

#RegInnPol18

*Responsible Innovation and Regional Development –
Expanding the research agenda*



Western Norway
University of
Applied Sciences

Important information

Internet access

Network name: HVLguest

Username: innovasjon

Password: 13693

Conference dinner

Hotel Norge (Nedre Ole Bulls plass 4), Thursday at 19.30

Lunch

Is served in the cafeteria at Campus (in a designated area)

Rooms in use

Plenary sessions: «Mimes Brønn»

Parallel sessions: F105, F106, F203, F204

Campus map

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Program

Thursday		Room(s)
8.00-9.00	<i>Arrival and registration</i>	
9.00-10.00	Plenary 1 - Prof. Andrés Rodríguez-Pose: <i>Innovating in economic peripheries: Europe, North America and China in comparison</i> Chair: Stig-Erik Jakobsen (Western Norway University of Applied Sciences)	<i>Mimes Brønn</i>
10.15-11.30	Parallel sessions 1 Track B "Green" regional development, environmental sustainability and policy (F105) Track I R&D, knowledge and universities in regional development (F106) Track F Proximities, agglomerations and networks (F203) Track G Regional policy development, implementation and assessment (F204)	<i>F105, F106, F203, F204</i>
11.30	Lunch	
12.30-13.15	Special Plenary Session 1 – Dr. Elvira Uyarra and cluster facilitators from GCE Subsea and NCE Maritime CleanTech: <i>Green transformation of clusters? How clusters (could) facilitate green industrial restructuring</i> Chair: Jens Kristian Fosse (Western Norway University of Applied Sciences)	<i>Mimes Brønn</i>
13.30-14.45	Parallel sessions 2 Track B "Green" regional development, environmental sustainability and policy (F105) Track I R&D, knowledge and universities in regional development (F106) Track F Proximities, agglomerations and networks (F203) Track G Regional policy development, implementation and assessment (F204)	<i>F105, F106, F203, F204</i>
15.00-16.15	Parallel sessions 3 Track B "Green" regional development, environmental sustainability and policy (F105) Track I R&D, knowledge and universities in regional development (F106) Track G Regional policy development, implementation and assessment (F203) Track J Special session (open to all): EURIPER: EU innovation policies and peripheral regions (F204)	<i>F105, F106, F203, F204</i>

16.15	Sandwiches and fruit, coffee and tea	
16.30-17.45	Parallel sessions 4 Track A Innovation in new spheres – beyond an economic rationale? (F106) Track B "Green" regional development, environmental sustainability and policy (F105) Track C Regional industry development: systemic approaches (F203) Track J Special session (open to all): EURIPER: EU innovation policies and peripheral regions (F204)	F105, F106, F203, F204
19.30	Conference dinner ('Chaired' by Anders Haugland, BTO – Bergen Technology Transfer)	Hotel Norge
Friday		
9.00-10.00	Special Plenary Session 2 – Arne Isaksen, Markku Sotarauta, Rune Dahl Fitjar & Helen Lawton Smith: <i>The 'RIS-book' in honour of Bjørn Terje Asheim</i>	Mimes Brønn
10.15-11.30	Parallel sessions 5 Track A Innovation in new spheres – beyond an economic rationale? (F106) Track C Regional industry development: systemic approaches (F203) Track D Digitalization, new business models and organizational practices (F204)	F106, F203, F204
11.30	Lunch	
12.30-13.45	Parallel sessions 6 Track B "Green" regional development, environmental sustainability and policy (F105) Track C Regional industry development: systemic approaches (F203) Track D Digitalization, new business models and organizational practices (F204) Track G Regional policy development, implementation and assessment (F106)	F105, F106, F203, F204
14.00-14.45	Plenary 2 – Prof. Arnt Fløysand: <i>Exploring and exploiting the trinity of innovation</i> Chair: Inger Beate Pettersen (Western Norway University of Applied Sciences)	Mimes Brønn
14.45-15.00	Closing address	Mimes Brønn

Parallel sessions 1 – Thursday 10.15-11.30

Track B "Green" regional development, environmental sustainability and policy	Track I R&D, knowledge and universities in regional development	Track F Proximities, agglomerations and networks	Track G Regional policy development, implementation and assessment
Room F105 <i>Chair: Jan Ole Rypestøl</i>	Room F106 <i>Chair: Marco Bellandi</i>	Room F203 <i>Chair: Elvira Uyarra</i>	Room F204 <i>Chair: Stig-Erik Jakobsen</i>
Trippl, M; Isaksen, A.; Baumgartinger-Seiringer, S.; Frangenheim, A. & Rypestøl, J.O Challenge-led regional restructuring and new path development: towards a research agenda	Ploszaj, A.; Olechnicka, A. & Celinska-Janowicz, D. Core-periphery relations in international research collaboration and their implications for regional development policy	Germain, E. & Moghadam-Saman, S. Providing doctoral skills to the regional labour market: Cases of University relations with Science Parks	Fitjar, R. D.; Benneworth, P. & Asheim, B.T Towards Regional Responsible Research and Innovation?
Sæther, B. Green transitions, innovation and the need for sectorial approaches	Høvig, Ø.S & Berge, Ø.M Different types of universities and their precondition for entrepreneurship: Towards a differentiated approach to student entrepreneurship programmes	Tuitjer, G. Innovation biographies of sustainable craft-food products from peripheral regions	Caloffi, A.; Freo, M.; Ghinoi, S.; Rossi, F. & Russo, M. Financial incentives, behavioral incentives or both? Some evidence from the analysis of small business policies supporting the acquisition of knowledge-intensive services
Fuenfschilling, L.; Baumgartinger-Seiringer, S.; Miörner, J. & Trippl, M. Institutional infrastructure for innovation-based industrial path transformation	Young, M.; Pinheiro, R. & Šima, K. Assessing the role of higher education institutions in peripheral regions: From university ambiguities to analytic eclecticism	Solheim, M.C.W.; Herstad, S & Engen, M. The imprints of urban location on human resources and innovation in knowledge intensive services	Karlsen, J. & Larrea, M How policy can enhance the transformation of University towards the third mission: A case study from a transformation process in the Basque Country
Sotarauta, M. & Suvinen, N. How Does the Green Economy Grow? Institutional Agency for Green Path Development	Vindenes, K. A pragmatic approach to create cooperation between industry and research institutions	Brustenga, J. G. The new role of local scale in research & innovation systems	Ljunggren, E. & Haugum, M. When the answer is «gender balance», what is the question? A policy analysis of a Norwegian regional innovation program

Parallel sessions 2 – Thursday 13.30-14.45

Track B <i>"Green" regional development, environmental sustainability and policy</i>	Track I <i>R&D, knowledge and universities in regional development</i>	Track F <i>Proximities, agglomerations and networks</i>	Track G <i>Regional policy development, implementation and assessment</i>
Room F105 <i>Chair: Johan Miörner</i>	Room F106 <i>Chair: Randi Taxt</i>	Room F203 <i>Chair: Marte Solheim</i>	Room F204 <i>Chair: Elisabeth Ljunggren</i>
Apa, R.; De Noni, I.; Orsi, L. & Sedita, S.R. Regional innovation, well-being and quality of life: evidence from Europe	Kvitastein, O. A. & Aarstad, J. The effects of early entrepreneurial R&D support	Calignano, G.; Fitjar, R. D. & Huber, F. Reputational proximity: Towards a new concept in the geography of innovation?	Tsai, H. An Analysis of Innovation Policy in Taiwan
Aarstad, J. & Jakobsen, S.E. Environmental sustainability strategies as a function of firm- and regional-level characteristics	Bergesen, O. & Tveterås, R. From knowledge to innovation: Firms' internal skills, collaboration choices and innovative activity	Makkonen, T. & Mitze, T. The relationship between internal and external knowledge sources for firm productivity	Nordling, N. Collaborative and participatory regional economic development: platform-based innovation policy in six Finnish cities
Susur, E.; Hidalgo, A. & Chiaroni, D. A cross case study on regional circular economy development: A strategic niche management perspective	Evers, G. The hiring dynamics following a university industry-collaboration	Haus-Reve, S. & Cooke, A. Understanding the Regional Drivers of Productivity Benefits from Immigrant Diversity: Evidence from Norway's Variation in Regional Institutional Inclusiveness	Serralta, L. M. P. & Romero, G.F. Governance and innovation regional policy in Chile
Østergaard, C.R.; Holm, J.R.; Iversen, E.; Schubert, T.; Skålholt, A. & Sotarauta, M. Green skills and environmental innovations in the Nordic countries	Muñuzuri, J.; Onieva, L.; Guadix, J. & Cortés, P. Promoting R&D activities in the aeronautical cluster of Alentejo-Andalusia	Brynthe Lund, H. & Steen, M. Changing GPNs: Manufacturing reshoring due to Industry 4.0?	Zubeldia, E. A. Innovation camps: Valencian experience

Parallel sessions 3 – Thursday 15.00-16.15

Track B <i>"Green" regional development, environmental sustainability and policy</i>	Track I <i>R&D, knowledge and universities in regional development</i>	Track G <i>Regional policy development, implementation and assessment</i>	Track J <i>Special session (open to all): EURIPER: EU innovation policies and peripheral regions</i>
Room F105 <i>Chair: Arne Isaksen</i>	Room F106 <i>Chair: Ole Bergesen</i>	Room F203 <i>Chair: Arnt Fløysand</i>	Room F204 <i>Chair: Manuel González</i>
De Laurentis, C. Mediating the form and direction of regional sustainable development: the role of the State in renewable energy deployment in selected regions	Salomaa, M. Entrepreneurial Architecture and Rural Universities: The Case of Lincoln	Asheim, B. T. The role of clusters in new path development in smart specialisation strategies	Gancarczyk, M.; Najda-Janoszka, M. & Gancarczyk, J. Regional Innovation Policies as Enabling Constraints for Smart Specialization: The Case of Malopolska, Poland
Martin, H.; Martin, R. & Zukauskaitė, E. The role of demand in green regional development - examples from the food industries in Värmland and Scania, Sweden	Bellandi, M.; Caloffi, A. & De Masi, S. Entrepreneurial and engaged academics in a changing university: A critical view from Italy	Koschatzky, K.; Kroll, H. & Stahlecker, T. Innovation-based regional structural change - A new regional policy paradigm in Germany	Losurdo, F. & Dileo, I. Regional innovation policy in a peripheral area. The case of Apulia region
Frangenheim, A. Distributed agency for challenge-driven path development: Towards sustainable public procurement of food in Vienna	Helgesen, C.; Heldal, I.; Rydland Olsen, N. & Pettersen, I.B Entrepreneurial Universities: Establishing and Supporting Interdisciplinary Educational Projects	Coenen, L.; Goedegebuure, L.; Veldhuizen, C. & Wilson, B. Smart Specialisation in Australia: policy mobility or experimentalist policy?	González-López, M. Understanding policy learning in regional innovation policies: lessons from the Galician case
Rehfeld, D. From Technology Show-Case to Real Laboratory – Lessons from the Transition Project “Innovation City” Bottrop	Taxt, R. E.; Robinson, D. K.R.; Schoen, A. & Fløysand, A. Research institutions and their economic relationships in regional innovation ecosystems	Suwala, L. & Kulke, E. Transitions in Urban/ Regional Innovation Policies and their Locations since the 1990s - The case of Berlin	Strickert, S. Towards a new mode of research dialogue in regional innovation policy

Parallel sessions 4 – Thursday 16.30-17.45

<p>Track A <i>Innovation in new spheres – beyond an economic rationale?</i></p>	<p>Track B <i>"Green" regional development, environmental sustainability and policy</i></p>	<p>Track C <i>Regional industry development: systemic approaches</i></p>	<p>Track J <i>Special session (open to all): EURIPER: EU innovation policies and peripheral regions</i></p>
<p>Room F106 <i>Chair: Miren Larrea</i></p>	<p>Room F105 <i>Chair: Markku Sotarauta</i></p>	<p>Room F203 <i>Chair: Nhien Nguyen</i></p>	<p>Room F204 <i>Chair: Roger Normann</i></p>
<p>Owren, T. Synthesizing a theoretical framework to help a complex social innovation grow</p>	<p>Theiventhran, MeeNilankco Gz Energy transition in transitional societies: The question of equity</p>	<p>Plechero, M.; Chaminade, C.; Kulkarni, M. & Parthasarathy, B. Explaining the past, predicting the future: the influence of regional trajectories on innovation networks of emerging industries</p>	<p>Jon P. Knudsen Devolution in Norway - A reform in the making</p>
<p>Wanzenböck, I. & Frenken, K. Turning societal challenge-oriented innovation policy on its head: The implementation of new research and innovation policies from a geographical perspective</p>	<p>Kyllingstad, N. Mechanisms and barriers of regional industrial path development – the case of the Centre for Research-Based Innovation Offshore Mechatronics (SFI OM)</p>	<p>Bækkelund, N.G. Rural restructuring and path evolution – a micro level approach</p>	<p>Sánchez-Carreira, M. del C.; Peñate-Valentín, M.C.; Varela-Vázquez, P. & González-López, M. Public procurement of innovation in health. The experience of Galicia</p>
<p>Loga, J. & Sætre, H. Developing a national and regional policy on social entrepreneurship and social enterprises in Norway</p>	<p>Rypestøl, J.O. The role of system level entrepreneurs in processes of regional transformations</p>	<p>Baumgartinger-Seiringer, S.; Miörner, J. & Tripl, M. Towards a stage model of regional industrial path transformation</p>	<p>Varela-Vázquez, P.; González-López, M.; Sánchez-Carreira, M del C. The EU innovation policy and the cohesion policy for innovation: a zero sum game?</p>
<p>Rehfeld, D.; Butzin, A. & Terstriep, J. Social, Economic and Political Innovation: In Search of an Integrated Innovation Policy</p>	<p>Gjoesaeter, A.S.; Nesse, J.G.; Årethun, T & Kyvik, O. Business models as conceptual framework for sustainable value creation: Strategic and operative leadership challenges</p>		

Parallel sessions 5 – Friday 10.15-11.30

Track A <i>Innovation in new spheres – beyond an economic rationale?</i>	Track C <i>Regional industry development: systemic approaches</i>	Track D <i>Digitalization, new business models and organizational practices</i>
Room F106 <i>Chair: Dieter Rehfeld</i>	Room F203 <i>Chair: Carmen Alexandra Armijos</i>	Room F204 <i>Chair: Sini Kahilaniemi</i>
Estensoro, M & Larrea, M. Action research for Industry 4.0. policy: democratization and digitalization hand in hand	Nguyen, N.; Mariussen, Å. & Ørding Hansen, J. Building Self-Sustaining Research and Innovation Ecosystems in Europe through Responsible Research and Innovation	Mæhle, N. Green crowdfunding: New business model for sustainable value creation
Tørseth, T. Public sector innovation. When LEAN meets professionalization.	Færøvik, K.H. Cross-industry innovation processes for oil and gas firms following a market downturn	Christensen, J.L. Crowdfunding – dissolving the geography of finance?
Thapa, R.K. & Iakovleva, T. Responsible Research and Innovation: Aligning innovation activities in scaling up positive social impact	Kveton, V. & Blazek, J. Adaptive cycle model and new path development: towards a fuller comprehension of evolutionary trajectories of regions?	Ejaz, M. & Pinheiro, R. Innovation in higher education: From Contributor to Driver of Internet-Based Service Innovation
Reksten, C. Festival of food: Building regions	Rubæk Holm, J. & Østergaard, C.R. The high importance of de-industrialization and job polarization for regional diversification	

Parallel sessions 6 – Friday 12.30-13.45

Track B <i>"Green" regional development, environmental sustainability and policy</i>	Track C <i>Regional industry development: systemic approaches</i>	Track D <i>Digitalization, new business models and organizational practices</i>	Track G <i>Regional policy development, implementation and assessment</i>
Room F105 <i>Chair: Michaela Trippel</i>	Room F203 <i>Chair: Jarle Aarstad</i>	Room F204 <i>Chair: Natalia Mæhle</i>	Room F106 <i>Chair: Knut Koschatzky</i>
Sjøtun, S.G. Demonstration Projects and Social field dynamics in the Greening Maritime Cluster in South-Western Norway	Rørheim, J-E. & Boschma, R. The flip side of relatedness : Can relatedness lead to substitution effects and subsequent lower economic resilience?	Hoff, S.S. & Pettersen, I.B. How Lean Start-up can make a change in large organizations?	Nordling, N.; Pugh, R. & Thomas, E. Regional Economic Development through Openness and Participation – Designing Participatory Enterprise Policy in Six Finnish City-regions
Jolly, S. & Hansen, T. Barriers to greening the maritime cluster in Nordjylland: Role of regional and non-regional processes in green path development	Wang, G.; Bjørndal, E. & Vassdal, T. Incentives for Optimal Scale in Regulation of Electricity Network Companies	Thapa, R.K. & Iakovleva, T. Responsible digital disruption- the case of e-Health	Matti, C.; Uyarra, E. & Flanagan, K. Collaborative multi-stakeholder arena as a mechanism enabling adaptive implementation of low carbon regional strategies (in peripheral regions)
Caloffi, A. & Rossi, A. The impact of Airbnb on Italian cities	Armijos Maya, C.A.; Chávez Charro, J.M. & González López, M. Approaching the innovative capacity of exporting companies in developing countries depending on regional structure and industrial sector: a case study - Ecuador	Kahilaniemi, S. Buying Witty Cities: Keys of success via Innovative Public Procurement	Henderson, D. Regional Innovation policy, agency and the role of institutional work: The case of Wales
	Françoso, M.S. The insertion of Global South resource-rich places in knowledge networks: Rio de Janeiro in the offshore oil knowledge network		Ciechomska, A. & Raunio, M. Open innovation platforms and RRI as policy measures in Tampere region – putting responsibility in a test

Track A – Innovation in new spheres – beyond an economic rationale?

