geographic scope of the study included all countries for which data are published in the database of the World Bank for the period 1961-2012.

Once it was noted the growing evolution of this index, the secondary objectives of the study were focused on the analysis of the relationship between the calculated impact index and two variables. The first variable is linked to one of the main consequences of environmental degradation, the health of the population – estimated by the mortality rate. The second variable is linked to one of the main proposals to mitigate the environmental impact solutions, green investments – estimated by the volume of investment in R&D.

These relationships have been studied by two separate econometric panel data models, and the results showed in both a positive and statistically significant relationship of impact index on mortality and investments in R&D.

Finally, policy recommendations steer action towards green investments and the practice of business models based on social responsibility.

Keywords: environmental impact, mortality rates, green investments

JEL classifications: Q510, I130, Q550

Innovation in Brazilian landfills: A ServPPIN perspective, by Silvia Cruz, Sônia Paulino and Faïz Gallouj

This paper is devoted to the discussion of innovation promotion in urban solid waste services through Clean Development Mechanisms (CDM) projects, emphasizing the participation of civil society. The empirical context is based on the municipal solid waste sector in Brazil, taking into account six landfill CDM projects located in the São Paulo Metropolitan Area. The discussion is based on the ServPPIN concept (public-private innovation networks in services). It focuses on the characterization of the landfills selected and on the identification of the stakeholders involved with these landfills, pointing out any

participation gaps. The studied context confirms the centrality of multi-agent participation, addressed by the ServPPIN analytical approach, highlighting the wide involvement of several agents, and in particular, the issue of interaction with users. The results indicate that the participation of associations and cooperatives surrounding landfills is still marginal. Bringing this theoretical (ServPPIN) and empirical research (landfill CDM project) together, one can identify a relevant factor affecting the establishment of basic conditions for service innovation converging with the local co-benefits generation: a weak interaction with users.

Keywords: ServPPIN, innovation networks, innovation in public services, clean development mechanism, solid waste sector

JEL classifications: Q560, Q540, Q530.

The sustainable city: Between symbols and paradoxes, by Isabelle Bouchardy, Marc-André Méquignon

The ideas presented here focus on the concept of a sustainable city delimited by its habitats and revolves around main three contradictions: the heterogeneity of temporal deadlines, the inability to exceed the dimensions related to the technical specifications of buildings, an increase of global urbanization which repudiates all ecological considerations: irreversible impact that penalizes sustainable development are analyzed in regard to the paradigms of mediation and intermediation.

The comparison of these different themes, from the most abstract to the extremely practical or concrete and even experimental concepts create problems a priori for some unknown reason and react poorly to analysis. The scope will be defined before attempting to apply it to the city. Then, a diachronic approach to sustainable development (SD) in relation to the city will shed light on the contradictions, but also on any aporias. Finally, part three shall conclude that the city or the urban area, as a space and building producer, will have to accept the consequences of these contradictions while generating solutions opposite to those that should be respected to meet SD criteria and in keeping the three paradoxes in perspective. In direct reference to SD, we shall try to show the consequences of the application of these various principles to a city reclassified as a “sustainable” city.

Keywords: sustainability, city, habitat, territory, socio-ecology

JEL classifications: Q17, R18, P16

Innovation logics and energy consumption in the service sector: A characteristics-based approach and its application to food retail services, by Charlotte Fourcroy

The contribution of services to wealth and job creation in contemporary economies continues to increase, as does their demand for energy. However, the energy issue as it relates to services has been little explored in the literature, with the exception of ICT and transport. The still dominant hypothesis is that of a sector whose output is intangible and whose energy consumption is therefore low. Similarly, while the literature on innovation in services has undeniably grown over the past two decades, the question of the relationship between innovation in services and the evolution of the demand for energy has been neglected. This article is devoted to an analysis of this relationship. The aim is to develop an analytical framework capable of identifying the consequences in terms of energy of different innovation logics in services. The framework is then applied to the case of food retailing.

Keywords: service industries, service innovation, energy consumption

JEL classifications: L80, L81, Q59

Large-scale events and sustainability: The case of the universal exposition Expo Milan 2015, by Fabio Iraldo, Michela Melis and Gaia Pretner

In the last fifteen years, the organization and staging of large-scale events have been progressively included in the sustainability debate. As today, it is widely accepted that such events may have multiple impacts on – and leave an important legacy to – the host cities and regions, as there can be structural, economic, environmental, social, cultural and political impacts. Literature and empirical evidence on the multiple legacies of events have mainly focused on large-scale sport events so far. The debate on the role and contribution of Universal Expositions to long term urban and local development strategies is instead relatively young.

This article seeks to contribute to the literature that assesses the impacts of large-scale “one-off” events, by taking the forthcoming Universal Exposition of Milan in 2015 as an example to further explore the conditions and requirements that may eventually bring true meaning to the term “sustainable event”. The analysis is mainly based on the Expo Milan 2015 experience in sustainability reporting activities, whose goal is to measure, assess and communicate the social and environmental performance of the organising company, the impacts on the territory of the activities that are being carried out, and the level of engagement and dialogue with the stakeholders involved.

Keywords: sustainability management, wide-scale events, sustainability reporting

JEL classifications: Q56, M14, M41

The role of sustainability policy in influencing service innovation. A case study of Changzhou BRT system, by Chaoren Lu

Purpose. The main aim of this paper is to assess and analyze the role of sustainability policy in influencing service innovation practices in the context of public transport. The intention is to understand the critical dimensions related to sustainability policy driven service innovation. The critical dimensions mainly focus on the relationship between innovation and policy, the challenges, competences and opportunities driven by sustainability policy.

Design/methodology/approach. The paper is of an explorative nature. Critical case study method is adopted in this paper to understand the role of sustainability policy in service innovation.

Findings. The study reveals that national sustainability policy framework drives the formulation and implementation of sustainable service innovation as a tool to achieve sustainable public transit system. The sustainability policy context in terms of responsibility, power and resource integration creates shared-platform that induces service innovation, which create value co-creation opportunities to the customers and other stakeholders.

Research limitations/implications. The single case-study design of the present research does not enable empirical generalizations to be made.

Contribution/value. The paper makes an original contribution to the study of sustainable and innovative public transit by explicitly linking the adoption of sustainability policy and its role in service innovation and value co-creation embedded on social and environmental perspectives.

Practical implications. National policies often cannot influence local/urban transport directly, but become effective tool towards service innovation and value co-creation.

Keywords: sustainable public transit, sustainability policy, service innovation, value co-creation, bus rapid transit

JEL classifications: L88