Thursday 16.30-17.45 (Parallel sessions 4)

Friday 10.15-11.30 (Parallel sessions 5)

Room: F106

Parallel session 4

Thomas Owren

Synthesizing a theoretical framework to help a complex social innovation grow

Whereas technical innovation aims to create new products or artefacts, social innovation aims to establish new social practices that ultimately become institutionalized in the social relationship, system or structure they target. Social innovations go beyond an economic rationale in that the primary goal is to create social value, serving a shared human need or goal or solving a socially relevant problem. Crucial to achieving this is scaling, the growing and spreading of the innovation. In order to scale efficiently, it is helpful if the innovation is easy to define and to implement, and does not require much local learning.

This paper looks at an aspect of promoting the implementation of complex social innovations in organisations - innovations that are not easy to define, nor to implement, and may require extensive local learning. Using a practice-based, translation theory lens, the goal of this paper is to develop a theoretical framework that managers can use to manoeuvre by in workplace accommodation of workers with reduced cognitive abilities. This may be relevant in return-to-work processes after illness or injury, such as when stroke, traumatic brain injury or multiple sclerosis leave workers with cognitive sequela, but also in the work inclusion of new employees with conditions such as intellectual disability. Many of the same remedies may apply, but they need to be individually adapted to the employee in question. They also may impact managers' and co-workers' daily routines, requiring explanations, negotiations, collective reflection, and hence, collaborative organisational learning. At present, research evidence concerning such accommodations is fragmented and dispersed among multiple literatures with limited crossreferencing.

My methodology will be critical interpretive synthesis (CIS). Differing from traditional health related systematic reviews, the ambition of a CIS is not to aggregate data to provide a summary of evidence, but interpret it in ways that are insightful and useful, using concepts from primary studies to develop higher-order theoretical structures. At the same time, a CIS will have a critical dimension, interrogating the assumptions of the included studies. Thus, the goal of the paper is making a theoretical contribution to the disability management literature.

Iris Wanzenböck & Koen Frenken

Turning societal challenge-oriented innovation policy on its head: The implementation of new research and innovation policies from a geographical perspective

Policies for research and innovation (R&I) typically seen in the sphere of national governments have experienced a proliferation in terms of spatial scale. Innovation is now a top priority on all policy agendas from the urban and regional to the European level. At the same time, innovation policy rationales have increasingly shifted, from generic market and system failures to so-called transformational failures (Weber & Rohracher 2012) in order to tackle societal challenges, such as climate change, health or ageing population. Particularly the European Union takes an active stance in implementing so-called 'mission-oriented policies' in order to tackle the 'grand' societal problems on a large scale. This begs the question about subsidiarity: what type of policies should be organized at local/regional, national and supra-national levels?

In this paper, we are interested in the questions whether and in which ways regional innovation policies may better contribute to tackle societal problems than supra-national innovation policies. Given that most of the global societal problems can be characterized as wicked; that is contested, complex, ill-defined and without a single best solution, we make the case for an inverse 'geographical

hierarchy' of R&I policy. We argue for regional policies that are more challenge-oriented with societal goals relevant to the local community, rather than generic and formulated mostly around flaws in the regional innovation system. By drawing on the literature in innovation and transition studies, we emphasize the diversity of local conditions and governing institutions, and the importance of local support markets and users for innovation, to set out arguments for orienting regional innovation policies more towards societal challenges.

Hilde Svrljuga Sætre, Jill Loga

Developing a national and regional policy on social entrepreneurship and social enterprises in Norway

The Norwegian welfare model is characterized by a large public sector, a universal and all-embracing welfare state with a high degree of economic and social equality. Moreover, there is a distinguished division of labor between the state and civil society leaving a small room for ideal welfare production. However, the welfare state's institutional arrangements are constantly subject to reforms. From the 1980s onwards, New Public Management reforms led to outsourcing of various types of welfare providers. Furthermore, the following political reform, New Public Governance, suggests changes in the nature of governing, where the public sector no longer is necessarily the primary site of governing. These reform changes have pushed for an interest in the potential of social enterprises, opening up for a broader debate about the division of welfare production between sectors and the promotion of the idea of a 'welfare mix'. Such policy debates are tied to questions regarding economic issues on future sustainability, yet increasingly also about democratic aspects and questions around diversity, enhancing user involvement, as well as involving stakeholders from different sectors in a cooperative approach to welfare production. However, the development of a policy on social entrepreneurship and social enterprises in Norway is a rather new subject. While policies on social entrepreneurship were developed in the US and Southern European countries such as Italy already in the 1990s, this subject has gained attention much later in the Scandinavian welfare states, and especially in Norway. This article will discuss the development of a policy on social entrepreneurship and social enterprises on both a national and regional level in Norway. Furthermore, the article will also highlight three particular issues that have bearing on the possibility conditions for the development of social enterprises.

Dieter Rehfeld, Anna Butzin, Judith Terstriep

Social, Economic and Political Innovation: In Search of an Integrated Innovation Policy

Currently we are witnessing that the concept of innovation moves beyond the economic sphere and spreading into a variety of societal and political fields, resulting in blurring boundaries. Yet it is recognized that an integrated innovation policy has to balance the dilemma between a broad and hybrid strategic approach on the one hand and clearly defined strategic targets on the other hand. In the light of an increasing fuzziness of the innovation concept and associated policy dilemmas, the paper will discuss several new approaches of innovation policy especially at the regional level from a social science perspective.

The paper is structured as follows. The first section will discuss the roots of »innovation« in different societal discourses and elaborate the building blocks of an integrated understanding of innovation, i.e., intentionality, specific points of reference in different societal fields, and a broad understanding of entrepreneurship. This is followed by a deconstruction the innovation concepts and an elaboration of its specifics for the social, economic and political field. To advance understanding the distinct characteristics of innovation in the three fields, its components, objectives, and principles are studied (section 2). Section 3 adds a further dimension for differentiation, i.e., the societal level an

innovation addresses (individual-, micro-, meso-, macro-level) which will then be combined with the societal fields. The fourth section of the paper discusses overlaps and reciprocal interdependencies between the three fields. It demonstrates how social aspects influence economic and political innovation, how economic aspects influence social and political innovation, and how political aspects influence social and economic innovation. The final section discusses the consequences of our findings for an integrated innovation policy. Rather than developing a holistic concept of future innovation policy, we formulate the points of reference as dilemmas that need to be balanced.

Parallel session 5

Miren Estensoro, Miren Larrea

Action research for Industry 4.0. policy: democratization and digitalization hand in hand

Industry 4.0 is considered a priority among several smart specialization strategies (S3). However, one of the challenges for territories willing to develop that opportunity area is the involvement of SME in diversification processes. The capability of governments to directly interact with territorial stakeholders is limited and territorial actors like SMEs run the risk of remaining out of these strategies unless other governance mechanisms are articulated.

Business transformation due to the phenomenon of Industry 4.0 is considered a critical condition to guarantee the survival and sustainability of firms. In general, the effects of Industry 4.0 relate to gains in productivity, income generation, employment, and increased investment (BCG, 2016).

Action research, as interpreted in this paper, is not a research methodology but a strategy for territorial development. Action research has strong principles of participation, democratization and empowerment of the weaker actors in society.

Apparently, combining Industry 4.0. and action research means combining productivity, income and investment with participation, democratization and empowerment of the weaker actors. Not an easy endeavor.

Still, the paper shares the experience of an action research process conducted in the Basque Country, Spain, to develop an Industry 4.0. policy for SMEs. The process has been based on a collaborative governance constructed by a regional government (the Provincial Council of Gipuzkoa) and eleven local agencies. Such governance is now being further developed by establishing dialogue processes with 420 small firms in order to empower them to face the challenge of Industry 4.0.

The discussion is a plea to explore new roles research can play in the field of innovation policies that will help face societal challenges together with the achievement of economic targets.

Tine Nesbø Tørseth

The making of a Public sector innovation. When LEAN meets professionalization.

Innovation in public sector has been frequently presented as a normative instrument used to resolve different social problems through the creation of new services or new products. In order to study public sector innovation we need to define the concepts of innovation, agent, institution/structure and social system interrelated in the same conceptual framework in order to encompass the phenomenon on its totality. Two complementary theories could answer this calling, and potentially be used as an effective lens through which to understand innovation: neo-institutional theory and structuration theory. The theories enables us to analyze it on different levels, which provides a more nuanced and situated approach to innovation processes.

Most western countries are struggling with the rising cost of health care services. With regard to hospital organizations, this context reinforces an ideology of bureaucratic rationalism, with scientific management being given more power to ensure that hospitals are better controlled and more predictable. Clinical pathway, influenced by LEAN thinking, is one solution to the challenges, and a CP aims to improve logistics and interaction, reduce overall risk levels, and increase patient safety. In order to improve Mental Health Care in Norway, the Government decided in August 2015 to restructure and revitalize Psychiatric Care by organizing Mental Health Care services into Clinical Pathway.

The creation and implementation of CPs in mental health care is a complex process influenced by macro-level circumstances such as regulative mandate (Policy level), meso level features such as Union groups and other representatives, and micro-level interactions between health/social care providers and patients. The initial policy was to organize the CP into 28 different tracks based on the diagnostic system in Psychiatric Care. However, a tense media debate arose from professionals and patients in Psychiatric Care worrying that standardization of clinical discretion and autonomy would lead to a worsening of Mental Health Care services. Furthermore, the main argument was that a standardization of diagnostic practice and the following treatment strategies could be viewed as a LEAN approach to treatment where the economic rationale governs the forces behind this way of organizing diagnosis. This means that the core value behind the innovation could be more control and improved efficiency, and not what benefits the patients the most.

The directorate of Health decided to organize work groups where different professions, user- and interest groups where to sit down and create the different CPs. The final product was far from what the Government initially had planned, and guided by strong, professional values rejecting the LEAN approach.

Raj Kumar Thapa, Tatiana Iakovleva

Responsible Research and Innovation: Aligning innovation activities in scaling up positive social impact

The current trend and practices in research and innovation, and series of challenges that have created in environment and society have raised public concern about the purpose of new research and innovation. In order to incorporate public concern about research and innovation, purpose and process, responsible research and innovation (RRI) has been put forward. RRI as a practice in research and innovation is expected to result in societal desirable outcomes, which could not only prevent the society from hazardous innovation but also find sustainable solution for so-called grand challenges of our time. RRI practices not only result in ethical and sustainable outcomes but also increase positive social impact thus facilitating sustainable business growth of organizations. With a case study of an organization in medical industry, we present how an organizational initiation could engulf RRI practices in its research and innovation, and business development process, ultimately facilitating to create positive impact in society and obviously sustainable growth of the organization.

Responsible Research and Innovation here we mean any kind of research and innovation, which are meant for socioeconomic transformation of society ensuring such activities are aligned with social and environmental norms, values and expectations of society, hence creating positive externalities in society. This implies increasing positive social impacts through responsible act towards responsible outcomes and spreading such responsible innovation for socioeconomic and environmental values at large.

Based on the case study and theory, we developed a social impact assessment framework in context of RRI and employed the steps and mechanisms to explore the case company and its attempt in scaling up positive social impact and sustainable business growth.

Key words: Responsible Research and Innovation (RRI), Positive Social impact, social impact assessment framework.

Connie Reksten

Festival of Food: Building Regions

The aim of this paper is to explore the connection between regionalization on the one hand, and festival on the other hand, in addition to analyse how festivals innovations activities vary between different European regions. In the last few years the phenomenon of festival has become a striking feature of European everyday life. There is a festival for almost every type of activity; music, literature, art, etc. Also, the number of food festivals increasing. Different regions develop their own flavours, accessible and possible to taste throughout the great many food festivals popping up in today's Europe. The paper will discuss how the sense of taste and taste preferences play a strikingly important role in today's regionalization.

The festival as a phenomenon, have traditionally and among researcher, been understood as arena to express and create identity. This for the most involves study of the festival organized by the local community and the civil society. In the last decades the festival more often have been understood in another way, and in the power to create a new economy and economy of experience – the experience economy. In both cases, in the study of the festival as identity as well of economy, the festival as phenomenon and as a feast and celebration, will always celebrate selected and appreciated values of the actual society. This could be values not yet articulated, neither in an ordinary language, or in the system of economics and politics.

The hypothesis of the paper will be on how festival makes a powerful incentive to rebuild and reinvent today's European regions. Looking into three local food festivals in different regions of Europe, the paper asks for some common features and shared values, but it also asks for how festivals innovations activities vary between today's European regions.

Track B – "Green" regional development, environmental sustainability and policy

Thursday 10.15-11.30 (Parallel sessions 1)

Thursday 13.30-14.45 (Parallel sessions 2)

Thursday 15.00-16.15 (Parallel sessions 3)

Thursday 16.30-17.45 (Parallel sessions 4)

Friday 12.30-13.45 (Parallel sessions 6)

Room: F105

Parallel session 1

Michaela Trippl, Arne Isaksen, Simon Baumgartinger-Seiringer, Alexandra Frangenheim, Jan Ole Rypestol

Challenge-led regional restructuring and new path development: towards a research agenda

Regions across the world are facing to an ever-increasing extent the pressure to find solutions to a variety of economic and societal challenges, ranging from industrial renewal to climate change, ageing of society and social inequality to name just a few. Tackling such challenges requires major restructuring efforts by nurturing new paths and transforming mature ones into particular directions. The 'directionality' of path development is, however, largely ignored in Evolutionary Economic Geography (EEG) theorising. EEG treats regional structural change in a neutral fashion, failing to distinguish between economically and societally desirable and less desirable paths. This paper sheds light on what can be termed 'challenge-led' regional restructuring. At its core are forms of path development that are based on the creation and combination of regional strengths across various sectors that address societal challenges. Drawing on and further developing recent extensions of EEG models with findings from innovation system and transition studies and other research fields the paper identifies several key issues that should rank high on agendas for future research on challenge-led path development. These include amongst others (1) opportunities and pitfalls of strategically setting directions in the context of broadly defined multi-actor settings; (2) complex inter-path dynamics between established sectors and new industrial activities; (3) the link between (regional) innovation system reconfiguration and new path development and the role of system-level agency in creating, re-combining and destructing system assets; and (4) multi-scalar influences on initiating and consolidating transformative processes. We demonstrate how insights into these dimensions can enrich explanations of local and non-local enabling and constraining conditions, mechanisms and processes of innovation-based path development into 'desirable' directions and ultimately help to explain the uneven geography of challenge-led restructuring. Focusing particularly on 'green' path development, we discuss several empirical cases that serve to test and further refine our conceptual arguments.

Bjørnar Sæther

Green transitions, innovation and the need for sectorial approaches

During the last 10 years economic geographers have started to formulate key questions concerning how economic geography can contribute to green or sustainable transitions. To develop these proposals and formulate a new research agenda for economic geography are of pressing importance. Such an agenda have to be wide and inclusive, and as has been pointed out, governed by the grand challenges of our time. The entering into the age of the Anthropocene reflects the nature, scale and magnitude of impacts on the Earth. The concept of the Anthropocene can however also be used to explore choices, attitudes and actions that will have consequences on the economic geographies of the future.

This presentation will argue that a sectorial approach is a relevant approach to such a research agenda. The economic sector based on harvesting and processing of the (Northern) boreal forest resources is such a sector. Well-managed forests is nature's method of capturing and storing CO₂. Increased use of wood in construction as a substitute for concrete and fossil-based products will result in the storing of CO₂. This well known fact has however not led to any green transition in the

use of construction materials, steel and concrete are the paradigmatic materials, while forest based materials have lost market share. It is argued that part of the reason for this is long time lack of product development and innovation in the wood mechanical industries. However niche products such as all-wood apartment buildings and highway bridges could help renew these industries. Based on preliminary findings from the wood-mechanical industries in Eastern Norway some key obstacles to a transition to more environmental friendly construction materials will be discussed. Major parts of the wood-mechanical industries are located in the peripheral part of Eastern Norway, resulting in challenges related to access to certain types of competences. This industry is further linked to the Swedish forest based industries, something that represents both treats and opportunities.

Lea Fuenfschilling, Simon Baumgartinger-Seiringer; Johan Miörner, Michaela Trippel
Institutional infrastructure for innovation-based industrial path transformation

The aim of this paper is to develop a more elaborated understanding of innovation-based renewal of mature industries by discussing the role of 'institutional infrastructures' in processes leading towards industrial transformation. In a first step, we integrate insights from evolutionary economic geography and organizational institutionalism. The evolutionary understanding of innovation-led adaptation of industrial paths is extended by the tradition to study field-level change, where industrial dynamics can be perceived as processes of (de-) institutionalisation. In case of transformation, certain elements of an established industry will have to become less relevant, be adapted or disregarded and new ones will have to be created, institutionalized and aligned with each other. The crucial question is then how these processes unfold and what regional and industry-specific structures fuel or hinder them. The notion of 'institutional infrastructure' draws attention to different features that govern field interaction, the formal and also informal mechanisms that produce 'the rules of the game' and, in doing so, either contribute to field stability or transformation. The hypothesis is that the transformative capacity of an industry will depend on how well this infrastructure is elaborated and how coherent and aligned it is. In a next step we will further bolster our framework with additional insights from the TIS literature.

Integrating the main findings of these strands of literature will lead to a more robust conceptualization of industrial transformation that takes into account the very specific structural preconditions (EEG) and key processes (TIS) necessary for the destabilization and adaptation of established industrial structures as well as the creation and build-up of new ones, and as such will show the merits of understanding and conceptualizing industrial transformation as a process of (de-) institutionalization

Markku Sotarauta, Nina Suvinen

How Does the Green Economy Grow? Institutional Agency for Green Path Development

The quest for green growth has become one of the most urgent socio-economic questions of our time. Green growth is a term to describe a path of economic growth that uses natural resources in a sustainable manner. It provides an alternative concept to typical industrial economic growth.

This paper, generically, engages in a rapidly expanding discussion of new industrial path development, and discusses greening of the Finnish economy by applying the distinction between path extension, upgrading, branching, importation and creation. Specifically, in relation to the path typology, it aims to answer the following research questions: What are the main institutional strategies adopted by intentional actors independently or in collaboration in their efforts to boost green path development in Finland? Who are the main institutional actors?

The main emphasis is on those institutional entrepreneurs and institutional navigators who work to institutionalise a greener economic path. The empirical analysis shows there are several actors, with differing roles, in multi-scalar public-private constellations enabling green businesses to be rooted in wider systems. The empirical analysis also reveals the diverse nature of institutional landscape shaping the emergence of green economy, and institutional navigation is the main type of agency. The analysis hence highlights how the institutional actors work indirectly to shape the rules of the game and the playing field for industry-oriented efforts.

Empirical analysis is based on 30 interviews with key actors at a national level and in two Finnish regions (Tampere regions and Central Finland) as well as the analysis of secondary data consisting of all the main policy documents.

Parallel session 2

Roberta Apa, Ivan De Noni , Luigi Orsi, Silvia Rita Sedita,

Regional innovation, well-being and quality of life: evidence from Europe

There is a growing awareness that GDP and other traditional economic statistics suffer from not getting the full picture of how society is doing. Hence, we would like to shift attention from purely economic indicators to indicators that measure the actual quality of life. Moreover, research in innovation studies suggests that the concept of responsibility in science and technology is not only a technical matter but primarily a social and environmental one. Innovation and specifically environmental-related technologies are receiving increasing attention from scholars, practitioners and policy makers as key drivers in the development of a more sustainable and responsible economy. The term environmental is used to classify inventions that could have a positive impact on the environment and on a more sustainable world. Thus, environment-related technologies should be considered one of the key drivers of sustainable development and a better quality of life. However, we still know very little about the factors underlining the development of this category of innovations and the effects that this category of inventions could have on the so called “well-being”. In this research, we focus on European regions and we study the specific effect of sustainable innovation through the mean of environment-related technologies on the quality of life of European regions. In fact, the complex and multidisciplinary nature of sustainable innovation is expected to further strengthen the regional quality of life. A cross-sectional study of European regions over the period 2000-2014 was organized using data from the OECD Regional Well-Being, OECD RegPat, Cambridge Econometrics and Eurostat databases. Significant policy implications will be discussed in the paper.

Jarle Aarstad, Stig-Erik Jakobsen

Environmental sustainability strategies as a function of firm- and regional-level characteristics

In this study, we aim to identify organization- and regional-level characteristics that induce firms to implement environmental sustainability strategies (EVSs). An EVS implies a proclivity to collaborate with stakeholders concerning environmental improvements, share information with competitors concerning environmental improvements, emphasize environmental improvements rather than short-term economic gains, and emphasizing environmental improvements as a means of increasing earnings. Analyzing a survey of 1,022 Norwegian firms, we find that firms with many employees have a strong EVS, while firms having laid off employees have a weak EVS. We moreover find that firms with innovation collaboration and developing new products and services have a strong EVS. The findings indicate that robust and innovative firms have a strong EVS. Also, we find that subsidiaries

have a stronger EVS than mother companies. We finally find that firms located in low populated regions spanning a large geographical areas have a strong EVS. The latter finding indicates that firms located in rural areas focus more on EVSs than firms located in urban areas.

Ebru Susur, Antonio Hidalgo, Davide Chiaroni

A cross case study on regional circular economy development: A strategic niche management perspective

The overarching goal of this research is to understand how circular economy initiatives for industrial production systems can unfold and sustain through different spaces. Specifically, we elaborate on how development and management of circular economy initiatives change at different regions. To do so, we draw upon strategic niche management (SNM) as analytical framework. Because, SNM would help to emphasize the underlying regional differences leading to more impactful circular economy initiatives. Moreover, SNM can provide some clues or ways of looking at how circular economy initiatives may deliver instruments for a socio-technical change at industrial systems level.

A cross case analysis is conducted on development of circular economy initiatives from two regions in Spain: Catalonia and Basque Country. We have chosen Spain as the setting due to its diverse social and technical industrial production routines distributed over various regions within the country. Whereas, Catalonia and Basque Country regions are taken under focus because they are the two most industrialised regions in Spain since the industrial revolution and it is observed that there is a considerable regional awareness about circular economy in both regions when compared to other Spanish regions.

As for the triangulation of the data and insights, two different sources of empirical material have been planned, which are semi-structured interviews and secondary data sources to trace the related industrial developments in both regions. Each regional case is analysed and interpreted following a case study procedure and then a cross case discussion of two cases are expounded.

In this research, we use SNM as a method theory in a rarely explored domain in sustainability transitions literature which is circular economy. This in turn brings new ways of interpreting circular economy development and may enlarge its vision through the constructs under SNM analytical frame.

Christian Østergaard, Jacob R Holm, Eric Iversen, Torben Schubert, Asgeir Skålholt, Markku Sotarauta

Green skills and environmental innovations in the Nordic countries

Supporting green transition and creating green growth pose challenges for regional innovation policy. Traditional accounts of green growth have relied on sectoral classifications. However, the empirical evidence indicates that the underlying assumption that all firms within a predefined sector contribute to green growth and that all firms outside such sectors do not is often wrong. This approach ignores that green growth and sustainability transitions may occur in sectors, which are not usually associated with eco-technologies (Shapira et al., 2014). Therefore, a particular challenge for regional economies is promoting conditions for firms introducing innovation that have environmental benefits for themselves, the users or both - regardless of the sector.

Recent research has shown that the skills and human capital needed in green jobs are different from that of non-green jobs (Consoli et al. 2016). Based on detailed occupational data from the US, Consoli et al. (2016) find that green jobs often require a higher level of human capital and specific cognitive and interpersonal skills. However, these green jobs are not directly translatable to a Nordic context. In addition, little is known on whether these green skills actually are important for firms that aims at developing eco-innovations.

The purpose of this paper is to identify the regional distribution of green skills in the Nordic countries and analyse whether these are important for firms' introducing eco-innovations. The paper draws on a combination of firm level survey data on eco-innovations linked with employer-employee census data from Denmark, Sweden, Finland and Norway. The paper develops an education-based and an occupation-based indicator for green skills. Results show that, both indicators are positively related to firms' likelihood of introducing eco-innovations. The different Nordic countries show rather distinct patterns of the geographical distribution of these green skills, which have implications for firms' possibilities for introducing eco-innovations.

Parallel session 3

Carla De Laurentis

Mediating the form and direction of regional sustainable development: the role of the State in renewable energy deployment in selected regions

In policy terms, meeting the challenge of a secure, affordable, and environmentally sustainable energy mix while continuing to tackle climate change requires that countries remain committed to ambitious low-carbon energy targets. Research shows that the achievement of higher-level targets will depend upon the successful and rapid implementation of projects at sub-national levels, such as regions and cities. These are the levels at which decisions about investment in, and the siting of, renewable energy power schemes are crucial and as a result innovation often takes place at this level.

While investigating the deployment of renewable energy in 5 regions (two in the UK and 3 in Italy), the paper analyses and critically discusses the role of these regions in contributing towards the promotion of green and sustainable path development. The regional level is often represented as an emerging political-economic unit, with increasing autonomy of action both at national and international levels. It is a 'key' governance scale where environmental responsibilities, and a wide array of policies aimed at combining ecological goals with economic competitiveness, are, or could be developed, implemented and realised. Yet, while the literature points towards the purposeful action of policy actors at the regional level in influencing institutional conditions via processes of regional policy-making, competences and institutions are only partly bound to regional territories. The research highlights how policy-making, governance and infrastructure arrangements vary and how the institutional conditions for renewable energy deployment- and the incentives (and or barriers) they create at the regional level, become entwined with the institutional architecture at the national scale. The paper stresses the important role of the state in mediating the form and direction of sustainable regional development.

Hanna Martin, Roman Martin, Elena Zukauskaitė

The role of demand in green regional development - examples from the food industries in Värmland and Scania, Sweden

This paper deals with the multiple roles that demand can play in green regional development, focusing on the transformation of the food sector towards environmentally friendly production. We address the question of how and why demand can drive transformation in different types of regions. The food industry is a relevant case, as it faces the need to change its production system to cope with climate change and environmental pressures, and as it is consumer-driven and characterized by complex demand conditions. Theory building departs from accounts on economic geography and regional development, where we identify multiple roles that demand can play in regional

transformation. This includes aspects related to changes in consumption patterns, to active co-development between users and producers, to public procurement, or to changes in norms and values in the society. The empirical analysis focuses on two food producing regions in Sweden, namely Scania and Värmland. The first is a core region with diversified local demand and food companies that serve local, national and global markets. The latter is a peripheral region in a sparsely populated area, with firms that target mostly local and national markets. Both regions have strongholds in food industries and a policy system that supports innovation and collaboration between local firms. The analysis is based on document studies and a large scale survey among food producing companies in the two regions.

Alexandra Frangenheim

Distributed agency for challenge-driven path development: Towards sustainable public procurement of food in Vienna

In EEG and innovation studies, our knowledge about how transformations towards more sustainable regional paths take place and how this can be stimulated through adequate policy interventions is still limited. The paper argues that in order to gain insights on how the direction of innovation and path development can be incorporated in the study of industrial change, the influence of wider societal and economic contexts needs to be taken into account. In theoretical terms, the paper enhances recent conceptualizations of agency in EEG and innovation studies with insights from transition studies to further operationalize how agency in the processes of challenge-driven path development is related to its broader context.

Moving beyond the failure debate analyzing systemic performance deficits, a transformative perspective on innovation systems is taken considering agency as being distributed among multiple actors undertaken in different forms at different levels. Existing concepts of organizational level and system level agency are so far only oriented towards path-specific or innovation system specific assets and capabilities. Path and innovation system shaping dynamics such as inter-path relationships, the multi-scalar political, educational and financial system, pre-existing regional infrastructures and institutions as well as ideas and future visions have not been taken into account. It is claimed that the activation and mobilization of context structures are a pre-condition for paving the way for competent system and organizational level agency in challenge-driven path development.

Analyzing the case of public food procurement in Vienna, a broader conceptualization of agency at organizational- and system-level is applied to gain knowledge on what nurtures and constraints path development towards more sustainability. A specific focus lies on actor's cooperation strategies to undertake agency and on the conditions of when context structures can be mobilized to undertake agency in a certain direction. Resulting policy implications emanating from these insights will be provided.

Dieter Rehfeld

From Technology Show-Case to Real Laboratory – Lessons from the Transition Project “Innovation City” Bottrop

One of the most ambitious regional transition projects in the Ruhr Area is Innovation City in Bottrop. The projects started in 2010. The challenge is to work out a strategy to reduce the CO²- emission in a part of the city with specific features of an old industrial region (industrial as well as housing features) by 50 percent within 10 years. The pilot area covers 70.000 inhabitants, 14474 buildings and an area of 2463 ha.

So far, more than 125 projects started under the umbrella of Innovation City in Bottrop. A master plan for the renewing of the pilot area guides the individual projects. One of the first and most

challenging experiences was that the individual behavior is much more important for energy consumption than technological infrastructure and support. Social innovation therefore came on the agenda, too. The second challenge was to establish an effective governance setting; in this context, policy innovation came on the agenda.

The paper focuses on three aspects key assets. First, on the interplay between social, policy and technological innovation. The key argument is that integrated innovation strategies work best on the local or regional level where different aspects work together in a strategic but open way.

Second, on a governance model that bases on a hierarchy free project table, a broad range of participative and motivating activities, a master plan that works as guiding but open frame, an involvement of stakeholders from business and research, and a complementary mode of policy-coordination.

Third, the achievements beyond the project that are critical for a large scale real laboratory project. Capacity building, roll-out strategies, and spill-over effects are important to make use of the project results as a blue print for overall transition strategies in the Ruhr area.

Parallel session 4

Gz. MeeNilankco Theiventhran

Energy transition in transitional societies: The question of equity

Energy is currently high on the political agenda globally owing to concerns over the security of supply, rising prices, and climate change. Energy systems and energy transition engender and give expression to power relations, fairness, and disadvantage. Exploring these complex and diverse interactions between energy and equity is important especially in the context of the global south. There is a growing need to identify and analyse the potential social and economic disruption due to energy transition, taking into account policies and strategies that would ensure equitable energy systems and minimize if not pre-empt disruption. The prospect of the creation of renewable energy systems in ways that are not socially inclusive, or cause ethnic, religious, regional, gender or socio-economic inequities cannot be ignored in the context of the difficulty and complexity of energy transition accompanied by competing interests, locally and internationally. Especially the countries in transition have an uphill task in the face of their changing dynamics, political fluidity and economic challenges.

This paper seeks to examine the prospect of transitional societies achieving energy transition in a socially just manner and explore the potential pathways and associated challenges. The starting point of this paper is the understanding that energy injustice as being produced historically, geographically and materially. This is to say, energy inequity, injustice, and vulnerability are more than matters of prices and income and concern structural differences that have evolved over time and space.

This paper argues that innovation and industries must be sensitive towards equity and justice issues when working on energy transitions in transitional societies and draws examples from Sri Lanka to demonstrate the importance of equity and justice considerations.

Nina Kyllingstad

Mechanisms and barriers of regional industrial path development – the case of the Centre for Research-Based Innovation Offshore Mechatronics (SFI OM)

Due to increasing globalisation, regional industries face competition worldwide. Thus, how regional industries can develop in a sustainable way is high on the research agenda. This article explores regional industrial change by investigating how the Centre for Research-Based Innovation Offshore Mechatronics (SFI OM) in southern Norway may contribute to new regional industrial path

development. Further, the paper seeks to investigate the mechanisms and barriers that might promote or hamper such a development. The SFI OM was awarded its status and funding from the Research Council of Norway during the peak of the oil and gas industry. The centre's aim was to improve growth and innovation within the established industry and beyond. However, at the time of initiation, the oil prices had dropped severely, thus resulting in new conditions for the centre and its partners. This changed dynamic, to the established industry of oil and gas, makes the SFI OM an interesting case for studying mechanisms and barriers for new path development.

Jan Ole Rypestøl

The role of system level entrepreneurs in processes of regional transformations

Due to intensifying globalisation and digitalisation, as well as an augmented focus on sustainability, regional industries face increased challenges from competitors located all over the world. This increased competition fuels regional change as industries need to transform to maintain and increase their competitiveness. In short, regional innovation systems (RIS) need to change for regions to ensure regional economic growth. Contemporary research has identified system level entrepreneurs as important contributors to processes of regional transformation. System level entrepreneurs are recognised as actors that identify and motivate by unexploited RIS potential. System level entrepreneurs exploit these identified opportunities by building and improving the network elements of RIS. As so, system level entrepreneurs act as RIS engineers as they build and improve infrastructural elements important for knowledge sharing activity and innovation. Building on the theoretical insights from the RIS approach, the entrepreneurship literature and from network theory, the paper suggests, and tests, an analytical framework that aspires to increase our understanding of the role of system level entrepreneurs in processes of regional transformations. The paper suggests that system level entrepreneurs are important change-makers in RISs and, further, that system level entrepreneurs can initiate and facilitate processes of change by developing elements that relate to structural, relational and cognitive RIS elements. The empirical section draws from experiences gained from the introduction of a Mechatronic Innovation Lab (MIL) in the Agder region of southern Norway. The paper investigates the process of transformation as a two-step process. Firstly, it researches who was the initiating actors, what was their agencies and what was their rationale for initiating the MIL in Agder. Secondly, it researches how the system level actors, their agencies and their rationale changed as the MIL developed from the phase of initiation to the phase of active service.

Age Svein Gjoesaeter, Jon Gunnar Nesse, Torbjørn Årethun and Oyvin Kyvik

Business models as conceptual framework for sustainable value creation: Strategic and operative leadership challenges

The focus of the study is on how business models are used as conceptual frameworks for the dual purpose of profitable and environmentally sustainable value creation in offshore shipping. With three Norwegian offshore service firms as empirical basis, their unique business models are described and analyzed and strategic and operational leadership-challenges related to their implementation are explored from a combined theoretical and practical angle. Each of the three case firms represent a different approach to green modernization. Grounded on practical sustainability-experiences ranging from operational- to technology-based innovations, the study contributes with increased theoretical and practical understanding of strategic- and operative leadership-challenges related to the operationalization of profitable and environmentally sustainable value-creation exemplified by actions and activities forming part of the business model's conceptual framework. The

results emphasize the relevance of leadership of the business model development and particularly management of the business model's various competence areas and interdisciplinary activities.

Parallel session 6

Svein Gunnar Sjøtun

Demonstration Projects and Social field dynamics in the Greening Maritime Cluster in South-Western Norway

Recently, an 'absence of space' in transition studies has been emphasised. This has led to an emerging spatially grounded transition approach, which emphasises how transition processes are embedded in territory-specific institutions, social organisation and material structures, as well as being potentially multi-scalar. The paper seeks to contribute to the literature on spatial transition by utilizing the concept of 'social field', defined as a "time-spatial scale of social relations emphasizing historical and geographical scope" (Fløysand and Jakobsen, 2011: 332), which potentially also are multi-scalar. Each social field is populated by actors who adhere to field-specific institutions and practice, and *in sum* make up the 'social, cultural and material inventory', in which e.g. 'green innovation' takes place. However, different field-configurations can affect different green innovation or demonstration projects. Thus, situating green demonstration projects as 'events' in social fields allows for a focus on how projects are situated at intersections of various social fields and how different field-dynamics in similar contexts play out in various projects. Various demonstration projects therefore become interesting units of analysis, although it is rather *how these projects are connected to social fields* that is of interest here. However, projects also have the potential to be 'field-configuring events' in that they can affect field-development. Empirically, the article studies three demonstration projects in a greening regional maritime industry in South-Western Norway. The research suggests that the emergence of these projects has been affected by various social field dynamics, such as business fields, a policy field and a cluster field, but that they simultaneously have been important in constructing a maritime battery niche in Norway. Though niche and field as analytical constructs differ, the article still provides a way to look at emerging niches as the sum of various interacting fields, which potentially can say something about the geography of niches.

Suyash Jolly, Teis Hansen

Barriers to greening the maritime cluster in Nordjylland: Role of regional and non-regional processes in green path development

This paper contributes to the recent debates on sustainability transitions in the mature and established regional industries which have been reluctant to structural change by unraveling the role of local, regional and non-regional processes in new green industrial path development. This paper suggests that sustainability transitions at the regional level require coordinated efforts between various actors and networks with different interests operating at different spatial scales. Empirically, this paper studies the North Denmark region which has been regarded as an old industrial peripheral region which tried to revive old and declining industries while facing economic crises into new strategic industries. The paper utilizes a qualitative case study approach and is based on archival data sources and 14 semi-structured interviews with different maritime stakeholders (regional government authorities, national maritime authorities, regional intermediaries, equipment manufacturers, port authorities, academic researchers, industry associations including shipowners and ship equipment manufacturers, civil society etc.) at the regional level in North Denmark as well as the national level. In this paper we trace the long-term development of the maritime cluster in Nordjylland (North Denmark) from the 1980's till 2018 which has gradually transformed itself from shipbuilding activities and closure of existing shipyards (Aalborg and Frederikshavn) to creation of

new spin-off firms emerging from existing shipyards and competencies gained from shipbuilding activities. The cluster has grown considerably by adding new value-added business activities around maritime equipment manufacturing and maritime service providers integrated into activities of four main industries i.e. shipping, fishing, offshore oil and gas and offshore wind power. Regional stakeholders and maritime equipment and service suppliers in the region are gradually being involved in reducing barriers to greening the cluster. However, given the transnational nature of the maritime industry regarding environmental regulations set by IMO (International Maritime Organization) and EU for greening the maritime industry through a slow bureaucratic process and low level of co-operation between maritime stakeholders, greening the maritime cluster has been challenging. The greening of the maritime sector has been slow and gradual due to uncertain nature of global and EU level regulations and different interests of shipping ports, shipowners, cargo owners and equipment manufacturers and suppliers. Another important issue slowing down transition to green maritime sector has been the has been the plethora of actors, local and regional as well as national networks having a stake in the Danish maritime sector due to the multi-level governance arrangement with different tiers of government and maritime stakeholders at local municipal level, regional, national, EU as well as international level. An area of debate and concern has been the presence of a number of local, regional and national actors providing a specialized type of services in similar functional domains to the regional cluster have created ambiguities in terms of organizations doing duplicate work, serving individual interests and not coordinating with each other. Based on these insights, the paper contributes to recent debates on barriers to sustainability transitions in mature and established industries by highlighting the role of regional and non- regional processes at different spatial scales.

Annalisa Caloffi and Arianna Rossi

The impact of Airbnb on Italian cities

The sharing economy is bringing new opportunities and new challenges to cities and regions around the world. Indeed, born under the banner of sustainability, many of the innovations that commonly fall within the broad spectrum of the sharing economy can instead lead to major difficulties in the socio-economic sustainability of cities.

In this article, we analyze the case of Airbnb. The few analyzes that are currently available have brought contrasting evidence on the impact that this new organization model can have on traditional tourism activities, as well as on the daily life of citizens and on the structure and functions of cities. We focus on Italy, where, despite the importance of tourism and the massive presence of Airbnb, no scientific evidence is available that discusses the various effects of this innovation. We do so by using – for the first time in this field – a counterfactual methodology that helps us identify a clear causal relationship between the diffusion of Airbnb listings and a number of phenomena. Our analysis shows that Airbnb brings a competitive challenge to the traditional, regulated hotel business. Most important, we found that, in the historical centers of the main Italian tourist destinations a displacement effect of short-term versus long-term rentals can be found, which, if not governed, can contribute to a loss of resident population and an increase in gentrification. The analysis of the dynamics of commercial activities supports the idea that Italian historical city centres are at risk of disneyfication.

Drawing on the above, the paper concludes with some suggestions for the governance of the sharing economy that is able to enhance the sustainability of cities.

Track C – Regional industry development: systemic approaches

Thursday 16.30-17.45 (Parallel sessions 4)

Friday 10.15-11.30 (Parallel sessions 5)

Friday 12.30-13.45 (Parallel sessions 6)

Room: F203

Parallel session 4

Plecher Monica, Chaminade Cristina, Kulkarni Mandar, Parthasarathy Balaji
Explaining the past, predicting the future: the influence of regional trajectories on innovation networks of emerging industries

Recently different economic geography scholars have provided important contributions on the relation between regional innovation systems (RIS), industrial specificity and innovation networks (e.g. Boschma and Frenken, 2010; Chaminade and Plecher, 2015; Trippel et al., 2017). Nevertheless, comparative research on how specific RIS trajectories may shape innovation networks in emerging industries, particularly in relation to RIS in emerging countries, remains underdeveloped.

Overcoming this gap, the paper aims to investigate how the trajectories of two RIS in emerging economies (Bangalore in India and Beijing in China) could influence the nature and spatial dynamics of innovation networks (i.e. linkages related to sustain innovation processes as well as to exploit own innovation capability) in a newly emerging sector. We focus on the new media industry which in both regions represents a new source of regional development. Evidence is based on literature review and firms' interviews. The analysis is developed on different elements of the RIS trajectories: the historical specialization of the region, the legacy of international linkages for innovation, the main characteristics of the institutional environment and its empowered organizational setting.

The evolution of those elements and their interplay points to the unfolding of a hierarchical top-down NIS/RIS trajectory (politically and institutionally driven) in Beijing and a bottom-up trajectory in the case of Bangalore (cognitively driven). Both the trajectories have not only influenced the industrial dynamics, but also generated specific barriers and opportunities for the development of innovation networks within the new media sector.

Different policy initiatives are suggested for the two regions. In Bangalore, the policy initiatives should be much more related to favour and 'empower' intermediate organizations. In Beijing the policy initiatives should be more directed toward diffusing incentives to local government agents to enlarge the base of SME networking opportunities with knowledge provider organizations and to sustain more open innovation initiatives.

Bækkelund, Nora Geirsdotter

Rural restructuring and path evolution – a micro level approach

The question of change is central in evolutionary economic geography. However, how new economic activity comes into being is relatively under theorized (Martin and Sunley 2006), where, furthermore, such investigations in general have focused on large, urban spatial settings (Trippel, Grillitsch and Isaksen 2017). Small events that initially seemed insignificant, but which in hindsight turn out to have a big impact, have been emphasized as important for industrial change (David 1988; Arthur 1989).

Recently, though, deliberate agency has come under closer scrutiny (Garud and Karnøe 2003), and it is argued that the agency necessary to change industrial paths is not exclusively entrepreneurial (i.e. commercial), but it also drives change in institutions and the surrounding environment (Grillitsch and Sotarauta, forthcoming; Isaksen et al 2018). My PhD project will investigate such relations between chance events, agency and wider structures in economic restructuring processes.

New combinations of existing knowledge is a possible source of novelty and change. The probability of industrial change is considered highest when the knowledge is related, but not too similar (Frenken, Van Oort and Vergburg 2007; Boschma and Iammarino 2009). Still, change might be more radical when building on unrelated knowledge combinations (Saviotti and Frenken 2008). Related variety is measured statistically through industry classifications (Fitjar and Timmermans 2017), but the skills and knowledge sit with individuals. What is related

knowledge might not appear to us before it has already been combined. Therefore an investigation of agency, skills and knowledge at the micro level will throw new light at the origins of novelty and change. EEG has yet to understand who the change agents are, as well as why and how they operate. This PhD project will investigate these topics in the context of rural areas in Western Norway, looking at the sectors of adventure tourism and small scale food and beverage production.

Baumgartinger-Seiringer, Simon; Miörner, Johan & Tripl, Michaela

Towards a stage model of regional industrial path transformation

Arguably, the debate on innovation-based path development in Evolutionary Economic Geography (EEG) reflects a strong dichotomy between on-going continuation and radical change of industrial path development. Additionally, one can observe a recent shift of interest towards the latter, which is often portrayed as resulting in the creation of new paths. In this paper, we however bring forward the argument that radical innovation activities can occur within existing paths without necessarily leading to their dissolution. We put explicit emphasis on the transformation of existing paths and aim for a more holistic and realistic view on major intra-path alterations, which combines mechanisms of continuation and change alike. To capture such processes, we suggest a model that identifies and distinguishes between three transformation stages, allowing us to elaborate on in-depth arguments about how more radical change becomes initiated, reinforced and finally consolidated in established industrial paths. We advance the idea that it is five dimensions that deserve closer scrutiny and which can be assumed to vary significantly throughout the process towards path transformation: (1) the changing impulses given by the extra-regional context specific to the path's industry; (2) the nature, origin and number of actors targeting transformation-related activities; (3) the state of the assets needed for triggering transformations, the mechanisms used to provide the required assets, the supportive system fuelling such actions and the (de-) institutionalization of assets; (4) the challenges which endanger the momentum of the process; and (5) the roles played by firm-level as well as system-level agency. To provide a more comprehensive understanding of these theoretical outlines and to illustrate our arguments, we draw on the empirical case of the automotive industry in Western Sweden, which is currently transforming towards the production of intelligent and self-driving cars.

Parallel session 5

Nhien Nguyen, Åge Mariussen, Jens Ørding Hansen

Building Self-Sustaining Research and Innovation Ecosystems in Europe through Responsible Research and Innovation

We discuss the main concepts and approaches for integrating Responsible Research and Innovation (RRI) into regional development policies in Europe. To be self-sustaining, an ecosystem should be "healthy", i.e. adaptive, resilient, reproducible, capable of continuous learning, and open or closed when needed.

We aim to build an integrated framework based on literature review and co-creation with the relevant stakeholders. We suggest the following steps for implementing this framework: 1) map the territorial R&I ecosystem to understand the supporting conditions for research and innovation, 2) identify the relevant research and innovation stakeholders in the chosen territories, 3) engage them in stakeholder workshops that aim to formulate a variety of scenarios for building a self-sustaining

ecosystem in their territories, 4) propose recommendation for integrating the RRI principles (gender equality, public engagement, ethics, open access, science education) into the regional development policies through policy foresight analysis.

This paper is a part of our H2020 proposal submitted to the program Science with and for Society (SWAFS), which is currently at the Grant Agreement Preparation stage.

Kaya Haugland Færøvik

Cross-industry innovation processes for oil and gas firms following a market downturn.

When the crude oil price dropped in 2014 it presented the firms in Western Norway, a region heavily dependent on the oil industry, with a challenging situation. To stabilise itself against future market fluxes, the oil and gas firms need to undergo a restructuring process to develop a more diverse, environmentally sustainable and less oil dependent industry. To understand this development, the current paper looks at the innovation processes of these firms with emphasis on the firms' path dependence, networks and innovation capability. Considering the setting of diversification and restructuring this leads to a focus on cross-industry innovation and cross-industry innovation capability. Are firms engaged in, or attempting to reach, several markets a result of a proactive strategy, or is it rather reactive forces struggling to meet current challenges? The paper focus on the characteristics of innovation processes and how a firms' path changes and evolves as a result of initiatives to innovate across industries. Firms' path evolvment depends on how past and present events affect firms' organisational components, such as competence, structure and networks.

The paper analyses and compares small to medium sized oil and gas firms in Western Norway. The data is gathered through qualitative interviews with each firm in 2018 as the industry is stabilising, but while there are still initiatives to diversify as a response to the preceding market crisis. During the interviews, the various elements of the innovation processes were discussed, from structural implications to external influences. As a result, how the firms' paths evolved during their cross-industry innovation ventures were analysed, as well as which characteristics of the firms' innovation processes have enabled them to survive and diversify in a challenging situation. It is the aim of the paper to help develop a framework of necessary firm components for successful cross-industry innovation initiatives.

Viktor KVĚTOŇ, Jiří BLAŽEK

Adaptive cycle model and new path development: towards a fuller comprehension of evolutionary trajectories of regions?

Regions as open complex systems develop along various evolutionary trajectories over time. Drawing on evolutionary economic geography we applied adaptive cycle model of the evolution of a complex system (Martin, Sunley 2011) to comprehend evolutionary dynamics of regions in terms of their path development trajectories. Over the last years, the new path development model elaborating set of evolutionary trajectories of regions has been widely established within economic geography.

However, evolutionary trajectories that have been conceptualized so far encompass predominately „positive“ pathways emphasizing (re)emergence and growth, while in reality numerous regions are undergoing also „negative“ trajectories. However, these periods of increasing rigidity, contraction and decline have not been sufficiently elaborated. Applying complex adaptive system approach the aim of this presentation is to broaden the theoretical framework towards and to contribute to a fuller comprehension of evolutionary trajectories of regions with a focus on „negative“ pathways. Such path trajectories might exhibit distinctive features at different spatial, hierarchical and temporal

scales. Via reference to the literature, we outlined six adverse evolutionary trajectories with their typical characteristics, possible mechanisms and driving forces (namely, path truncation, downgrading, lock-in, contraction, delocalization and destruction). It will be argued that these „negative“ evolutionary trajectories can be not only closely mutually interwoven, but can be even inter-linked to subsequent „positive“ trajectories. Finally, it has to be underlined that these "negative" regional trajectories represent a major challenge from a policy perspective.

Jacob Rubæk Holm, Christian Richter Østergaard

The high importance of de-industrialization and job polarization for regional diversification

The process of regional diversification has received a growing interest in recent years with a focus on the role of relatedness between economic activities. The main argument is that regions diversify into economic activities closely related to their current activities. However, there are also processes working against this rather path dependent process, such as de-industrialization, job polarization, skill-biased technological change, and urbanization. The purpose of this paper is to analyse the importance of relatedness and these major processes in regional diversification with specific emphasis on the role of job polarization and de-industrialisation. The paper draws on linked employer-employee census data from Denmark 2008-2013. Results show that, while relatedness does matter for regional diversification, job polarization and deindustrialisation entail that the most related industries tend to contract. Hence, the results show that regional diversification is affected by relatedness, but its effect is overshadowed by job polarisation and de-industrialization. This effect is consistent across regions. The results show a role for policy and entrepreneurship in introducing unrelated diversification.

Parallel session 6

John-Erik Rørheim

THE FLIP SIDE OF RELATEDNESS: Can relatedness lead to substitution effects and subsequent lower economic resilience?

We examine the effect on firms of collocation with the oil- and gas-sector in the economic region of Stavanger in Norway over two time periods. The period from 2010-2013 with persistent high oil price, and 2014-2016 when oil prices halved. Contrary to expectations we find that, total wage costs (as a proxy for firm size) in tradable industries who are skill-related to the petroleum industry do not grow more than those in tradable non-skill-related industries in the bust period.

Guanqing Wang, Endre Bjørndal; Terje Vassdal

Incentives for Optimal Scale in Regulation of Electricity Network Companies

Electricity network companies are natural monopolies and should be regulated in order to protect customers from abuse of monopoly power. In Norway, the network companies are regulated by the Norwegian Water Resources and Energy Directorate (NVE). The regulation scheme has gone through several stages, since the introduction of the Energy Act in 1990, and is constantly under improvement. The most recent regulation model, introduced in 2007, is a combination of revenue cap and yardstick regulation. In order to give incentives for optimal scale, NVE assumes constant

returns to scale (CRS) in their benchmarking models. They also implement a compensation scheme, based on merger analyses, when companies choose to merge.

In this paper, we analyze the implications for the regulation of the network companies, of different scale assumptions in the benchmarking models, including Koopmans frontier, which has not been used in regulation contexts before. We analyze the cost efficiencies of 115 electricity distribution companies in Norway during 2011 to 2015 by using six different types of non-parametric models: CRS-DEA, Koopmans frontier, NDRS-DEA, NIRS-DEA, VRS-DEA, and FDH. We find that the VRS-DEA and FDH models give customers limited protection against abuse of monopoly power. Some of the larger companies have reference sets under CRS that are dominated by relatively small companies, and this pattern is less prevalent with the Koopmans assumption. We also investigate effects on customer prices and company profitability under the different benchmarking models.

Carmen Alexandra Armijos Maya, José Mauricio Chávez Charro, Manuel González López
Approaching the innovative capacity of exporting companies in developing countries depending on regional structure and industrial sector: a case study – Ecuador

The economic slowdown in Latin America and the Caribbean, derived from raw material cost reduction, forces governments to try to improve the competitive conditions of non-oil exporters, which, according to CEPAL, amount to less than 1% on average. There is a strong presence of Small and Medium-sized Enterprises (SME's), but their participation in overall exports is low; and it is here that innovation plays a decisive role in developing economies - given its micro- and macro-level effects - as it is a factor of corporate competitiveness. Due to their physical and human features, regional systems have propitiated the necessary conditions for the development of a certain degree of specialisation in one or several production sectors and in their corporate structure. This study aims at carrying out a comparative analysis of the different geographical regions of Ecuador and the difficulties exporting companies face when they want to innovate. These companies are characterised and classified according to the aforementioned influential conditioners, using the National Survey on Science, Technology and Innovation Activities (Encuesta Nacional de Actividades de Ciencia, Tecnología e Innovación); and applying multivariate statistical methods in order to summarise the different classification and analysis factors. The results of this study prove that, in spite of the remarkable sale and export rates, both at regional and sector level, investment in innovation is almost insignificant since, at regional level, the difficulties preventing and constraining these activities come down to two global factors: the first one having to do with the technical capacity to innovate, and the second one having to do with the economic-financial component. Furthermore, the study shows marked differences among the regions and their industrial sectors.

Mariane Françoso

The insertion of Global South resource-rich places in knowledge networks: Rio de Janeiro in the offshore oil knowledge network

Recent literature has pointed that the technological challenges posed by new natural resources reserves can contribute to the local development of knowledge-intensive activities in natural resources-rich countries. However, knowledge generation is a complex and highly concentrated activity, and this concentration is increasingly happening at the city-level. In this context, we propose the following research question: Which Global South cities from natural-resource rich countries are managing to participate in knowledge generation networks? Which factors contribute to it? In order to develop the analysis, we investigated the offshore oil segment. We designed a network based on patents data from 2007 to 2017 and did a k-core partitioning. We found out that Rio de Janeiro is the only city from a Global South oil-rich country which is inserted in the most core layers of the offshore oil knowledge network. The city concentrates the local NOC research center and also foreign

companies' R&D facilities, which contribute to the access to external knowledge and to the interaction with other places in the network.

Track D – Digitalization, new business models and organizational practices

Friday 10.15-11.30 (Parallel sessions 5)

Friday 12.30-13.45 (Parallel sessions 6)

Room: F204

Parallel session 5

Mæhle, Natalia

Green crowdfunding: New business model for sustainable value creation

Green crowdfunding – fundraising for sustainable initiatives from a large number of unrelated individuals – has become a growing source of alternative finance for sustainable entrepreneurs. Despite the increasing focus on sustainability, green initiatives often experience problems to get financing from traditional sources, and lack of financial resources is one of the major barriers to launching sustainable projects. To overcome this challenge, crowdfunding has become an alternative business model for financing sustainable innovations. Several green crowdfunding platforms have newly established and most of mainstream crowdfunding platforms have attracted a large variety of sustainable projects. Despite the rapid growth of green crowdfunding, research on this topic remains limited. To cover this gap, the current study explores the business model of green crowdfunding from three perspectives, i.e. funders, founders and platform. In particular, we focus on how various models of green crowdfunding contribute to sustainable value creation through increased consumer involvement. We argue that consumers' influence on the crowdfunded projects goes beyond providing the capital. Founders of sustainable projects admit that during their crowdfunding campaign they get valuable feedback from consumers, which allows them to enhance their products and test their concept. Green crowdfunding platforms provide consumers with an opportunity to engage with sustainable projects in a variety of ways, and the degree of consumer involvement will depend on the type of crowdfunding model. In some cases, they take on a more passive role of a donor (e.g. donation-based and reward-based model), while their role can be extended to the shareholder status in the equity-based crowdfunding, where consumers get a possibility to be involved with the project after the crowdfunding campaign has been finished. The current paper contributes to the limited literature on green crowdfunding by illustrating how green crowdfunding may become one of the driving forces of sustainable value creation.

Christensen, Jesper Lindgaard

Crowdfunding – dissolving the geography of finance?

The entrepreneurial finance literature argues that investors prefer to invest in close proximity to investee firms to facilitate better information exchange, due diligence and investment decisions, and post-investment monitoring. However, crowdfunding has different geographies than e.g. venture capital. Actors are often anonymous, as on stock markets, and geographical proximity seems irrelevant. Contrary, research indicates that also on-line platform-investors prefer close proximity in investments. However, previous research studies large markets such as the U.S., Australia, U.K., Italy, possibly affecting the extent to which there is an investment 'home bias'. The first of two interrelated research questions in this paper asks whether, even in a small, dense country like Denmark, there are still geographical effects on direct financing mechanisms like crowdfunding. Affirmative answers to this question provide a rationale for a regional policy discussion. New modes of financing and new actors arguably smoothens the financial system and could potentially alleviate some of the regional financing gap, which is said to hinder development of innovation and entrepreneurial ventures. Following this reasoning, bottom-up driven, private crowdfunding initiatives should be given room for unfolding opportunities for groups at the financial markets (nascent entrepreneurs) who are potentially otherwise marginalised and rationed. Contrary, it could be argued that a more extensive regulation of crowdfunding, as pursued at other parts of financial markets, is expedient and that crowdfunding de-couples finance and competences, contrary to what has been strived for in recent capital market policies. Therefore, the second research question is: how should the upsurge of crowdfunding be perceived from a regional innovation policy perspective?

For assessing the 'large market effect hypothesis' methodologies used in other, recent studies are replicated. Information from Danish Crowdfunding Association is supplemented with data from the Kickstarter platform. Policy documents, business angels associations, and regional business development agencies inform the policy discussion.

Ejaz, Mohammad & Pinheiro, Rómulo

Innovation in higher education: From Contributor to Driver of Internet-Based Service Innovation

Like firms, higher education institutions (HEIs) are faced with a multiplicity of external demands and increasingly operate in a highly competitive global marketplace. As largely publicly-run and funded institutions, HEIs are being pressured by their host governments to do more with fewer resources, and thus are being urged to innovate and come up with new solutions to both new and existing problems. Yet, given their public character, HEIs are expected to adopt processes and practices that are easily accountable, making the integration of (open) knowledge from external sources a strategic imperative in contemporary HEI management. That said, little is yet known about how HEIs are resorting to open innovation as a means of addressing increasingly complex technical and institutional environments. Thus, this paper contributes to, first, the growing literature on open innovation within services and, second, the knowledge gap within the field of digitalisation of public services by analysing the development of a virtual mobility master's-level program at a leading research-intensive university based in the Nordic countries. In so doing, we address the following research question: *How can the innovation process in higher education be characterised, and how does it evolve over time?* The paper provides valuable lessons for both theorists and practitioners

Paralell session 6

Hoff, Steffen Sangolt & Pettersen, Inger Beate

How Lean Start-up can make a change in large organizations?

Lean Start-up is a methodology widely used in entrepreneurial ecosystems, aiding new ventures to accelerate their innovation process, using iterative product development cycles and early involvement of users. Lately, large organizations have started to recognize the value of using the methodology to accelerate and enhance internal innovation processes. It is however likely those large organizations would meet other challenges and additional barriers than do small and new organizations, because of organizational inertia and bureaucracy. It is also interesting to explore whether Lean Start-up may modify and transform larger organizations to become more ambidextrous, combining exploration and exploitation activities in an efficient way. Nevertheless, empirical research on this emergent phenomenon of Lean Start-up in large organizations is scarce. This study contributes with research on this emergent phenomenon carrying out a multiple case study investigating the experience of two large Norwegian organizations having implemented the Lean Start-up methodology. The study has two research questions and investigates: 1) how the implementation of Lean Start-up affected organizational structures and culture, and 2) how the implementation of Lean Start-up affected product development practices?

The findings of the research show that the large organizations experienced considerable barriers when implementing Lean Start-up because of conflict with existing structures, routines, incentives, cultures and norms. Particularly, it was challenging to implement a team-organization across departments and functions, e.g. teaming up ICT-people with business developers. Typically, management had not assigned specific and sufficient time to work in Lean Start-up teams. On the other hand, working in cross-disciplinary teams proved valuable and contributed to accelerate the innovation process. Innovation and product development speeded up, user- and customer involvement increased and creativity and brainstorming culture emerged. Both organizations now

practiced enhanced iterative product development cycles, and rapid prototyping and testing including the emergent use of MVP's (minimal viable products).

Thapa, Raj Kumar & Iakovleva, Tatiana

Responsible digital disruption- the case of e-Health

Digital disruption in healthcare happens rapidly, and while the promise of new technologies in this sector provides hope for quality care affordable for every citizen, digital disruptive technologies might also lead to unexpected consequences. In this study we address the issue of responsibility in digital disruption. Responsible Innovation is a process that seeks to promote creativity and opportunities for science and innovation that are socially desirable and undertaken in the public interest. Based on the longitudinal case study of six e-health start-ups, we explore how those firms conform with their purpose of providing better care through exercising stakeholder inclusion, anticipation of risks related to technology implementation and reflective practices. We conclude that in order to achieve truly disruptive outcomes, new ventures need to exhibit a certain set of practices to ensure responsible outcome of entrepreneurial activities. We conclude by discussing implications of digital disruption in healthcare for both entrepreneurs, policymakers and general public.

Kahilaniemi, Sini

Buying Witty Cities: Keys of success via Innovative Public Procurement

Generally main aims of innovative public procurement are typically the improvement of the productivity, quality and effectiveness of public services and creation of demand for novel products and services developed in the private sector. Innovative public procurement as a term has various definitions, but generally refers to public purchase of the innovative goods or services, procurement of R&D services, innovative design and delivery of public services and/or innovative procurement processes and models.

Significant scale of public procurement (roughly 20 % of GDP) illustrates the vast potential of accelerating the development, commercialisation and diffusion of innovative solutions as well as the opportunities to pursue for better, smarter and more sustainable solutions for various societal needs. Transport and mobility sector has been rapidly evolving in the past years and both the public and private sector has to adapt to these changes. From the innovation policy viewpoint this sector has been ranked as one of the most potential sources of innovation and growth. Public sector then aims at improving public services and deepening PPP-collaboration.

This paper describes the research design, main terminology and initial observations of the ongoing research of innovative public procurement practices in the Finnish smart mobility and transport context. The following research questions are to be answered in the study: What are the critical points of innovative public procurement process? What are the main elements of successful procurement both from the public and private sector point of view? How does the innovative public procurement practices add value to the development of transport system?

Track F – Proximities, agglomerations and networks

Thursday 10.15-11.30 (Parallel sessions 1)

Thursday 13.30-14.45 (Parallel sessions 2)

Room: F203

Parallel session 1

Germain, Eloïse & Moghadam-Saman, Saeed

Providing doctoral skills to the regional labour market: Cases of University relations with Science Parks

Universities are the only providers of doctoral skills, that are generic and specific skills acquired during doctoral training, such as research project management or scientific expertise. Doctoral education had in the beginning been designed to answer the needs of academia essentially. However, in the recent decades, more doctorate holders find employment outside academia. Doctoral education thus seems to be one of the tools of universities to have an impact in the development of their regions, for example when their graduates get employed locally. The objective of this study is to explore how the needs for doctoral skills are anticipated by local employers, and how universities answer those needs. Science and Research Parks situated next to universities were chosen as cases of study. In such parks, employers are local, and most of them conduct R&D activities that call for doctoral skills. Interviews were conducted at a new Science Park in Sweden and at an established Research Park in Spain. Both of these cases have adopted Triple Helix configurations. In Sweden, the municipality, the local campus of a university, two multinational companies and several small companies are involved in the Science Park. In Spain, the Research Park is part of the campus of the university, and its members are mainly small companies and public research institutes. Interviews will be analysed using the Gioia methodology. Similarities in the two cases will be looked for. Discrepancies are also expected, as cases differ in age, configuration, geography and culture. These cases will highlight implications for several stakeholders: university managers and doctoral schools in adapting the curriculum of doctoral education, for company leaders in anticipating their needs and communicating with universities, for policymakers in designing labour market policies for instance and for doctoral students themselves in the building of their own education and career path.

Tuitjer, Gesine

Innovation biographies of sustainable craft-food products from peripheral regions

The paper tackles the network development behind innovative craft-food products. The development of the innovative product and concomitantly the development of the manufacturing business are at the forefront of this paper. We can show how both local “buzz” and “global pipelines” are important throughout different stages of the innovation processes. The innovative idea stems from global flows of knowledge, introduced to the local context through the entrepreneur. As the food innovation materializes from seed idea to prototype and finally to marketable product, local networks become increasingly more important. The paper takes a look at the establishment of both local “buzz” as well as “global pipelines” which influence the successful development of the businesses. It can be shown how the entrepreneurs indeed create the local buzz by purposefully establishing a network of like-minded entrepreneurs. Although business-related, these relations are not exclusively of an economic nature but rather reflect a community of like-minded individuals, oriented towards a sustainable and healthy lifestyle. To analyze the processes behind successful innovations in rural areas I use the method of innovation biographies (Butzin et al., 2012). This is a tool suited to the ex-post, reconstructive analysis of the processes, agents and practices behind innovation. Data stem from a recent pilot program targeting (social and economic) innovation and business linkages to foster growth in 13 among the most peripheral German regions. Out of this program a number of craft-food businesses emerged. Four ongoing case studies (comprising a total of 18 semi-structured interviews) are used for this paper. As a tentative result one can deduce the relevance of local embeddedness and extra-local relatedness at different stages of the innovation process. While extra-local knowledge is important in fostering the seed innovative idea (by definition new, at least to the context) and the marketing of the final craft-product, local ties are relevant in the

actual production process. The importance of extra-regional and global connections even to small craft-food businesses calls into question regional growth policies which focus too narrowly on endogenous growth, ignoring the importance of global knowledge flows to innovation processes.

Solheim, Marte Cecilie Wilhelmsen; Herstad, Sverre & Engen, Marit

The imprints of urban location on human resources and innovation in knowledge intensive services

Research on knowledge intensive services (KIS) increasingly emphasize the dependence of services provision and innovation on the experience-based knowledge and interactions of employees. It echoes research more generally demonstrating how innovative efforts and outcomes cannot be understood solely through the lenses of R&D expenditures and collaboration, but interlinked with the larger human resource bases. As services employment tend to concentrate in large-city regions, this raises questions of whether i) the defining characteristics of urban locations that are density and diversity of economic activities leave imprints on the human resources bases of services firms in manners that ii) have implications for innovation. Urban locations foster cross-fertilization through inter-sector labor market mobility reflected as diversity of experiences accumulated by firms. Urban economics argue that vibrant urban labor markets match better employers with employees. From the 'cognitive resource perspective' diversity of human resources can be expected to nurture innovation as it stimulates creativity, reduces the risk of lock-in to established practices and provide firms with the resources required to successfully experiment with new ones. This may be particularly important for innovation in services, due to its intangible, distributed and complex character, and where employees' interactions with customers are often the source for innovative ideas. In line with this, a diverse workforce allow firms to reach equally diverse marketplaces, and informal networks of diverse employees shape the formal networks of their employer services firms. Urban locations can be expected to foster innovation in services because they foster diversity in the internal knowledge bases of firms and provide privileged access to markets and networks. However, the contrasting "similarity attraction perspective", arguing that homogeneity of the work force lubricate interactions and provide basis for more efficient execution of complex tasks, the same intrinsic characteristics of services can be expected to reduce the capacity of firms to translate diversity into innovation. Reflecting this, project teams in services exhibit lower capacity for cross-departmental collaboration, than project teams in manufacturing. Moreover, the urban economy advantage that is employer-employee matching through vibrant external labor markets may be counteracted by the disadvantage that is less stability conducive to long-term knowledge accumulation and refinement of organizational routines. Finally, the option of 'learning through recruitment' may reduce the willingness of firms to actively engage in development work. This suggests that services firms located outside large-city regions exhibit less diverse knowledge bases and turnover of employees that provide the basis for more success in innovation. This paper uses Norwegian Community Innovation Survey data (CIS) linked with employer-employee data (LEED). Knowledge bases of firms are described in terms of variety of experience-years accumulated by employees. The results demonstrate how KIS in urban Norway exhibit higher employment turnover and more diverse human resource bases than their rural counterparts, and are more capable of transforming these influences and resources into support for service process innovation. The result is significant urban-rural dividing lines in innovation propensities that are linked specifically to interactions between internal organizational processes, and influences from surrounding industrial configurations conveyed by the labor market

Brustenga, Jordi Garcia

The new role of local scale in research & innovation systems

This article highlights the need for greater involvement of the local-scale in the research and innovation systems and strategies. In the past, this has been an aspect that would have deserved more attention. Their role has been underestimated by most of scholars and managing authorities responsible for the strategies.

As emerged from literature review, the local dimension, especially in case studies of big cities, has been recently achieving a more central role in the innovation field. Aligned with this trend, this paper attempts to point out four reasons why local scale should be an important part of the system and, therefore, take part on the strategy. Compared with the regional scale, the local one is likely to approach innovation in a more holistic perspective, to better choose specialization domains, complementing the diversified regional framework, to better manage trust formation processes due to their proximity and to be the optimal context to anchor agency and global institutionalization. Finally, the evaluation and revision of the European Union smart specialization strategies (RIS3) are an opportunity window to keep on researching and disseminating in this field, especially on local RIS3 case studies already in sight. With a view to the next programming period, it would be desirable to include a new ex-ante condition on the participation of sub-regional scale in the development of innovation policies, in a collaborative multi-level approach.

Parallel session 2

Calignano, Giuseppe; Fitjar, Rune Dahl & Huber, Franz

Reputational proximity: Towards a new concept in the geography of innovation?

The role of reputation is often overlooked in economic geography, but may have an important impact on the formation of networks. Therefore, the present paper proposal aims to integrate the study of reputation into the debate on the effects of proximities in knowledge exchange dynamics. We propose the concept of 'reputational proximity' as a useful addition to the discussion. We define reputational proximity as 'the level of similarity of perceived reputation between collaborating organizations'. Based on a limited number of recent studies sketching out the relevance of reputation in inter-organizational interactions, our hypothesis is that the way organizations perceive themselves and potential partners contribute to shaping the frequency and intensity of collaborations in inter-organizational networks.

The notion of 'reputational proximity' in interactive learning and knowledge exchange dynamics will be theorized in the proposed paper. Based on and extending Glückler and Armbrüster's (2003) reflections, a conceptual model that take into account 'public reputation', 'experience-based trust' and 'networked reputation' will be proposed in order to illustrate how organizations generally perceive reputation. We further discuss how other dimensions of proximity, as presented by Boschma (2005), could substitute or complement for a lack of reputational proximity between collaborating organizations. Lastly, the application of the concept in forthcoming empirical analyses and potential methodological issues are explored. Insights from various research streams and disciplines, such as corporate reputation, sociology, social psychology and network studies, will be systematically integrated in the paper. The final objective is to provide a comprehensive conceptualization of reputational proximity and outline its future development in the geography of innovation literature.

Makkonen, Teemu & Mitze, Timo

The relationship between internal and external knowledge sources for firm productivity

This work studies the linkages between firm productivity, internal knowledge creation activities and spatially bound knowledge spillovers. The latter are modelled to emanate from intra- and extra-sectoral linkages between the firm and its regional business environment. We specifically test for non-linearities in the relationship between internal and external knowledge sources and quantify their joint marginal effect on firm productivity. Our empirical results using data for German manufacturing firms linked to information on the firms' regional business environment underline the general importance of knowledge spillovers in driving productivity and point at mutual interactions. Firstly, we find that intra-sectoral knowledge activities only have a statistically significant effect on firm productivity when extra-sectoral knowledge spillovers are sufficiently large. Secondly, we find that the link between knowledge spillovers and productivity varies with the level of the firms' internal knowledge creation activities: highly patenting intensive firms can best exploit external knowledge sources for productivity improvements in spatial environments driven either by extra-sectoral (e.g. in large metropolitan regions) or intra-sectoral (e.g. in distinct industrial districts and business clusters) linkages. From a policy perspective, our results indicate that innovation policy should promote both specialization and diversification – particularly if the goal of the policy is to support a large group of companies, rather than just the most innovative ones. If the goal of a policy is to support firms with a very high patenting intensity, then policy-makers should embrace either specialization or diversification strategies prevailing in the firms' geographical environment, but not both at the same time.

Haus-Reve, Silje & Cooke, Abigail

Understanding the Regional Drivers of Productivity Benefits from Immigrant Diversity: Evidence from Norway's Variation in Regional Institutional Inclusiveness

People born in different countries often complement each other in the labor market. One aspect of this rests in theory that suggests interactions among heterogeneous agents could augment productivity by enhancing problem-solving and creativity (Hong and Page, 2004). Immigrant diversity could augment productivity by enabling the combination of different skills, ideas, and perspectives. But theory also suggests that diversity could diminish productivity by raising the costs of inter-group interaction and co-operation.

While much of the empirical research so far suggests diversity is a net positive for productivity (e.g., Ottaviano and Peri 2006; Lee 2014; Kemeny and Cooke 2018), less well understood are the regional conditions under which diversity can be an economic asset. As institutions regulate transaction costs, inclusive institutions that encourage interactions across difference should enhance any beneficial effects of diversity. Research in the United States context has shown that the reward from immigrant diversity is higher in metropolitan areas that feature more inclusive institutions (Kemeny, 2012; Kemeny and Cooke, 2017).

In this paper, we triangulate across several measures that differently capture the inclusiveness of regional institutions. We use Norwegian Monitor data containing survey data on social attitudes and values of people at the regional level over time (2000-2010) to create measures of regional bonding, bridging, and trust. Using multiple measures increases confidence that they capture the hard-to-measure and likely multi-dimensional characteristics of inclusive institutions. The time varying nature of these regional measures is novel to the literature as far as we are aware. We show that even in Norway, with internationally high levels of social capital and trust, we find variation over time and across regions in the different measures of social capital. This is important and needs to be taken into account in these studies.

These institutional measures are then linked to a matched employer-employee dataset, LEED, spanning 2000 to 2010. Grouping individuals in regions, we predict how their wages (our measure of productivity) respond to changes in the diversity of their region as well as their workplace, and how that relationship is modulated by variations in regional inclusive institutions. Models are estimated on a sample of individual multi-year job spells, within which workers remain in a single establishment and region. This permits a fixed effects estimation, allowing us to absorb stationary unobserved heterogeneity for individuals, their workplaces, and their regions. Aside from its longitudinal nature, an additional virtue of LEED is that it enables us to measure changes in diversity not just in regions but also in establishments; this permits identification of the specific contexts – either regions or workplace – where any productivity effects may reside.

Overall, we test the following hypothesis:

The effect of regional and workplace diversity on productivity will be more strongly positive for workers in regions that have more inclusive institutions.

Brynthe Lund, Henrik & Steen, Markus

Changing GPNs: Manufacturing reshoring due to Industry 4.0?

The offshoring of manufacturing activities from developed to emerging economies has been a dominant trend since the 1970s. This offshoring took place due to various reasons related to gaining comparative advantages, such as lower labour costs or access to consumer markets. However, in recent years a global shift-back trend has emerged whereby manufacturers are reshoring (parts of) production to their home country. Like offshoring, reshoring (or home-/backshoring) occurs for several reasons. This paper however, emanates from the observation that reshoring is somehow connected to the implementation of novel and advanced manufacturing technologies. These technologies, often bundled under the rubric of 'Industry 4.0', enable smarter and more autonomous production lines. Consequently, the number of workers in manufacturing is reduced and the knowledge demands for those who remain increases.

The literature on reshoring is dominated by management and logistics researchers emphasising changing cost structures and agglomeration effects as key reshoring rationales. However, reshoring of manufacturing activities is a location decision and has explicit geographical outcomes – and also, we suggest – geographical explanations. We therefore find it timely for economic geographers to partake in research on manufacturing reshoring, and focus here on how the introduction of new digital tools, automation and robotization currently occurring in manufacturing sectors may 1) influence reshoring decisions, 2) how decisions must be seen in light of the production networks they are embedded within, 3) is contingent on and creates demand for new knowledge within these firms. To address this topic, we study recently reshored Norwegian manufacturing companies. Employing a qualitative case based research approach and drawing on concepts from the GPN framework the paper aims to provide a novel approach to understanding the reshoring phenomenon, explore how manufacturers in a high-cost country have been able to (re)construct comparative advantage in global manufacturing industries, and to address policy implications.

Track G – Regional policy development, implementation and assessment

Thursday 10.15-11.30 (Parallel sessions 1) – Room F204

Thursday 13.30-14.45 (Parallel sessions 2) – Room F204

Thursday 15.00-16.15 (Parallel sessions 3) – Room F203

Friday 12.30-13.45 (Parallel sessions 6) – Room F106

Parallel session 1

Fitjar, Rune Dahl; Benneworth, Paul & Asheim, Bjørn Terje

Towards Regional Responsible Research and Innovation?

There have been two conceptually different policy ideas central to the EU's innovation policy in recent years: Responsible Research and Innovation (RRI) and Smart Specialisation (RIS3). As innovation policies, both RRI and RIS3 share some similarities, arguing for a broad stakeholder involvement in the development of innovation policy and of individual innovations. Likewise, both these approaches emphasize the need for research and innovation to be oriented towards solving grand societal challenges. However, despite the apparent similarities, there are substantive differences in the networks, norms and practices with which they have become associated. To bridge this gap we explore these two concepts to ask the question of how they can usefully be combined in an integrated innovation policy framework. This paper explores the theoretical underpinnings of RRI and RIS3 policy, highlighting how the core idea in each approach remains a lacuna in the other. It then discusses what an integrated framework incorporating key elements of each – a regional responsible research and innovation policy – would look like. Regional RRI combines the two approaches, recognizing the regional community's role in defining what responsible research and innovation means, in granting scientists and innovators a license to practice, and in developing the innovations themselves through a networked innovation approach. It also explicitly recognises the links to non-local communities both in terms of regions' moral and functional responsibilities to – and interdependencies with – other communities.

Caloffi, Annalisa; Freo, Marzia; Ghinoi, Stefano; Rossi, Federica & Russo, Margherita

Financial incentives, behavioral incentives or both? Some evidence from the analysis of small business policies supporting the acquisition of knowledge-intensive services

The paper focus on the evaluation of a specific policy field that, despite its diffusion, has received relatively little attention: the provision of public support to private firms for the purchase of services, very often of knowledge-intensive ones (Bakhshi et al., 2015; Bruhn, 2018 are notable exceptions). These policies often target small and medium-sized enterprises (SMEs), which are provided with small-scale subsidies that reduce the cost of purchasing services. Very often, subsidies take the form of small-scale vouchers that firms can spend at some accredited service providers or even on the market (OECD, 2000; Storey, 2003; IEG, 2013).

The underlying assumption of these policies is that firms can identify the type of services they need, as well as the supplier who is able to deliver them, which – particularly in the case of SMEs – is not necessarily true. Also to overcome this problem, in some regions of the world, policymakers have funded the creation of intermediaries that provide technological check-ups and advice to firms to help them understand their needs.

Adopting a counterfactual approach to policy evaluation, we assess whether the mix between the two policies (voucher plus intermediary) is more effective than the single interventions. Our empirical analysis focuses on two regional policies implemented in an Italian region in the period 2011-2014, one aimed at providing vouchers to SMEs for the purchase of knowledge-intensive services, and the other supporting the activity of innovation intermediaries. The results show that the policy mix outperform the single policies. This suggests that financial and behavioural incentives should be combined to support the activity of SMEs.

Karlsen, James & Larrea, Miren

How policy can enhance the transformation of University towards the third mission: A case study from a transformation process in the Basque Country

A part of the increasing literature about the role of higher education institutions (HEIs) in regional development is normative arguing that HEIs should be engaged with their surrounding societies. It is multilateral organizations like (McCann & Ortega-Argiles, 2013) like the European Commission and OECD that has been most eager in the discourse by making best practice examples and international network for learning and knowledge sharing (Foray et al., 2012; OECD, 2004). The aim of this discourse has been to stimulate interests on the national level to support third mission activity (Benneworth, Zeeman, Pinheiro, & Karlsen, 2017). By third mission, TM, we refer to some kind of common activity and engagement between the HEI and external partners in society to generate and apply new knowledge (Benneworth, Zeeman, et al., 2017, p. 150).

Our argument is that an abstract and by first glance a simple idea as TM, is very complex when taken to practice. It is a complexity that is not much discussed in the literature about the TM. We will explore the complexity of the TM from the approach of the common engagement between two different types of institutional actors': policy makers and universities. This can create tensions and dilemmas both in the relationship between the two institutional actors as well as inside university as an organization (Benneworth, Pinheiro, & Karlsen, 2017). However, we know less from this process from the approach of the policy maker. In this chapter, the aim is to explore the policy learning process from the approach of policy makers in the Basque Country. The research question is: *How does policy enhance the transformation of university towards the third mission?*

Ljunggren, Elisabet & Haugum, Margrete

When the answer is «gender balance», what is the question? A policy analysis of a Norwegian regional innovation program

Innovation is regarded as a driver for welfare, economic growth and competitive advantage. Hence, stimulus of innovation by innovation policy and means is seen in most developed countries. This paper study one Norwegian policy program; The Program for regional R&D and innovation (VRI) and its policy context. VRI aimed at increasing regional research and innovation in triple helix. However, VRI is also implemented in a country that scores high on gender equality and apply gender equality policies to achieve their welfare state goals. One rationale behind this is that gender equality is important to utilize all human resources in a society, especially when it comes to employment and economic issues. In Norway, for instance, it is calculated that the high employment rate of women have been more important for the nation's economic development than the oil revenues. So, what happens when innovation policy meets gender equality policy? Applying a policy analysis approach, we ask: What happens when gender equality is introduced into an innovation policy program?

The data consist of documents produced in the period 2004-2016, and in total five White papers on innovation/research and gender equality, one governmental action plan, Research Council Norway's gender equality action plans (two) and three program plans for VRI. The data is analyzed both by numbers (descriptives of words) and by analyzing text excerpts from the data.

The preliminary findings indicate that the gender equality policy "ripple down" from White papers to action- and program -plans and actually impact the wording in the VRI program plans. However, innovation and research policy have "right of way", and gender equality is less prominent. We see that the term 'gender balance' are increasingly used, while the use of 'gender equality' decrease. In spite of the nature of the VRI-program, the use of the word 'innovation' increases significantly. The findings from the text excerpts elaborate on these findings.

Parallel session 2

Tsai, Huiju

An Analysis of Innovation Policy in Taiwan

This research aims to examine the national innovation system and innovation policies in Taiwan by using an analytic framework based on the concept of startup lifecycle.

Innovation requires the successful practice of the startup lifecycle. OECD and Eurostat (2005) defines that an innovation is “the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations.” Accordingly, how successful an innovation is depends on how far the processes an innovative firm can reach- from getting innovative ideas to making products and expanding the markets.

Effective innovation policies should be able to support and enhance the exploitation and commercialization of innovation activities in the system. When innovative firms grow and develop through the phases- getting ideas, seed, growth and mature- of the startup life cycle they increase their added value and recruitment. The higher phases a firm goes through, the more value it can generate and the more workers they can hire. This provides a hint for innovation policy making. In this research, I argue that government should commit to enhance the national innovation system in which firms through the startup life cycle can be well-supported. An analytic framework encompassing five levels of the startup cycle is thus proposed.

Level 0: Foundation- institution, infrastructure, market and financial system and human capital;

Level 1: Getting ideas- innovation environment;

Level 2: Entrepreneurship- ease of starting business, and tax and financing system;

Level 3: Doing business- business support and industrial clusters;

Level 4: International connection- international linkages and global trends.

Current innovation policies in Taiwan will be categorized based on the five levels and then further analyzed. By this examination, the research aims to answer a question: what are the strengths and weaknesses of Taiwan’s innovation policies? This study aims to provide a new way of thinking for innovation policy making in Taiwan.

Nordling, Nadja

Collaborative and participatory regional economic development: platform-based innovation policy in six Finnish cities

The concept of an innovation platform has recently become popular in regional studies literature, and likewise in policy and practice spheres, but remains theoretically under-developed and untested in diverse regional policy settings (cf. Cooke, 2012; Harmaakorpi & Uotila, 2006). This paper sets out to further develop the term for it to be used as a more structured analytical tool for theory as well as a device for policy-making.

The research takes a participatory action research (PAR) approach to examine the practical implementation of a real-life platform-based innovation policy initiated by the six biggest cities in Finland (the Six City Strategy). This huge policy, worth 100m €, goes beyond sectors and aims to achieve goals of openness and mutual value creation both on regional and national levels. There are over 50 organisation in over 60 projects working towards the culture of collaboration.

The objective of this research is to understand how platform-based innovation policy is implemented in practise and how are “new” actors and institutions engaged in development work. We have gathered data working in the Strategy from January 2015 to June 2018, a position that has enabled us access to data and people that would have otherwise been unreached. The data includes

interviews, workshops and seminars etc. both with the organisations in charge of the Six City Strategy projects. In addition, various reports and handbooks published about the collaborative models and over 60 projects or initiatives based on collaboration we analysed. Preliminary findings show that a clear theoretical frame for innovation platforms is yet to exist but the core of the activities both in theory and practise underline collaboration between actors. Empirical research illustrates models and processes on how stakeholders may be engaged to innovation and development work but also strengthen the presumption of how “one size does not fit all” (Tödting & Trippel, 2005). This case has studied platform-based regional development in six Finnish cities and empirical research in other regions and countries is called out for.

Serralta, Lenia M. Planas & Romero, Geraldine Fuentealba

Governance and innovation regional policy in Chile

Governance can be a new way of governing the contribution of innovation to regional development. The most relevant aspect of governance is in its quality to conduct, implement and evaluate regional policies in innovation, expressed in its impact or result on social capital, institutional capital and innovative performance of the main economic regional agents.

During the 2011-2013 period, the Chilean regions formulated the first regional innovation strategies, participating ten out of fifteen regional governments, with technical support of the European Commission, through the Innovation and Competitiveness Program between the Chilean Government and the European Union.

The regional aspect of governance in innovation policy has been scarcely studied in Chile and seldom have the lessons obtained and the evaluations performed in the European regional arena been transferred, despite the many existing experiences.

In Chile, up to 2017, only the Government of the Region del Libertador Bernardo O'Higgins had evaluated their regional innovation strategy, demonstrating that governance is a critical aspect not accomplished.

In this case, the technocracy was responsible for the implementation and evaluation of the action plan of regional policy. The evaluation exercise showed that there was no strategic drive at the political and institutional level, which led to a scarce participation of private agents and other public services in financing the implementation of regional policy.

The regional institutions do not question the reasons behind financing with public resources the innovation of private companies. Moreover, there is no attainment of an interactive regional process to promote the technological innovation in the private, the scientific technological and the public sectors; prevailing a scarce capacity to comprehend and evaluate the future role of governance in the Chilean regional innovation policy.

Zubeldia, Elias Artigas

Innovation camps: Valencian experience

Nowadays, public administrations are asked to manage better than ever their budget, since economic resources are more limited than in the past. Money has now to be allocated with a high sense of responsibility only in sectors where it is really needed and productive.

In order to achieve this, European regions have implemented RIS3, prioritising the most powerful areas of economic activity through the Entrepreneurial Discovery Process (EDP), a process intended to develop new innovation “discoveries” which eventually will become new economic strengths, and “must be carried out within the framework of strategic interactions between the government and the private sector”¹. The European Association of Development Agencies (EURADA), as partner of the Interreg project Beyond EDP, has promoted innovation camps² as a tool for better implementing the

EDP. Developed by Aalto University and the New Club of Paris, they are meant to identify and tackle locally the societal and economic challenges that a region faces, applied to RIS3 by the JRC and the CoR.

Each region has faced their development in a different manner. EURADA has identified several formats, and has analysed different ways of implementation in Brussels, Catalonia, Gabrovo and Valencia, focusing on the latter. There they are called “labs”, being a process of dialogue between QH, energized by an initial group led by the Valencian government. It defines specific challenges on which to focus innovation policies, with the purpose of facilitating the EDP.

As a result, three labs have been created till now: agri-food, industry and sport. They are intended to create and develop a local culture of innovativeness.

Parallel session 3

Asheim, Bjørn Terje

The role of clusters in new path development in smart specialisation strategies

Smart Specialisation (S3) is not about ‘specialisation’ as is known from previous regional development strategies, i.e. a Porter based cluster strategy, but about diversified specialisation. What it means is that countries should identify ‘domains’ of existing and potential competitive advantage, where they can specialise in a diversified way compared to other countries and regions. Countries should diversify their activities primarily based on existing strengths and capabilities by moving into related or unrelated sectors.

When designing and implementing smart specialisation strategies for economic diversification, it is necessary to go beyond ‘path extension’. The focus must be on promoting new industrial path development, i.e. path upgrading (renewal, climbing GVC, niche development), path importation, related path diversification (regional branching), unrelated path diversification (unrelated knowledge combinations), and path creation into new industries which represents the most radical form of structural change (i.e. transformative activities).

What role can clusters play for new path development in S3 strategies? While the focus of S3 is to go beyond path extension and promote new path development and transformative activities on a sub-sectoral level, the aim of traditional cluster policy is to support path extension most often on a sectoral level (e.g. as is the case in the Norwegian Innovation Cluster programme). In traditional cluster policy there is a much weaker or no focus on diversification of firms in the cluster through restructuring of existing firms (upgrading and related path diversification), or through the establishment of new transformative activities in the cluster (unrelated path diversification and new path creation). Thus, for clusters to play a role in S3 strategies in the future they will have to diversify in a different way compared to other clusters nationally and internationally.

The paper will discuss the potential for clusters achieving this by using the framework of the opportunity space for regional industrial path development in concrete geographic and abstract economic space. Examples of such diversification strategies could be upgrading strategies of climbing GVC, cross-fertilization between clusters locally and non-locally based on related and unrelated knowledge combinations, or exposing traditional clusters to local and non-local Key Enabling Technologies to promote unrelated path diversification and new path creation. Empirical illustrations will be taken from Norwegian, Austrian and Italian clusters.

Koschatzky, Knut; Kroll, Henning & Stahlecker, Thomas

Innovation-based regional structural change - A new regional policy paradigm in Germany

In Germany, the European and national system of regional support, which since German unification in 1990 has been primarily geared towards the eastern German Länder and their regions, is to be extended to all structurally weak regions from 2020 onwards. A major new element will be the focus on innovation. The economic and innovative strength of German regions will no longer be oriented solely to their location in eastern or western Germany, but to structural deficits in terms of the knowledge base, corporate structure and economic performance.

So far, indicators such as unemployment rate, gross annual wage and regional infrastructure have been used to define structural weakness. These indicators do not reflect the innovative capacity or strength of a region. The indicators must therefore also be adapted for an extended support system. Against this background, this paper focuses on the innovation policy component of a system for promoting structural change in structurally weak regions in Germany. It addresses the following questions:

How can innovation-based regional structural change be theoretically explained, defined and measured?

What are the causes of regional structural change? How can these causes be influenced?

What are the policy starting points for innovation-based regional structural change, which instruments and measures are appropriate here?

In order to answer these questions, theoretical approaches dealing with different facets of regional structural change will be discussed. Subsequently, innovation policy arguments of structural change are presented. This is followed by a regional typology of structurally weak and strong regions derived by indicators such as unemployment rate, commuter balance, net migration rate, R&D expenditures and share of industrial gross value added. Finally, conclusions are derived by answering the research questions.

Coenen, Lars; Goedegebuure, Leo; Veldhuizen, Caroline & Wilson, Bruce

Smart Specialisation in Australia: policy mobility or experimentalist policy?

Regional development and regional policy have very different traditions, meanings and practices in Australia compared to Europe. Different from other regional development contexts internationally, Australian regions are defined, not by what they are, but by what they are not: non-capital-city places (Eversole, 2017). Moreover, regional economies in Australia (encompassing regional, rural and remote Australia) are typically (and often deliberately) derivative providing primary commodities for national and international markets (Wilson et al., 2015). This implies major 'translational' challenges for regional development models that emphasize innovation, entrepreneurship and discovery (Veldhuizen, 2016), such as the EU-based smart specialization approach. Pressured by the transition from a resource to a knowledge economy, governments in parts of the country, such as Gippsland in South-Eastern Victoria, have begun to adopt policy strategies and tools associated with Regional Innovation Systems approaches and Smart Specialisation. The question that this paper explores, is whether and how the industrial, institutional and social dimensions in Australia, which vary markedly from those in Europe where these theoretical and policy frameworks have largely developed, influence their ability to bring about change.

In analyzing this question, the paper compares Australian Smart Specialization Strategies as policy mobilities versus policy experimentation. The former emphasizes the models, mechanisms and limitations of global policy transfer (Peck and Theodore, 2010) while the literature on policy experimentation would emphasize that Smart Specialisation builds on a longer tradition of regional

experimentalism in Europe (Coenen, 2017) that aims to promote partnerships between the private and public sectors, facilitate the exchange of know-how within and beyond the regions to overcome parochialism and, finally, to mainstream the positive lessons of local experiments (Morgan, 2004). These literatures provide profoundly opposite perspective on the feasibility of smart specialization in Australia and allow for a critical reflection on and theoretical enquiry into the merits and limitations of smart specialization as a travelling policy approach both within and beyond the EU.

Suwala, Lech & Kulke, Elmar

Transitions in Urban/ Regional Innovation Policies and their Locations since the 1990s - The case of Berlin

Since the setup of the first business incubator in Berlin in 1983 (also the first of its kind in Germany), the urban/ regional innovation policies (U/RIP) in the German Capital underwent different stages, paradigms, approaches, thematic foci and locations trying to tie up with its glorious past innovation legacy. These U/RIP incorporated manifold theoretical insights from territorial innovation model literature (e.g. industrial districts, innovative milieus, new industrial spaces, LIS/RIS/NIS, etc.) against the different EU regional policy paradigms of the “innovative, creative, and/or smart city”. In parallel, not only approaches and thematic foci, but also locations were exposed to change. Against this background, the study focuses empirically on the (almost) past three decades of urban/ regional innovation policies in Berlin since the German reunification by tracing both the fortune of the overall city-state innovation policy strategy and the development strategies of three distinct locations within Berlin (Adlershof, Charlottenburg, Schöneeweide).

Methodologically, the study rests mostly on data from policy papers, insights from manifold own research projects within the last 15 years in the respective locations and in-depth interviews with stakeholders in-charge (politicians, intermediaries, academicians, entrepreneurs). The results demonstrate the development of a more or less systematic urban approach on the policy level starting with agenda and location setting in the 1990s, followed by a cluster development approach in the 2000s, that was extended towards so-called Kompetenzentren (Fields of Competence) in the 2010s; recent tendencies point towards the set-up of a locational innovation ecosystem consisting of Zukunftsorte (Promising Places); interestingly, the promotion of the distinct city locations is by far more heterogeneous; although the outlook is promising it has to be carefully assessed if the current seminal situation is really the result of this long-term strategy or the ongoing “Berlin start-up hype”.

Parallel session 6

Nordling, Nadja; Pugh, Rhiannon & Thomas, Elisa

Regional Economic Development through Openness and Participation – Designing Participatory Enterprise Policy in Six Finnish City-regions

There has been much discussion in the literature about the problems of enterprise policy: its lack of effectiveness or the waste of taxpayer’s money. The formulation of policy is under researched and might help explain its underperformance. There is a need to understand more about enterprise policy design and formulation and to increase the efficacy and effectiveness of such efforts in the multitude of places they are implemented. This paper presents the design and formulation of a large policy currently underway in Finland. The policy presented in this paper is interesting, firstly, from a design perspective because it was explicitly formulated as an open and participatory approach, based

on the ideas of open innovation and co-creation of policy. Secondly, it is fascinating from a regional enterprise policy aspect as it brings six city-regions together to design business services, which have traditionally been designed by the national government or locally. We present a participatory action research approach conducted whilst working on the policy, which afforded high levels of access to all stages of the policy process. The paper takes an 'ecosystem' perspective to map the actors and institutions involved in the policy design, exploring efforts towards an open and participatory enterprise policy. We reflect on both the challenges and opportunities in designing a more open mode of innovation policy, and on how such participatory and multi-regional policies can be designed. We find that despite its size and complexity, by adopting a thematic design, the Six Cities Strategy has integrated a diverse array of actors, institutions, and policy tools into one framework in a bottom up manner, sensitive to regional context. The evolutionary approach has influenced the formulation as one of the key ideas is built on 'trial and error' how the direction of the policy should be flexible according to new knowledge gained during the implementation.

Matti, Cristian; Uyarra, Elvira & Flanagan, Kieron

Collaborative multi-stakeholder arena as a mechanism enabling adaptive implementation of low carbon regional strategies (in peripheral regions)

Scholarly insights from evolutionary economic geography, underpinned by concepts of path dependency and industry evolution, have advanced a policy discourse that advocates adaptive, place based and 'outward looking' interventions. Despite these developments, consideration of policy tends to be confined to the normative question of policy implications, rather than trying to understand the dynamic nature of policy, including the more 'messy' aspects to do with policymaking. On the other hand, new evidence on the implementation of EU regional policies has indicated significant gaps between the planned outputs and outcomes in terms of the capacity to communicate, manage resources and delivery in different settings.

This paper aims to go beyond this normative view and look into policy implementation and explore the links between agency, policy change and institutional change. Emphasis is put in adaptive process of co-production and co-design by looking at collaborative multi-stakeholder arena as a mechanism that facilitate the alignment of problems, solutions, interest and broad innovation ecosystem resources such as knowledge and finance as well as relational assets. Focus is put in Smart Specialization as a new territory for experimentation where linkages and articulation between actor are still not necessarily in place.

Empirical evidence from EIT Climate-KIC activities is applied to document and analyse the challenges related to implementation of S3 addressing the transition low carbon economies. In doing so, the paper provides evidence on the role of collaborative multi-stakeholder arena to support policy learning processes to design comprehensive visions, goals and rules as well as identify tools and resources to address policy problems. The main empirical material examined is a series of multi stakeholder participatory processes run in 2017-2018 in multiple-locations under the EIT Climate-KIC ecosystem with focus in the EIT RIS programme.

Henderson, Dylan

Regional Innovation policy, agency and the role of institutional work: The case of Wales

Regional innovation studies has seen an increasing focus on understanding the role of agency and actors in the regional development process. Such work has challenged the idea of actors as passive recipients of structures, rationales and ideas developed elsewhere (Flanagan et al, 2011). In

response, an emerging literature has begun to focus on the role of purposive actors in supporting and advancing regional innovation policies. This has highlighted the entrepreneurial characteristics of actors, and their role in getting ideas onto the policy agenda. Yet while this work has drawn useful attention to the policy process it has underemphasised the diversity of agency in regional policy making.

The paper explores the roles of actors in the regional innovation policy process, with reference to insights from the institutional literature (Lawrence and Suddaby, 2006). It argues that policy has institutional foundations that can lead continuity over time of instruments and policy objectives, and that the role of policy actors can support both continuity and change. In this respect efforts to introduce policy may coexist with efforts to defend existing policies against external threats, or indeed resist such change.

The research seeks to examine the actors that play these roles, the strategies they adopt, and the results achieved. It explores these questions at the regional level using the case study of Wales - one of the first regions to develop a regional innovation policy in Europe, examining how they seek to exert influence and to what ends over a ten-year period. In doing so it seeks to rebalance the focus on agency roles in the regional innovation policy literature and their contribution to supporting stability and change over time.

Ciechomska, Anna & Raunio, Mika

Open innovation platforms and RRI as policy measures in Tampere region – putting responsibility in a test

The European Union initiative on Responsible research and innovation (RRI) gains increasingly attention among the policy makers in addition to academics, as projects and conceptual tools for it implementation evolve. Currently suggested indicators, policy measures, and evaluations focus mostly on national level in term of geographical aggregation. The presented research focuses on policy measures in regional RRI.

Approach to apply RRI in Tampere region (Finland) is based on Open Innovation Platforms (OIPs), and their qualities as inclusive and open innovation environments. The further development of RRI in this context is an assessment approach, which adds responsibility to the process. In this paper, the OIPs as tools to implement RRI at regional level are introduced and used assessment methods are discussed.

The objectives of the presented research are:

- to examine the role of regional policy practices (OIPs) supporting RRI in the region
- to identify the conditions and processes affecting RRI in OIPs
- to indicate obstacles and difficulties in using currently developed methodology to critically discuss the implementation of more thorough RRI on regional level

The research method is a participatory active research. Research techniques include desk research, interviews and a focus group. A literature review is used to identify status quo of RRI in regional policies as well as regional conditions and processes affecting RRI. Interviews with representatives of OIPs give an insight to implementation of RRI in the region. Maturity mapping, supported by focus group, gives an opportunity to investigate policy practices supporting RRI in the region, and to indicate obstacles in using currently developed methodology to assess RRI on regional level. Study is implemented as a part of the Interreg Europe project of eight European Regions; MARIE – “Mainstreaming Responsible Innovation in European S3”.

Track I – R&D, knowledge and universities in regional development

Thursday 10.15-11.30 (Parallel sessions 1)

Thursday 13.30-14.45 (Parallel sessions 2)

Thursday 15.00-16.15 (Parallel sessions 3)

Room: F106

Parallel session 1

Ploszaj, Adam; Olechnicka, Agnieszka & Celinska-Janowicz, Dorota

Core-periphery relations in international research collaboration and their implications for regional development policy

The paper investigates core-periphery relations in the network of international scientific collaboration and their implications for regional development processes and policies. We hypothesise that benefits from collaboration depend, *ceteris paribus*, on roles played by collaborators in the given collaboration. To capture the impact of various roles, we compare mean citation of collaborative papers in which authors from different countries perform a leading or a complementary role. The leading role can be attributed to scientists indicated as corresponding authors, while non-corresponding authors can be seen as complementary partners. Thus, we compare mean citations of internationally co-authored papers in which scholars affiliated in particular countries are either corresponding authors (“corresponding author paper”) or non-corresponding authors (“non-corresponding author paper”). The analysis is based on Web of Science data covering the period 2000-2013. The results of the study suggest that core countries seem to benefit most from international cooperation when they lead the research (i.e. when they play the role of a corresponding author), while peripheral countries benefit most from being led (i.e. when they play the role of a non-corresponding author). This can suggest that increasing international collaboration in science strengthens persistence of the spatial distribution of research excellence embedded in long-term historical processes.

Høvig, Øystein Stavø & Berge, Øyvind Midtbø

Different types of universities and their precondition for entrepreneurship: Towards a differentiated approach to student entrepreneurship programmes

The ‘entrepreneurial university’ has gained prominence and become a key term in higher education. Many universities are eager to position themselves as ‘entrepreneurial’ and increase their impact within regions and beyond through engaging in ‘third mission activities’ next to education and research, such as technology transfer, commercialization of knowledge and active contribution to private enterprises in the regional economy. The increased prevalence of student entrepreneurship programmes in higher education institutions might be seen as a part of such a development. Through various initiatives such as entrepreneurship courses, business development seminars and student incubator arrangements universities across the world are trying to support their students to pursue entrepreneurship. Such initiatives are often derived from well-performing research-dominated universities, and often applied in a similar way across many types of institutions. Here an attempt is made to show that there is no “best practice”-model for student entrepreneurship programmes as different types of universities differs strongly with respect to preconditions for student entrepreneurship. In addition, we argue that the regional context is of importance. In this paper we analyse different types of universities in their regional context with respect to their preconditions for student entrepreneurship. Based on a classification different strategies and options for student entrepreneurship programmes are developed and discussed. Our argument is advanced by drawing on insights and experience from a student entrepreneurship programme at a profession- and teaching-oriented university in Western Norway, as well as analyses of other types of universities in Norway.

Young, Mitchell; Pinheiro, Rómulo & Šima, Karel

Assessing the role of higher education institutions in peripheral regions: From university ambiguities to analytic eclecticism

This paper reports on the key findings from a 2-year comparative research project (funded by the Norwegian Research Council, under the Norway Grants program) investigating the role of public higher education institutions located in peripheral geographies in Norway and the Czech Republic. We have taken the university as our starting point and worked outwards to the region. Beginning with a theory rooted in institutionalist literature that depicts the university as a set of nested ambiguities, we break down the idea of the university as a coherent whole, and sought to explore the effects of these ambiguities in regional engagement processes. Each of the (six) case studies dissects and analyses one (sometimes more) of these ambiguities through a complementary theory, and in so doing, delves deeply in the inter-nested systems of university, region, industry, and policy. The paper takes seriously the idea that these are intrinsically inseparable, that is, they are co-evolving systems that mutually shape and reinforce each other. By engaging with a wide range of complementary theories that interrogate the ambiguities and provide insights valuable for both academics and practitioners, the paper provides a methodological advance into the use of analytic eclecticism

Vindenes, Knut

A relational approach to create cooperation between industry and research institutions

To increase the innovation in companies in Norway, more cooperation between industry and research institutions is needed. Relations is always the best basis for cooperation. Challenges are obviously different cultures, different targets, lack of knowledge about each other etc. We know Industrial phd as a tool provided by the government to build more bridges and not at least build advanced competence in the companies. The experiences seem to be good amongst those who have done this. However, we need more companies to get triggered for cooperation. How? The answer might be the new programme called Mobility, which is in pilot phase now. It is part of the bigger programme FORREGION/MobiFORSK run in cooperation between Hordaland Fylkeskommune and the Mohn centre for responsible innovation and regional development. Results so far are good and the main focus is on building new networks and relations between each company and academic environment involved as well as preparing for a new project phase. The concept is simply to arrange that an engineer or technologist from a company spends one day a week in an academic institution, building relations there and working on development tasks which gain both parties. This makes a starting point for more cooperation.

Success factors seem to be:

- As facilitator we take the role of introducing the parties to each others and motivate for using the programme.
- As facilitator we need to take care of all formalities; this makes it easier for the parties.
- As facilitator we informally follow up to make sure the cooperations runs as expected.
- The person needs to actually spend one day a week in the environment – taking part also in the social life there.
- The programme takes some of the salary costs, but less than 50%.

Parallel session 2

Kvitastein, Olav Andreas & Aarstad, Jarle

The effects of early entrepreneurial R&D support

The paper aims at considering the long-term effects of public support for R&D investment in the start-up phase. Using accounting record for a twenty years period, we launch two different ways of understanding the effects of early support for entrepreneurial R&D funding. We compare developments on economic dimensions such as employment, turnover, solidity and patents, and fate in terms of bankruptcies, acquisitions and take-overs. The paper is primarily methodological and consist of two different, but mutually supportive models for capturing the development over time. We investigate the economic using *a)* matching methods, whereas the fate dimensions are explored using *b)* a combination of matching methods and competing risk, i.e. hazard rate modelling. Both methods rely on contrafactual reasoning. That is, we use the differences between the observable, actual outcomes among the entrepreneurial companies with publicly supported R&D investment and the most likely outcomes among comparable companies with absent or less substantially supported R&D investments to get a measure of effects. Based on publicly available data at the firm level and established empirical models, the paper aims at an overview of potential effect of governmental and institutional effort at stimulating entrepreneurial efforts. The two different approaches provide dissimilar information; in particular concerning the importance of time elapsed from start-up to what could considered success or failure. Knowledge concerning the aggregated effects of early support for entrepreneurial R&D investments may have considerable policy implications.

Bergesen, Ole & Tveterås, Ragnar

From knowledge to innovation: Firms' internal skills, collaboration choices and innovative activity

Firms depend on several types of knowledge in their innovation processes, both research-based knowledge and other types of knowledge. The decision problem of a firm aiming to increase its knowledge base and ability to innovate includes internal recruitment of different types of skilled employees and collaboration with different types of external organizations. In this paper we analyze the relationships between firms' internal competencies and external collaboration, and ultimately their innovative activity. We distinguish between firms' average skills and R&D skills, as these may have different implications for external collaboration. We examine the relationships between firms' skill structure and the likelihood of collaboration with research intensive organizations (universities and R&D institutions) and private firms (suppliers, customers, etc.). Norwegian data from five community innovation surveys are linked with register data on employment and income to construct a dataset covering the years 2000-2010. We estimate logit models of the probability of collaboration and innovation. Explanatory variables include measures of average skills and R&D skills together with controls for sector, regional location, firm size etc. Innovations are divided into product-, process- and radical innovation. We explain the types of innovation by the same variables as collaboration but add dummies for type of collaborator. We find that firms' internal skill structure influence both their general likelihood of external collaboration, but also that firms with internal R&D resources tend to collaborate more with research intensive organizations. Finally, our models predict that internal skill structure and external collaboration choices are significant determinants of firms' innovation rates.

Evers, Gerwin

The hiring dynamics following a university industry-collaboration

There has been a growing interest over the past decades in the role that universities can play in regional development and innovation. The branch of this literature that focuses on university-

industry collaborations has identified increasing knowledge intensity as one of the main firm side drivers for these collaborations. However, several studies pointed at limited absorptive capacity as barrier in this process. We know from the absorptive capacity literature that acquiring human capital, in this case graduates, is a viable strategy to address this issue.

Furthermore, knowledge is in most cases accompanied by a tacit dimension, which creates additional barriers for firms when incorporating university knowledge. In addition, although firm side investments in university-industry collaborations and the development of absorptive capacity could in some cases pay-off for just a one-off collaboration, firms could increase the impact of a collaboration by establishing a permanent knowledge transfer mechanisms, allowing them to tap into university knowledge even after the collaboration has ended. The knowledge management literature suggest an important role of human capital to address these two specific issues, which in this case is firms hiring students from their university collaboration partner to initialize the tacit knowledge and create permanent connection via the social capital of the graduates.

Although many studies assume the presence of these hiring dynamics following a university-industry collaboration, only a few studies are able to provide some anecdotal evidence. To address this, we provide counterfactual quantitative evidence for both these distinct hiring dynamics by employing a rich Danish micro-level data set. Our findings indicate an increased hiring of both university graduates and graduates from the collaboration partner in particular. These results add to our understanding of the firm side dynamics following a university-industry interaction, and asks for incorporating these insights into the design and evaluation of university-industry interaction policies.

Muñuzuri, Jesús; Onieva, Luis; Guadix, José & Cortés, Pablo

Promoting R&D activities in the aeronautical cluster of Alentejo-Andalusia

The aeronautical sector represents the main source of industrial development in the South of the Iberian Peninsula, with the establishment of key players like Embraer in Alentejo or Airbus in Andalusia. Subsequently, the economic promotion policies implemented in both neighbouring regions seek to consolidate a trans-border aeronautical cluster to gain critical mass and seek synergies between companies and research centres.

The first step of the proposed scheme entails the identification of common interests shared by companies, technological centres and university research groups in both regions. This involves determining the specific type of activities carried out at the different companies established in the two regions (ranging from OEMs to SMEs), and also building a catalogue of available infrastructures and skills on the side of research centres and universities. The results of this first step reveal potential one-to-one partnerships, and also highlight the aggregate strengths and needs of the two regions within the aeronautical sector, taking into account both the current scenario and its expected evolution.

The second step of the scheme focuses on the particularly relevant companies identified in the first step, and consists of the completion of in-depth technological audits liable to suggest potential development actions or R&D projects in those companies, counting when possible on the capabilities shown by other members of the cluster. These technological audits follow a three-round process aimed at identifying specific needs, validating those identifications and suggesting possible actions to be taken.

The final objective of this methodology is to enhance the economic activity in the aeronautical sector in both regions, always with an innovative perspective. The success of the scheme should be measured in terms of partnerships created, R&D projects initiated, and spin-off companies generated.

Parallel session 3

Salomaa, Maria

Entrepreneurial Architecture and Rural Universities: The Case of Lincoln

Universities are expected to contribute to regional development through the 'third mission' going beyond the traditional academic core functions. However, currently the third mission literature has focused on a rather idealistic 'one-size-fits-all' approach to university engagement, though in reality universities have different ways to carry out third stream activities. This has been partly explained by geographic factors: therefore, this study seeks to examine how a particular context can shape universities' institutional responses towards the third mission with Entrepreneurial Architecture framework. A contextual element, namely a rural region, was added to the Entrepreneurial Architecture framework originally conceptualised by Vorley & Nelles (2009) to study how the rural context affects to the other dimensions of the EA framework.

A single case study of University of Lincoln (UK) demonstrates that a rural context has impact on the way universities develop their Entrepreneurial Architectures. Tentative findings from the case study suggest that in rural regions universities face increased expectations to take leadership outside of academia in the lack of other local knowledge institutions. The engagement is largely based on personal linkages with external stakeholders instead of formal collaboration mechanism, while the structures and strategic choices are oriented towards serving the local job market and regional priority sectors. These results implies that a particular context shapes the university's orientation and institutional responses to third stream activities, and thus further context-sensitive studies on universities' EA would be beneficial for exploring how universities can efficiently contribute to regional development in different environments.

Bellandi, Marco; Caloffi, Annalisa & De Masi, Sara

Entrepreneurial and engaged academics in a changing university: A critical view from Italy

This paper analyzes how the behavior of academics changes towards third mission activities, once that their university assumes central strategies typical of entrepreneurial and engaged universities. Focusing on the University of Florence in the period 2005-2015, we investigate how academics there organize to carry out third mission activities, before and after a turning point in 2010 regarding the structure of knowledge transfer offices. Our findings show that entrepreneurial and engaged academics pre-exist (central strategies of) the entrepreneurial and engaged university. However, some changes are observed after the turning point, which include: 1) an increase in the variety of types of academics' approaches to third mission activities; 2) an increased use of complex forms of their third mission activities (i.e. spin-offs, joint university-industry laboratories); 3) and in the organization of such activities. To better illustrate the transition in the same university, we analyze the case of a group of entrepreneurial and engaged academics working in the field of digital technologies applied to industry and to cultural heritage. Quite peculiarly to the Italian contexts, the case also suggests the possible combination, at the bottom level of research groups, of research excellence, entrepreneurial initiatives, and engagement in cultural heritage and community development, with the support of consistent central strategies.

Helgesen, Carsten; Heldal, Ilona; Rydland Olsen, Nina & Pettersen, Inger Beate
Entrepreneurial Universities: Establishing and Supporting Interdisciplinary Educational Projects

Interdisciplinary collaboration has proved to be critical to facilitate and enhance innovations processes, both in the private and public sectors. While interdisciplinary educations are highly promoted by most government bodies, it has proved difficult to start collaborative interdisciplinary educational projects within Universities. This can be explained by several factors. First, there are many obstacles arising from cultural differences across disciplines and research communities, departments, faculties and administrations. Second, challenges typically emerge due to different mind-sets that may hinder true collaboration.

Digital HealthLab is a project financed by Norgesuniversitetet providing systematic support for bachelor and master students from computing and from health and social care educations, aiming at defining common projects of an interdisciplinary character. The project offers an annual educational module guided by supportive innovation processes. The overall aim of this project is to contribute to interdisciplinary projects and education between entities with no or very limited collaboration experiences, as well as getting a deeper understanding of ways to achieve interdisciplinary work in education.

Participants in the project were bachelor students from healthcare and engineering. In addition, some master students from engineering took part. Data were collected from participatory observations and student evaluations. We will present challenges experienced the first time the module was offered, and lessons learnt after having run the module twice. The results showed the importance of understanding needs, requirements and possibilities reflected by the different educational programs where we had recruited students. Furthermore, we will point to supporting methodologies we found useful for solving interdisciplinary challenges, as well as presenting practical projects emerging from the Digital HealthLab project.

Taxt, Randi E.; Robinson, Douglas K.R.; Schoen, Antoine & Fløysand, Arnt
Research institutions and their economic relationships in regional innovation ecosystems

The Bergen Region has a longstanding traditions in the harvesting of seafood, as well as a dominant position on the global seafood market for fishing, production, processing and sale . The region encompasses all actors in the value chain from production of fry and fish, through processing and export, as well as equipment suppliers. and R&D institutions (EYGM Limited, 2017). In this respect, the Bergen region constitutes a vital marine innovation ecosystem (Fløysand and Jakobsen, 2016, Freeman, 1987, Cook, 1992, Moore 1993, Malerba, 2002, World Economic Forum, 2015). From the perspective of research driven innovation within the marine field, there is an increasing need to capture the impact of the research institutions, not only on markets per sé but also on the economic activity of their local environment (),

To be able to trace the linkages between research institutions and their local environments, we mobilise the concept of innovation ecosystems. Mazzucato and Robinson, 2017 define an Innovation Ecosystem as “the network of interconnected actors, organized around a particular value chain/industry where the actors include public agencies, firms, intermediaries and any other actor that contributes to the production and use of a product or service stemming from that value chain/industry”. However, there is a need for a broader understanding the system and how the linkages between its different elements function and evolve (Li-Ying, Sofka and Tuertscher, 2018, Perkman et al., 2013, Stam and Spiegel, 2016,).

Within the framework of the Horizon2020 project EMBRIC (European Marine Biotechnology Research Infrastructure Cluster), we have developed typology of economic linkages to capture the types of relationships between research performing organisations and economic actors within regional innovation ecosystems. This allows us to profile the both the public and private linkages of research institutions.

In this presentation, we will provide the rationale for the typology of relationships and present first round findings for the region of Bergen. The impact of the University of Bergen within the marine innovation ecosystem will be discussed and the relevance of regional versus national and international links will be highlighted.

Track J – Special session (open to all): EURIPER: EU innovation policies and peripheral regions

Thursday 15.00-16.15 (Parallel sessions 3)

Thursday 16.30-17.45 (Parallel sessions 4)

Room: F204

Parallel session 3

Gancarczyk, Marta; Najda-Janoszka, Marta & Gancarczyk, Jacek

Regional Innovation Policies as Enabling Constraints for Smart Specialization: The Case of Malopolska, Poland

The paper aims to explain how regional innovation policies enable and constrain the development of a region's specialization and innovative capacity, based on the case of Malopolska Voivodship, Poland. We adopt the theoretical approach of new institutional economics together with the concept of institutions as enabling constraints, and the theory of smart specialization. We show how innovation policies at the regional level act as formal institutions that frame the innovativeness and a regional specialization, ultimately, smart specialization. The constraining effects of innovation policies demonstrate as the objectives and measures that limit the range of allocation options toward a dominant direction, i.e., the specialization around regional core competencies. The enabling effects of innovation policies consist in selecting the most prospective industrial focus, as well as in setting new entrepreneurial opportunities and development options, which make the specialization smart, as a specialized diversification. We analyze the formulation and, partially, implementation of Malopolska innovation policies in the years 2005-2020, pointing to their roles as constrainters and enablers, and assessing their contribution in both respects. The major research methods included the analysis of secondary sources, such as policy documents, evaluation reports, and public statistics, as well as a direct and semi-structured interview with a key informant. In the first section of the paper, we elaborate a theoretical framework of regional policies as formal institutions and enabling constraints in fostering regional specialization and innovative capacity. Building upon this framework, the second section presents the methodology of our study. The third section describes the characteristics and performance of the Malopolska regional innovation system. In the fourth section we analyze the evolution of Malopolska innovation policies over the period 2005-2020. Finally, we assess the contribution of these policies to the regional smart specialization with the adoption of the theoretical framework and methods established in the preceding sections.

Losurdo, Francesco & Dileo, Ivano

Regional innovation policy in a peripheral area. The case of Apulia region

This paper focuses on the evolution of regional innovation policies in a peripheral area such as Apulia region in Italy. Despite efforts of national and regional governments to improve the knowledge infrastructure, the Apulia's R&I system and policy are characterized by diverse strengths and weaknesses. Apulia region shows structural constraints and has experienced sectoral crisis in traditional manufacturing that impede to perform as an innovative region within the European context. Indeed, factors such as the lower value of regional GDP compared to 2007 and the relative fragmentation of research activities act as barriers which slow the transformation of regional system into a highly technological and knowledge environment.

Nevertheless, some excellence such as Mechatronics and Aerospace Districts, ICT District, start-ups and a Competence Centre for ICT are creating new opportunities and linkages between firms and knowledge infrastructure. Also, these latest are also expanding the research and innovation activities, improving the technology absorption processes and increasing the rate of skilled human capital employed into local firms, considered as key elements to enhance competitiveness and job creation

González-López, Manuel

Understanding policy learning in regional innovation policies: lessons from the Galician case

This paper approaches the question of how learning happens at regional innovation policies in a multilevel governance framework. We analyze the case of Galicia (Spain), as an example of a region owning wide competencies on innovation policies and affected by two other government levels. Although the literature has not put particular emphasis on the importance of interactions with other government levels as learning channels, our findings show that this constitutes one of the most used channels for policy learning. Sometimes learning is associated to simple imitation to the national level, as it has been the case of the Galician innovation policy since its emergence. Other times learning is needed because a new political rationality is imposed by other government levels. This has been the case of the SmaSpe strategy in Galicia, which nevertheless was also key to enhance social and political participation, a channel for policy learning not commonly used before.

Strickert, Sissel

Towards a new mode of research dialogue in regional innovation policy

Open Science (OS) is the idea of making scientific research, data and dissemination accessible to all levels of society. If applied to scientific activity it affects the science system as whole; the frameworks of funding institutions, the frames for research proposals and claims, data handling, -storing and -accessibility to reuse data, the publishing and the peer review system for academic publishing research policy and open science tools and so forth (Pontika, Knoth, Cancellieri and Pearce, 2015). A main goal for EU Research and Innovation are open science (EU publications, 2016). The idea is to spread and make new knowledge accessible as soon as possible even as new knowledge is developing. This possibly represent a major turn in how scientific knowledge is being embedded in policy and society.

Applied regional innovation projects (ARIP) are characterized by having a complex set of goals in relation to practice (Johnsen, Hauge, Magnussen and Ennals, 2017). The regional development goals typically relate to the development of e.g. specific industries, higher education institutions or economic growth. Another set of goals are set in the academic environment and relates to e.g. research-based knowledge, quality or academic meritorious activities. ARIP`s often seek to combine goals from both spheres. When national institutions such as the Research Council of Norway (RCN) collaborate financially with the regional level there are several layers of goals that are expected to be managed in an ARIP (Abelsen, Isaksen and Jakobsen, 2013).

Research dissemination and dialogue in ARIP have some distinct characteristics linked to more emphasis on processes, dialogue, development orientated research and strategic interaction. Based on this I ask in this paper how the emerging open science paradigm can change the research dialogue between practice and research in the execution of regional innovation policy instruments?

This paper discusses VRI Agder as an example case.

Parallel session 4

Jon P. Knudsen

Devolution in Norway - A reform in the making

No abstract submitted.

Sánchez-Carreira, María del Carmen; Peñate-Valentín, María Concepción; Varela-Vázquez, Pedro & González-López, Manuel

Public procurement of innovation in health. The experience of Galicia

Public procurement of innovation (PPI) is a demand-side innovation policy, which has recently become more relevant in the EU. The public sector as a relevant consumer can promote innovation from the demand-side. PPI may contribute to the development of new products and services aimed at meeting socioeconomic or sustainability needs.

The role of PPI stands out in the health sector, because the public sector is one of the most relevant agents, being provider and the main buyer. In fact, 9.9% of GDP is allocated to health expenditures in OECD, mainly from the public sector. Most of these public expenditures are public procurement. Thus, one third of public procurement is allocated to health care in OECD countries.

The main aim of this paper is to analyse the experience of Galicia in PPI in health. This experience is pioneer, being Galicia one of the most active European regions in the use of PPI to develop new technologies, products and services for the health sector. Galicia is a Spanish region characterized by a high percentage of elderly people. The Galician government attempts to turn it into an opportunity, targeting for active ageing as a challenge of its regional smart specialization strategy. Moreover, it set up several plans to implement public procurement of innovation in health.

The paper focuses on identifying the main elements that drive the Galician case and the main difficulties that hinder such case. The analysis is based on literature review and semi-structured interviews with stakeholders involved in the process.

The results suggest that the availability of public funds, the involvement of different kind of stakeholders and the commitment with the project are key drivers. The main difficulties are the lack of experience of public procurers and enterprises, the difficulties of public-private interaction or time constraints.

Varela-Vázquez, Pedro; González-López, Manuel; Sánchez-Carreira, María del Carmen

The EU innovation policy and the cohesion policy for innovation: a zero sum game?

The R&I Framework Programmes and the European Structural and Investment Funds (ESIF) represent key supply-side instruments in the innovation policy mix in the European Union. Given their common final goals aimed at fostering innovation and competitiveness, it should be advisable to analyse the synergies between both policies and their contribution to regional cohesion.

The main aim of this paper is to assess geographical synergies between these instruments through the analysis of their main features and dynamics, as well as the geographical distribution of the different kinds of participation in both policies. In this regard, this paper compares the 6th and 7th Framework Programmes and the Horizon 2020 with the ESIF Research and Innovation. For this purpose, a comprehensive database was elaborated based on the data supplied by CORDIS and the Smart Specialisation Platform.

Empirical evidences underline different trends in these components of the innovation policy mix. On the one hand, coordination and participation in the Framework Programmes are heavily concentrated on the developed regions due to their previous higher innovation performance. Likewise, in the less developed regions there are two different groups of regions. One of them characterised by a remarkable project coordination, even higher than some middle-income regions, and other group with a low number of coordination or participation in projects. On the other hand, ESIF funds are mainly focused on less developed regions, in line with its basic distribution guidelines. For these reasons, synergies between these two policies may not tackle structural geographical disparities concerning innovation performance within the European Union. The expected result might be a zero sum game.

Organizing Committee for Regional Innovation Policies 2018

- Professor *Stig-Erik Jakobsen* (Western Norway University of Applied Sciences)
- Professor *Bjørn Terje Asheim* (University of Stavanger)
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